

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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In the Matter of:

AMENDMENTS TO 35 ILL. ADM. CODE  
PARTS 201, 202, AND 212

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) R23-018(A)  
) (Rulemaking – Air)  
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**NOTICE OF FILING**

To: Attached Service List

PLEASE TAKE NOTICE that today I have electronically filed with the Office of the Clerk of the Illinois Pollution Control Board **EXHIBITS TO EAST DUBUQUE NITROGEN FERTILIZERS, LLC’S PROPOSAL TO AMEND SECTION 217.381** and a **CERTIFICATE OF SERVICE**, which are attached and copies of which are herewith served upon you.

Dated: August 7, 2023

Respectfully submitted,

/s/ Alicia Garten  
East Dubuque Nitrogen Fertilizers, LLC  
By One of Its Attorneys

Byron F. Taylor  
John M. Heyde  
Alicia Garten  
**SIDLEY AUSTIN LLP**  
One South Dearborn  
Chicago, IL 60603  
(312) 853-7000  
bftaylor@sidley.com  
jheyde@sidley.com  
agarten@sidley.com



# **Exhibit 1**

**ENVIRONMENTAL PROTECTION  
AGENCY****40 CFR Part 52****[EPA-HQ-OAR-2012-0322; FRL-9924-05-OAR]****RIN 2060-AR68****State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA's SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final action.

**SUMMARY:** The Environmental Protection Agency (EPA) is taking final action on a petition for rulemaking filed by the Sierra Club (Petitioner) that concerns how provisions in EPA-approved state implementation plans (SIPs) treat excess emissions during periods of startup, shutdown or malfunction (SSM). Further, the EPA is clarifying, restating and revising its guidance concerning its interpretation of the Clean Air Act (CAA or Act) requirements with respect to treatment in SIPs of excess emissions

that occur during periods of SSM. The EPA evaluated existing SIP provisions in a number of states for consistency with the EPA's interpretation of the CAA and in light of recent court decisions addressing this issue. The EPA is issuing a finding that certain SIP provisions in 36 states (applicable in 45 statewide and local jurisdictions) are substantially inadequate to meet CAA requirements and thus is issuing a "SIP call" for each of those 36 states. Further, the EPA is establishing a due date for states subject to this SIP call action to submit corrective SIP revisions. Finally, this final action embodies the EPA's updated SSM Policy as it applies to SIP provisions. The SSM Policy provides guidance to states for compliance with CAA requirements for SIP provisions applicable to excess emissions during SSM events.

**DATES:** This final action shall become applicable on May 22, 2015. The deadline for each affected state to submit its corrective SIP revision is November 22, 2016.

**ADDRESSES:** The EPA has established a docket for this rulemaking under Docket ID No. EPA-HQ-OAR-2012-0322. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some

information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically at <http://www.regulations.gov> or in hard copy at the U.S. Environmental Protection Agency, EPA Docket Center, William Jefferson Clinton West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Office of Air and Radiation Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Ms. Lisa Sutton, U.S. EPA, Office of Air Quality Planning and Standards, State and Local Programs Group (C539-01), Research Triangle Park, NC 27711, telephone number (919) 541-3450, email address: [sutton.lisa@epa.gov](mailto:sutton.lisa@epa.gov).

**SUPPLEMENTARY INFORMATION:** For information related to a specific SIP, please contact the appropriate EPA Regional Office:

| EPA Regional Office | Contact for Regional Office<br>(person, mailing address, telephone number)   | State   |
|---------------------|--|---|
| I .....             | Alison Simcox, Environmental Scientist, EPA Region 1, 5 Post Office Square, Suite 100, Boston, MA 02109-3912, (617) 918-1684.  | Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island and Vermont.                     |
| II .....            | Karl Mangels, Chief, Air Planning Section, EPA Region 2, 290 Broadway, 25th Floor, New York, NY 10007-1866, (212) 637-4078.  | New Jersey, New York, Puerto Rico and Virgin Islands.   |
| III .....           | Amy Johansen, EPA Region 3, 1650 Arch Street, Philadelphia, PA 19103-2029, (215) 814-2156.   | District of Columbia, Delaware, Maryland, Pennsylvania, Virginia and West Virginia.             |
| IV .....            | Joel Huey, EPA Region 4, Atlanta Federal Center, 61 Forsyth Street SW., Atlanta, GA 30303-8960, (404) 562-9104.  | Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee. |
| V .....             | Mary Portanova, Air and Radiation Division (AR-18J), EPA Region 5, 77 West Jackson Boulevard, Chicago, IL 60604-3507, (312) 353-5954.  | Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.                                     |
| VI .....            | Alan Shar (6PD-L), EPA Region 6, Fountain Place 12th Floor, Suite 1200, 1445 Ross Avenue, Dallas, TX 75202-2733, (214) 665-6691.   | Arkansas, Louisiana, New Mexico, Oklahoma and Texas.  |
| VII .....           | Lachala Kemp, EPA Region 7, Air Planning and Development Branch, 11201 Renner Boulevard, Lenexa, KS 66219-9601, (913) 551-7214. Alternate contact is Ward Burns, (913) 551-7960. | Iowa, Kansas, Missouri and Nebraska.  |
| VIII .....          | Adam Clark, Air Quality Planning Unit (8P-AR) Air Program, EPA Region 8, 1595 Wynkoop Street, Denver, CO 80202-1129, (303) 312-7104.   | Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.                                |
| IX .....            | Andrew Steckel, EPA Region 9, Air Division, 75 Hawthorne Street (AIR-4), San Francisco, CA 94105-3901, (415) 947-4115.   | Arizona, California, Hawaii, Nevada and the Pacific Islands.                                    |
| X .....             | Dave Bray, Office of Air, Waste and Toxics (AWT-150), EPA Region 10, 1200 Sixth Avenue, Suite 900, Seattle, WA 98101-3140, (206) 553-4253.                                       | Alaska, Idaho, Oregon, and Washington.  |

## I. General Information

### A. Does this action apply to me?

Entities potentially affected by this action include states, U.S. territories, local authorities and eligible tribes that are currently administering, or may in the future administer, EPA-approved implementation plans ("air agencies").<sup>1</sup> The EPA's action on the petition for rulemaking filed by the Sierra Club with the EPA Administrator on June 30, 2011 (the Petition), is potentially of interest to all such entities because the EPA is addressing issues related to basic CAA requirements for SIPs. The particular issues addressed in this rulemaking are the same issues that the Petition identified, which relate specifically to section 110 of the CAA. Pursuant to section 110, through what is generally referred to as the "SIP program," the states and the EPA together provide for implementation, maintenance and enforcement of the national ambient air quality standards (NAAQS). While recognizing similarity to (and in some instances overlap with) issues concerning other air programs, e.g., concerning SSM provisions in the EPA's regulatory programs for New Source Performance Standards (NSPS) pursuant to section 111 and National Emission Standards for Hazardous Air Pollutants (NESHAP) pursuant to section 112, the EPA notes that the issues addressed in this rulemaking are specific to SSM provisions in the SIP program. Through this rulemaking, the EPA is both clarifying and applying its interpretation of the CAA with respect to SIP provisions applicable to excess emissions during SSM events in general. In addition, the EPA is issuing findings that some of the specific SIP provisions in some of the states identified in the Petition and some SIP provisions in additional states are substantially

<sup>1</sup> The EPA respects the unique relationship between the U.S. government and tribal authorities and acknowledges that tribal concerns are not interchangeable with state concerns. Under the CAA and EPA regulations, a tribe may, but is not required to, apply for eligibility to have a tribal implementation plan (TIP). For convenience, the EPA refers to "air agencies" in this rulemaking collectively when meaning to refer in general to states, the District of Columbia, U.S. territories, local air permitting authorities and eligible tribes that are currently administering, or may in the future administer, EPA-approved implementation plans. This final action does not include action on any provisions in any TIP. The EPA therefore refers to "state" or "states" rather than "air agency" or "air agencies" when meaning to refer to the District of Columbia and/or one, some, or all of the states at issue in this rulemaking. The EPA also uses "state" or "states" rather than "air agency" or "air agencies" when quoting or paraphrasing the CAA or other document that uses that term even when the original referenced passage may have applicability to tribes as well.

inadequate to meet CAA requirements, pursuant to CAA section 110(k)(5), and thus those states (named in section II.C of this document) are directly affected by this rulemaking. For example, where a state's existing SIP includes an affirmative defense provision that would purport to alter the jurisdiction of the federal courts to assess monetary penalties for violations of CAA requirements, then the EPA is determining that the SIP provision is substantially inadequate because the provision is inconsistent with fundamental requirements of the CAA. This action may also be of interest to the public and to owners and operators of industrial facilities that are subject to emission limitations in SIPs, because it will require changes to certain state rules applicable to excess emissions during SSM events. This action embodies the EPA's updated SSM Policy concerning CAA requirements for SIP provisions relevant to excess emissions during SSM events.

### B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this document will also be available on the World Wide Web. Following signature by the EPA Administrator, a copy of this document will be posted on the EPA's Web site, under "State Implementation Plans to Address Emissions During Startup, Shutdown and Malfunction," at <http://www.epa.gov/air/urbanair/sipstatus>. The EPA's initial proposed response to the Petition in the February 2013 proposal, the EPA's revised proposed response to the Petition in the September 2014 supplemental notice of proposed rulemaking (SNPR) and the EPA's Response to Comments document may be found in the docket for this action.

### C. How is the preamble organized?

The information presented in this preamble is organized as follows:

#### I. General Information

- A. Does this action apply to me?
- B. Where can I get a copy of this document and other related information?
- C. How is the preamble organized?
- D. What is the meaning of key terms used in this document?

#### II. Overview of Final Action and Its Consequences

- A. Summary
- B. What the Petitioner Requested
- C. To which air agencies does this rulemaking apply and why?
- D. What are the next steps for states that are receiving a finding of substantial inadequacy and a SIP call?

- E. What are potential impacts on affected states and sources?
- F. What happens if an affected state fails to meet the SIP submission deadline?

- G. What is the status of SIP provisions affected by this SIP call action in the interim period starting when the EPA promulgates the final SIP call and ending when the EPA approves the required SIP revision?

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#### IV. Final Action in Response to Request To Rescind the EPA Policy Interpreting the CAA To Allow Affirmative Defense Provisions

- A. What the Petitioner Requested
- B. What the EPA Proposed
- C. What Is Being Finalized in This Action
- D. Response to Comments Concerning Affirmative Defense Provisions in SIPs

#### V. Generally Applicable Aspects of the Final Action in Response to Request for the EPA's Review of Specific Existing SIP Provisions for Consistency With CAA Requirements

- A. What the Petitioner Requested
- B. What the EPA Proposed
- C. What Is Being Finalized in This Action
- D. Response to Comments Concerning the CAA Requirements for SIP Provisions Applicable to SSM Events

#### VI. Final Action in Response to Request That the EPA Limit SIP Approval to the Text of State Regulations and Not Rely Upon Additional Interpretive Letters From the State

- A. What the Petitioner Requested
- B. What the EPA Proposed
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#### VII. Clarifications, Reiterations and Revisions to the EPA's SSM Policy

- A. Applicability of Emission Limitations During Periods of SSM
  1. What the EPA Proposed
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- B. Alternative Emission Limitations During Periods of Startup and Shutdown
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- C. Director's Discretion Provisions Pertaining to SSM Events
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- B. SIP Call Process Under Section 110(k)(5)
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  - D. Recommendations for Development of Alternative Emission Limitations Applicable During Startup and Shutdown
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- XIV. Statutory and Executive Order Reviews
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  - B. Paperwork Reduction Act (PRA)
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

- G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use
- I. National Technology Transfer and Advancement Act (NTTAA)
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Determination Under Section 307(d) L. Congressional Review Act (CRA)
- XV. Judicial Review
- XVI. Statutory Authority

*D. What is the meaning of key terms used in this document?*

For the purpose of this document, the following definitions apply unless the context indicates otherwise:

The terms *Act* or *CAA* or *the statute* mean or refer to the Clean Air Act.

The term *affirmative defense* means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding. The term *affirmative defense provision* means more specifically a state law provision in a SIP that specifies particular criteria or preconditions that, if met, would purport to preclude a court from imposing monetary penalties or other forms of relief for violations of SIP requirements in accordance with CAA section 113 or CAA section 304.

The term *Agency* means or refers to the EPA. When not capitalized, this term refers to an agency in general and not specifically to the EPA.

The terms *air agency* and *air agencies* mean or refer to states, the District of Columbia, U.S. territories, local air permitting authorities with delegated authority from the state and tribal authorities with appropriate CAA jurisdiction.

The term *alternative emission limitation* means, in this document, an emission limitation in a SIP that applies to a source during some but not all periods of normal operation (e.g., applies only during a specifically defined mode of operation such as startup or shutdown). An alternative emission limitation is a component of a continuously applicable SIP emission limitation, and it may take the form of a control measure such as a design, equipment, work practice or operational standard (whether or not numerical). This definition of the term is independent of the statutory use of the term "alternative means of emission limitation" in sections 111(h)(3) and 112(h)(3), which pertain to the conditions under which the EPA may pursuant to sections 111 and 112 promulgate emission limitations, or components of emission limitations, that are not necessarily in numeric format.

The term *automatic exemption* means a generally applicable provision in a SIP that would provide that if certain conditions

existed during a period of excess emissions, then those exceedances would not be considered violations of the applicable emission limitations.

The term *director's discretion provision* means, in general, a regulatory provision that authorizes a state regulatory official unilaterally to grant exemptions or variances from otherwise applicable emission limitations or control measures, or to excuse noncompliance with otherwise applicable emission limitations or control measures, which would be binding on the EPA and the public.

The term *EPA* refers to the United States Environmental Protection Agency.

The term *emission limitation* means, in the context of a SIP, a legally binding restriction on emissions from a source or source category, such as a numerical emission limitation, a numerical emission limitation with higher or lower levels applicable during specific modes of source operation, a specific technological control measure requirement, a work practice standard, or a combination of these things as components of a comprehensive and continuous emission limitation in a SIP provision. In this respect, the term *emission limitation* is defined as in section 302(k) of the CAA. By definition, an emission limitation can take various forms or a combination of forms, but in order to be permissible in a SIP it must be applicable to the source continuously, i.e., cannot include periods during which emissions from the source are legally or functionally exempt from regulation. Regardless of its form, a fully approvable SIP emission limitation must also meet all substantive requirements of the CAA applicable to such a SIP provision, e.g., the statutory requirement of section 172(c)(1) for imposition of reasonably available control measures and reasonably available control technology (RACT and RACT) on sources located in designated nonattainment areas.

The term *excess emissions* means the emissions of air pollutants from a source that exceed any applicable SIP emission limitation. In particular, this term includes those emissions above the otherwise applicable SIP emission limitation that occur during startup, shutdown, malfunction or other modes of source operation, i.e., emissions that would be considered violations of the applicable emission limitation but for an impermissible automatic or discretionary exemption from such emission limitation.

The term *February 2013 proposal* means the notice of proposed rulemaking that the EPA signed on February 12, 2013, and published in the **Federal Register** on February 22, 2013. The February 2013 proposal comprises the EPA's initial proposed response to the Petition. The EPA subsequently issued the September 2014 SNPR that updated and revised the EPA's February 2013 proposal with respect to affirmative defense provisions in SIPs.

The term *malfunction* means a sudden and unavoidable breakdown of process or control equipment.

The term *NAAQs* means national ambient air quality standard or standards. These are the national primary and secondary ambient

air quality standards that the EPA establishes under CAA section 109 for criteria pollutants for purposes of protecting public health and welfare.

The term *Petition* refers to the petition for rulemaking titled, "Petition to Find Inadequate and Correct Several State Implementation Plans under Section 110 of the Clean Air Act Due to Startup, Shutdown, Malfunction, and/or Maintenance Provisions," filed by the Sierra Club with the EPA Administrator on June 30, 2011.

The term *Petitioner* refers to the Sierra Club.

The term *practically enforceable* means, in the context of a SIP emission limitation, that the limitation is enforceable as a practical matter (e.g., contains appropriate averaging times, compliance verification procedures and recordkeeping requirements). The term uses "practically" as it means "in a practical manner" and not as it means "almost" or "nearly." In this document, the EPA uses the term "practically enforceable" as interchangeable with the term "practicably enforceable."

The term *shutdown* means, generally, the cessation of operation of a source for any reason. In this document, the EPA uses this term in the generic sense. In individual SIP provisions it may be appropriate to include a specifically tailored definition of this term to address a particular source category for a particular purpose.

The term *SIP* means or refers to a State Implementation Plan. Generally, the SIP is the collection of state statutes and regulations approved by the EPA pursuant to CAA section 110 that together provide for implementation, maintenance and enforcement of a national ambient air quality standard (or any revision thereof) promulgated under section 109 for any air pollutant in each air quality control region (or portion thereof) within a state. In some parts of this document, statements about SIPs in general would also apply to tribal implementation plans in general even though not explicitly noted.

The term *SNPR* means the supplemental notice of proposed rulemaking that the EPA signed and posted on the Agency Web site on September 5, 2014, and published in the **Federal Register** on September 17, 2014. Supplementing the February 2013 proposal, the SNPR comprises the EPA's revised proposed response to the Petition with respect to affirmative defense provisions in SIPs.

The term *SSM* refers to startup, shutdown or malfunction at a source. It does not include periods of maintenance at such a source. An SSM event is a period of startup, shutdown or malfunction during which there may be exceedances of the applicable emission limitations and thus excess emissions.

The term *SSM Policy* refers to the cumulative guidance that the EPA has issued as of any given date concerning its interpretation of CAA requirements with respect to treatment of excess emissions during periods of startup, shutdown and malfunction at a source in SIP provisions. The most comprehensive statement of the EPA's SSM Policy prior to this final action

is embodied in a 1999 guidance document discussed in more detail in this final action. That specific guidance document is referred to as the *1999 SSM Guidance*. The final action described in this document embodies the EPA's updated SSM Policy for SIP provisions relevant to excess emissions during SSM events. In section XI of this document, the EPA provides a statement of the Agency's SSM SIP Policy as of 2015.

The term *startup* means, generally, the setting in operation of a source for any reason. In this document, the EPA uses this term in the generic sense. In an individual SIP provision it may be appropriate to include a specifically tailored definition of this term to address a particular source category for a particular purpose.

## II. Overview of Final Action and Its Consequences

### A. Summary

The EPA is in this document taking final action on a petition for rulemaking that the Sierra Club filed with the EPA Administrator on June 30, 2011. The Petition concerns how air agency rules in EPA-approved SIPs treat excess emissions during periods of SSM of industrial source process or emission control equipment. Many of these rules were added to SIPs and approved by the EPA in the years shortly after the 1970 amendments to the CAA, which for the first time provided for the system of clean air plans that were to be prepared by air agencies and approved by the EPA. At that time, it was widely believed that emission limitations set at levels representing good control of emissions during periods of so-called "normal" operation (which, until no later than 1982, was meant by the EPA to refer to periods of operation other than during startup, shutdown, maintenance or malfunction) could in some cases not be met with the same emission control strategies during periods of startup, shutdown, maintenance or malfunction.<sup>2</sup> Accordingly, it was common for state plans to include provisions for special, more lenient treatment of excess emissions during such periods of startup, shutdown, maintenance or

malfunction. Many of these provisions took the form of absolute or conditional statements that excess emissions from a source, when they occur during startup, shutdown, malfunction or otherwise outside of the source's so-called "normal" operations, were not to be considered violations of the air agency rules; i.e., these emissions were considered exempt from legal control.

Excess emission provisions for startup, shutdown, maintenance and malfunctions were often included as part of the original SIPs that the EPA approved in 1971 and 1972. In the early 1970s, because the EPA was inundated with proposed SIPs and had limited experience in processing them, not enough attention was given to the adequacy, enforceability and consistency of these provisions. Consequently, many SIPs were approved with broad and loosely defined provisions to control excess emissions. Starting in 1977, however, the EPA discerned and articulated to air agencies that exemptions for excess emissions during such periods were inconsistent with certain requirements of the CAA.<sup>3</sup> The EPA also realized that such provisions allow opportunities for sources to emit pollutants during such periods repeatedly and in quantities that could cause unacceptable air pollution in nearby communities with no legal pathway within the existing EPA-approved SIP for air agencies, the EPA, the public or the courts to require the sources to make reasonable efforts to reduce these emissions. The EPA has attempted to be more careful after 1977 not to approve SIP submissions that contain illegal SSM provisions and has issued several guidance memoranda to advise states on how to avoid impermissible provisions<sup>4</sup> as they expand and revise their SIPs. The EPA has also found several SIPs to be deficient because of problematic SSM provisions and called upon the affected states to amend their SIPs. However, in light of the other high-priority work facing both air agencies and the EPA,

<sup>2</sup> Since at least 1982, however, the EPA has used the term "normal" in the SSM Policy in the ordinary sense of the word to distinguish between predictable modes of source operation such as startup and shutdown and genuine "malfunctions," which are by definition supposed to be unpredictable and unforeseen events and which could not have been precluded by proper source design, maintenance and operation. See, e.g., 1982 SSM Guidance, Attachment at 2, in which the EPA states, "[s]tart-up and shutdown of process equipment are part of the normal operation of a source and should be accounted for in the design and implementation of the operating procedure for the process and control equipment." The 1982 SSM Guidance is in the rulemaking docket at EPA-HQ-OAR-2012-0322-0005.

<sup>3</sup> In 1977, the EPA took actions related to specific sources located in Utah and Idaho in which the EPA expressed its views regarding issues such as automatic exemptions from applicable emission limitations. See Memorandum, "Statutory, Regulatory, and Policy Context for this Rulemaking," at n.2, February 4, 2013, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0029.

<sup>4</sup> The term "impermissible provision" as used throughout this document is generally intended to refer to a SIP provision that the EPA now believes to be inconsistent with requirements of the CAA. As described later in this document (see section VIII.A), the EPA is proposing to find a SIP "substantially inadequate" to meet CAA requirements where the EPA determines that the SIP includes an impermissible provision.

the EPA had not until the February 2013 proposal initiated a broader effort to require a larger number of states to remove impermissible provisions from their SIPs and to adopt other, approvable approaches for addressing excess emissions when appropriate. Public interest in the issue of SSM provisions in SIPs is evidently high, on the basis of the large number of public submissions made to the rulemaking docket in response to the February 2013 proposal (representing approximately 69,000 unique commenters) and the SNPR (over 20,000 commenters, some of whom had also made submissions in response to the earlier proposal). The EPA has attempted to further count commenters according to general categories (state and local governments, industry commenters, public interest groups and individual commenters), as described in section V.D.1 of this document. Public interest groups, including the Petitioner, have sued the EPA in several state-specific cases concerning SIP issues, and they have been urging the EPA to give greater priority generally to addressing the issue of SSM provisions in SIPs. In one of these SIP cases, the EPA entered into a settlement agreement requiring it to respond to the Petition from the Sierra Club. A copy of the settlement agreement is provided in the docket for this rulemaking.<sup>5</sup>

The EPA emphasizes that there are other approaches that would be consistent with CAA requirements for SIP provisions that states can use to address emissions during SSM events. While automatic exemptions and director's discretion exemptions from otherwise applicable emission limitations are not consistent with the CAA, SIPs may include criteria and procedures for the use of enforcement discretion by air agency personnel. Similarly, SIPs may, rather than exempt emissions during SSM events, include emission limitations that subject those emissions to alternative numerical limitations or other technological control requirements or work practice requirements during startup and shutdown events, so long as those components of the emission limitations meet applicable CAA requirements. In this action, the EPA is again articulating

its interpretation of the CAA in the SSM Policy that reflects these principles and is applying this interpretation to issue a SIP call for specific existing provisions in the SIPs of 36 states. In some cases, the EPA's review involved a close reading of the provision in the SIP and its context to discern whether it was in fact an exemption, a statement regarding exercise of enforcement discretion by the air agency or an affirmative defense. Each state will ultimately decide how to address the SIP inadequacies identified by the EPA in this final action. The EPA acknowledges that for some states, this rulemaking entailed the EPA's evaluation of SIP provisions that may date back several decades. Aware of that fact, the EPA is committed to working closely with each of the affected states to develop approvable SIP submissions consistent with the guidance articulated in the updated SSM Policy in this final action. Section IX of this document presents the EPA's analysis of each specific SIP provision at issue in this action. The EPA's review also involved interpretation of several relevant sections of the CAA. While the EPA has already developed and has been implementing the SSM Policy that is based on its interpretation of the CAA for SIP provisions, this action provides the EPA an opportunity to update the SSM Policy and its basis in the CAA through notice and comment. To that end, section XI of this document contains a restatement of the EPA's SSM Policy for SIP provisions as revised and updated for 2015. Also, supplementary to the February 2013 proposal, the EPA provided a background memorandum to summarize the legal and administrative context for this action which is available in the docket for this rulemaking.<sup>6</sup> This final document is intended to clarify how states can resolve the identified deficiencies in their SIPs as well as to provide all air agencies guidance as they develop SIPs in the future.

In summary, the EPA is agreeing with the Petitioner that many of the identified SIP provisions are not permissible under the CAA. However, in some cases the EPA is instead concluding that an identified SIP provision is actually consistent with CAA requirements. In addition, the EPA notes, this final action does not include

a final finding of substantial inadequacy and SIP call for specific SIP provisions included in the February 2013 proposal for several air agencies, because of SIP revisions made subsequent to that proposal. The state of Kentucky has already submitted, and the EPA has approved, SIP revisions that corrected the problematic provisions applicable in the Jefferson County (Louisville, Kentucky) area.<sup>7</sup> The state of Wyoming has already submitted, and the EPA has approved, SIP revisions that corrected the problematic provisions applicable statewide.<sup>8</sup> The state of North Dakota has likewise already submitted, and the EPA has approved, SIP revisions that corrected a portion of the problematic provisions applicable statewide.<sup>9</sup>

Of the 41 states for which SIP provisions were identified by the Petition or identified independently by the Agency in the SNPR, the EPA is issuing a SIP call for 36 states. The EPA is aware of other SSM-related SIP provisions that were not identified in the Petition but that may be inconsistent with the EPA's interpretation of the CAA. For SIP provisions that have potential defects other than an impermissible affirmative defense, the EPA elected to focus on the provisions specifically raised in the Petition. The EPA may address these other provisions later in a separate notice-and-comment action. States are encouraged to consider the updated SSM Policy laid out in this final action in reviewing their own SIP provisions. With respect to affirmative defense provisions, however, the EPA elected to identify some additional provisions not included in the Petition. This is necessary to minimize potential confusion relating to other recent rulemakings and court decisions that pertain generally to affirmative defense provisions. Therefore, in order to give updated and comprehensive guidance with respect to affirmative defense provisions, the EPA has also addressed additional affirmative defense provisions in 17 states in the SNPR and in this final action. See section V.D.3 of this document for further explanation as to which SSM-related SIP provisions the

<sup>5</sup> See Settlement Agreement executed November 30, 2011, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0039, to address a lawsuit filed by Sierra Club and WildEarth Guardians in the United States District Court for the Northern District of California: *Sierra Club et al. v. Jackson*, No. 3:10-cv-04060-CRB (N.D. Cal.). A subsequent Modification to the Settlement Agreement specifies a deadline of May 22, 2015, for signature on the final action to respond to the Petition.

<sup>6</sup> See Memorandum, "Statutory, Regulatory, and Policy Context for this Rulemaking," February 4, 2013, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0029. The EPA notes that with respect to the legal basis for affirmative defense provisions in SIPs, the Agency has revised its views as a result of a court decision, as explained in more detail in the SNPR. Thus, the portions of that background memorandum that concern affirmative defense provisions are no longer germane to this action.

<sup>7</sup> See "Approval and Promulgation of Implementation Plans; Kentucky; Approval of Revisions to the Jefferson County Portion of the Kentucky SIP; Emissions During Startups, Shutdowns, and Malfunctions," 79 FR 33101 (June 10, 2014).

<sup>8</sup> See "Approval and Promulgation of Implementation Plans; Wyoming; Revisions to the Air Quality Standards and Regulations," 79 FR 62859 (October 21, 2014).

<sup>9</sup> See "Approval and Promulgation of Implementation Plans; North Dakota; Revisions to the Air Pollution Control Rules," 79 FR 63045 (October 22, 2014).



EPA reviewed for consistency with CAA requirements as part of this rulemaking.

#### *B. What the Petitioner Requested*

The Petition includes three interrelated requests concerning the treatment in SIPs of excess emissions by sources during periods of SSM.

First, the Petitioner argued that SIP provisions providing an affirmative defense for monetary penalties for excess emissions in judicial proceedings are contrary to the CAA. Thus, the Petitioner advocated that the EPA should rescind its interpretation of the CAA expressed in the SSM Policy that allows appropriately drawn affirmative defense provisions in SIPs. The Petitioner made no distinction between affirmative defenses for excess emissions related to malfunction and those related to startup or shutdown. Further, the Petitioner requested that the EPA issue a SIP call requiring states to eliminate all such affirmative defense provisions in existing SIPs. As explained later in this final document, the EPA has decided to fully grant this request. Although the EPA initially proposed to grant in part and to deny in part this request in the February 2013 proposal, a subsequent court decision concerning the legal basis for affirmative defense provisions under the CAA caused the Agency to reexamine this question. As a result, the EPA issued the SNPR to present its revised interpretation of the CAA with respect to this issue and to propose action on the Petition and on specific existing affirmative defense provisions in the SIPs of 17 states consistent with the reasoning of that court decision. In this final action, the EPA is revising its SSM Policy with respect to affirmative defenses for violations of SIP requirements. The EPA believes that SIP provisions that function to alter the jurisdiction of the federal courts under CAA section 113 and section 304 to determine liability and to impose remedies are inconsistent with fundamental legal requirements of the CAA, especially with respect to the enforcement regime explicitly created by statute.

Second, the Petitioner argued that many existing SIPs contain impermissible provisions, including automatic exemptions from applicable emission limitations during SSM events, director's discretion provisions that in particular provide discretionary exemptions from applicable emission limitations during SSM events, enforcement discretion provisions that appear to bar enforcement by the EPA or citizens for such excess emissions and inappropriate affirmative defense

provisions that are not consistent with the CAA or with the recommendations in the EPA's SSM Policy. The Petitioner identified specific provisions in SIPs of 39 states that it considered inconsistent with the CAA and explained the basis for its objections to the provisions. As explained later in this final document, the EPA agrees with the Petitioner that some of these existing SIP provisions are legally impermissible and thus finds such provisions "substantially inadequate"<sup>10</sup> to meet CAA requirements. Among the reasons for the EPA's action is to eliminate SIP provisions that interfere with enforcement in a manner prohibited by the CAA. Simultaneously, where the EPA agrees with the Petitioner, the EPA is issuing a SIP call that directs the affected state to revise its SIP accordingly. For the remainder of the identified provisions, however, the EPA disagrees with the contentions of the Petitioner and is thus denying the Petition with respect to those provisions and taking no further action. The EPA's action issuing the SIP calls on this portion of the Petition will assure that these SIPs comply with the fundamental requirements of the CAA with respect to the treatment of excess emissions during periods of SSM. The majority of the state-specific provisions affected by this SIP call action are inconsistent with the EPA's longstanding interpretation of the CAA through multiple iterations of its SSM Policy. With respect to SIP provisions that include an affirmative defense for violations of SIP requirements, however, the EPA has revised its prior interpretation of the statute that would have allowed such provisions under certain very limited conditions. Based upon an evaluation of the relevant statutory provisions in light of more recent court decisions, the EPA is issuing a SIP call to address existing affirmative defense provisions that would operate to alter or eliminate the jurisdiction of courts to assess liability and impose remedies and that would thereby contradict explicit provisions of the CAA relating to judicial authority.

Third, the Petitioner argued that the EPA should not rely on interpretive letters from states to resolve any ambiguity, or perceived ambiguity, in state regulatory provisions in SIP submissions. The Petitioner reasoned that all regulatory provisions should be clear and unambiguous on their face and that any reliance on interpretive letters to alleviate facial ambiguity in SIP provisions can lead to later

problems with compliance and enforcement. Extrapolating from several instances in which the basis for the original approval of a SIP provision related to excess emissions during SSM events was arguably not clear, the Petitioner contended that the EPA should never use interpretive letters to resolve such ambiguities. As explained later in this proposal, the EPA acknowledges the concern of the Petitioner that provisions in SIPs should be clear and unambiguous. However, the EPA does not agree with the Petitioner that reliance on interpretive letters in a rulemaking context is never appropriate. Without the ability to rely on a state's interpretive letter that can in a timely way clarify perceived ambiguity in a provision in a SIP submission, however small that ambiguity may be, the EPA may have no recourse other than to disapprove the state's SIP submission. Thus, the EPA is denying the request that actions on SIP submissions never rely on interpretive letters. Instead, the EPA explains how proper documentation of reliance on interpretive letters in notice-and-comment rulemaking nevertheless addresses the practical concerns of the Petitioner.

#### *C. To which air agencies does this rulemaking apply and why?*

In general, the final action may be of interest to all air agencies because the EPA is clarifying, restating and revising its longstanding SSM Policy with respect to what the CAA requires concerning SIP provisions relevant to excess emissions during periods of SSM. For example, the EPA is granting the Petitioner's request that the EPA rescind its prior interpretation of the CAA that, as stated in prior guidance in the SSM Policy, allowed appropriately drawn affirmative defense provisions applicable to malfunctions. The EPA is also reiterating, clarifying or revising its prior guidance with respect to several other issues related to SIP provisions applicable to SSM events in order to ensure that future SIP submissions, not limited to those that affected states make in response to this action, are fully consistent with the CAA. For example, the EPA is reiterating and clarifying its prior guidance concerning how states may elect to replace existing exemptions for excess emissions during SSM events with properly developed alternative emission limitations that apply to the affected sources during startup, shutdown or other normal modes of source operation (*i.e.*, that apply to excess emissions during those normal modes of operation as opposed to during malfunctions). This action also

<sup>10</sup> The term "substantially inadequate" is used in the CAA and is discussed in detail in section VIII.A of this document.

addresses the use of interpretive letters for purposes of resolving an actual or perceived ambiguity in a SIP submission during the EPA's evaluation of the SIP revision at issue.

In addition, this final action is directly relevant to the states with SIP provisions relevant to excess emissions that the EPA has determined are inconsistent with CAA requirements or with the EPA's interpretation of those requirements in the SSM Policy. In this final action, the EPA is either granting

or denying the Petition with respect to the specific existing SIP provisions in each of 39 states identified by the Petitioner as allegedly inconsistent with the CAA. The 39 states (for which the Petitioner identified SIP provisions applicable in 46 statewide and local jurisdictions and no tribal areas)<sup>11</sup> are listed in table 1, "List of States with SIP Provisions for Which the EPA Either Grants or Denies the Petition, in Whole or in Part." After evaluating the Petition, the EPA is granting the Petition with

respect to one or more provisions in 34 of the 39 states listed, and these are the states for which the action on the Petition, according to table 1, is either "Grant" or "Partially grant, partially deny." Conversely, the EPA is denying the petition with respect to all provisions that the Petitioner identified in 5 of the 39 states, and these (Idaho, Nebraska, New Hampshire, Oregon and Wyoming) are the states for which the final action on the Petition, according to table 1, is "Deny."

TABLE 1—LIST OF STATES WITH SIP PROVISIONS FOR WHICH THE EPA EITHER GRANTS OR DENIES THE PETITION, IN WHOLE OR IN PART

| EPA region | State                      | Final action on petition         |
|------------|----------------------------|----------------------------------|
| I .....    | Maine .....                | Grant.                           |
|            | New Hampshire .....        | Deny.                            |
|            | Rhode Island .....         | Grant.                           |
| II .....   | New Jersey .....           | Partially grant, partially deny. |
| III .....  | Delaware .....             | Grant.                           |
|            | District of Columbia ..... | Partially grant, partially deny. |
|            | Virginia .....             | Grant.                           |
|            | West Virginia .....        | Grant.                           |
| IV .....   | Alabama .....              | Grant.                           |
|            | Florida .....              | Grant.                           |
|            | Georgia .....              | Grant.                           |
|            | Kentucky .....             | Partially grant, partially deny. |
|            | Mississippi .....          | Grant.                           |
|            | North Carolina .....       | Grant.                           |
|            | South Carolina .....       | Partially grant, partially deny. |
|            | Tennessee .....            | Grant.                           |
| V .....    | Illinois .....             | Grant.                           |
|            | Indiana .....              | Grant.                           |
|            | Michigan .....             | Grant.                           |
|            | Minnesota .....            | Grant.                           |
|            | Ohio .....                 | Partially grant, partially deny. |
| VI .....   | Arkansas .....             | Grant.                           |
|            | Louisiana .....            | Grant.                           |
|            | New Mexico .....           | Grant.                           |
|            | Oklahoma .....             | Grant.                           |
| VII .....  | Iowa .....                 | Partially grant, partially deny. |
|            | Kansas .....               | Grant.                           |
|            | Missouri .....             | Partially grant, partially deny. |
|            | Nebraska .....             | Deny.                            |
| VIII ..... | Colorado .....             | Grant.                           |
|            | Montana .....              | Grant.                           |
|            | North Dakota .....         | Partially grant, partially deny. |
|            | South Dakota .....         | Grant.                           |
|            | Wyoming .....              | Deny.                            |
| IX .....   | Arizona .....              | Partially grant, partially deny. |
| X .....    | Alaska .....               | Grant.                           |
|            | Idaho .....                | Deny.                            |
|            | Oregon .....               | Deny.                            |
|            | Washington .....           | Grant.                           |

For each state for which the final action on the Petition is either "Grant" or "Partially grant, partially deny," the EPA finds that certain specific provisions in each state's SIP are substantially inadequate to meet CAA requirements for the reason that these

provisions are inconsistent with the CAA with regard to how the state treats excess emissions from sources during periods of SSM. With respect to the affirmative defense provisions identified in the Petition, the EPA finds that they improperly impinge upon the statutory

jurisdiction of the courts to determine liability and impose remedies for violations of SIP emission limitations. The EPA believes that certain specific provisions in these SIPs fail to meet fundamental statutory requirements intended to attain and maintain the

<sup>11</sup> The state has the primary responsibility to implement SIP obligations, pursuant to CAA section 107(a). However, as CAA section 110(a)(2)(E) allows, a state may authorize and rely

on a local or regional government, agency or instrumentality to carry out the SIP or a portion of the SIP within its jurisdiction. As a result, some of the SIP provisions at issue in this rulemaking apply

to specific portions of a state. Thus, in certain states, submission of a corrective SIP revision may involve rulemaking in more than one jurisdiction.

NAAQS, protect prevention of significant deterioration (PSD) increments and improve visibility. Equally importantly, the EPA believes that the same provisions may undermine the ability of states, the EPA and the public to enforce emission limitations in the SIP that have been relied upon to ensure attainment or maintenance of the NAAQS or to meet other CAA requirements.

For each state for which the final action on the Petition is either “Grant” or “Partially grant, partially deny,” the EPA is also in this final action calling for a SIP revision as necessary to correct the identified deficient provisions. The SIP revisions that the states are directed to make will rectify a number of different types of defects in existing SIPs, including automatic exemptions from emission limitations, impermissible director’s discretion provisions, enforcement discretion provisions that have the effect of barring enforcement by the EPA or through a citizen suit and affirmative defense provisions that are inconsistent with CAA requirements. A corrective SIP revision addressing automatic or impermissible discretionary exemptions will ensure that excess emissions during periods of SSM are treated in accordance with CAA requirements. Similarly, a corrective SIP revision addressing ambiguity in who may enforce against violations of these emission limitations will also ensure that CAA requirements to provide for enforcement are met. A SIP revision to remove affirmative defense provisions will assure that the SIP provision does not purport to alter or eliminate the

jurisdiction of federal courts to assess liability or to impose remedies consistent with the statutory authority provided in CAA section 113 and section 304. The particular provisions for which the EPA is requiring SIP revisions are summarized in section IX of this document. Many of these provisions were added to the respective SIPs many years ago and have not been the subject of action by the state or the EPA since.

For each of the states for which the EPA is denying or is partially denying the Petition, the EPA finds that the particular provisions identified by the Petitioner are not substantially inadequate to meet the requirements pursuant to CAA section 110(k)(5), because the provisions: (i) Are, as they were described in the Petition and as they appear in the existing SIP, consistent with the requirements of the CAA; or (ii) are, as they appear in the existing SIP after having been revised subsequent to the date of the Petition, consistent with the requirements of the CAA; or (iii) have, subsequent to the date of the Petition, been removed from the SIP. Thus, in this final action, the EPA is taking no action to issue a SIP call with respect to those states for those particular SIP provisions.

In addition to evaluating specific SIP provisions identified in the Petition, the EPA has independently evaluated additional affirmative defense provisions in the SIPs of six states (applicable in nine statewide and local jurisdictions).<sup>12</sup> As explained in the SNPR, the EPA determined that this approach was necessary in order to take into consideration recent judicial

decisions concerning affirmative defense provisions and CAA requirements. As the result of this evaluation, the EPA finds that specific affirmative defense provisions in 17 states (applicable in 23 statewide and local jurisdictions) are substantially inadequate to meet CAA requirements for the reason that these provisions impinge upon the statutory jurisdiction of the federal courts to determine liability and impose remedies for violations of SIP emission limitations.<sup>13</sup> By improperly impinging upon the jurisdiction of the federal courts, the EPA believes, these provisions fail to meet fundamental statutory requirements intended to attain and maintain the NAAQS, protect PSD increments and improve visibility. As with the affirmative defense provisions identified in the Petition, the EPA believes that these provisions may undermine the ability of states, the EPA and the public to enforce emission limitations in the SIP that have been relied upon to ensure attainment or maintenance of the NAAQS or to meet other CAA requirements.

In this final action, the EPA is issuing a SIP call to each of 36 states (for provisions applicable in 45 statewide and local jurisdictions) with respect to these provisions. The 36 states are listed in table 2, “List of All States With SIP Provisions Subject to SIP Call.” The EPA emphasizes that this SIP call action pertains to the specific SIP provisions identified and discussed in section IX of this document. The actions required of individual states in response to this SIP call action are discussed in more detail in section IX of this action.

TABLE 2—LIST OF ALL STATES WITH SIP PROVISIONS SUBJECT TO SIP CALL

| EPA region | State                      | Area   |
|------------|----------------------------|--------|
| I .....    | Maine .....                | State. |
|            | Rhode Island .....         | State. |
| II .....   | New Jersey .....           | State. |
| III .....  | Delaware .....             | State. |
|            | District of Columbia ..... | State. |
|            | Virginia .....             | State. |
|            | West Virginia .....        | State. |
| IV .....   | Alabama .....              | State. |
|            | Florida .....              | State. |
|            | Georgia .....              | State. |
|            | Kentucky .....             | State. |

<sup>12</sup> The six states in which the EPA independently evaluated affirmative defense provisions are: California; South Carolina, New Mexico, Texas, Washington and West Virginia. The EPA evaluated the New Mexico SIP with respect to provisions applicable to the state and Albuquerque-Bernalillo County. The EPA evaluated the Washington SIP with respect to provisions applicable to the state, the Energy Facility Site Evaluation Council and the Southwest Clean Air Agency.

<sup>13</sup> The 17 states for which the EPA finds that specific affirmative defense provisions are substantially inadequate to meet CAA requirements are counted as follows: The EPA evaluated affirmative defense provisions identified by the Petitioner for 14 states: Alaska; Arizona; Arkansas; Colorado; District of Columbia; Georgia; Illinois; Indiana; Kentucky; Michigan; Mississippi; New Mexico; Virginia; and Washington. The EPA evaluated affirmative defense provisions that it independently identified among two states identified by the Petitioner: South Carolina; and

West Virginia. Further, the EPA independently identified and evaluated affirmative defense provisions in two states that were not included in the Petition: California; and Texas. In the final action, the EPA is finding one or more affirmative defense provisions to be substantially inadequate in all but one of the 18 states for which the EPA evaluated affirmative defense provisions; for one state, Kentucky, the affirmative defense provision, which was applicable in Jefferson County, was corrected prior to the EPA’s issuing its SNPR.

TABLE 2—LIST OF ALL STATES WITH SIP PROVISIONS SUBJECT TO SIP CALL—Continued

| EPA region | State                | Area   |
|------------|----------------------|--|
| V          | Mississippi .....    | State.   |
|            | North Carolina ..... | State and Forsyth County.  |
|            | South Carolina ..... | State.   |
|            | Tennessee .....      | State, Knox County and Shelby County.  |
|            | Illinois .....       | State.   |
|            | Indiana .....        | State.   |
|            | Michigan .....       | State.   |
| VI         | Minnesota .....      | State.   |
|            | Ohio .....           | State.   |
|            | Arkansas .....       | State.   |
|            | Louisiana .....      | State.   |
|            | New Mexico .....     | State and Albuquerque-Bernalillo County.                                       |
| VII        | Oklahoma .....       | State.   |
|            | Texas .....          | State.   |
|            | Iowa .....           | State.   |
| VIII       | Kansas .....         | State.   |
|            | Missouri .....       | State.   |
|            | Colorado .....       | State.   |
|            | Montana .....        | State.   |
| IX         | North Dakota .....   | State.   |
|            | South Dakota .....   | State.   |
|            | Arizona .....        | State and Maricopa County.   |
|            | California .....     | Eastern Kern APCD, Imperial County APCD and San Joaquin Valley Unified APCD.   |
| X          | Alaska .....         | State.   |
|            | Washington .....     | State, Energy Facility Site Evaluation Council and Southwest Clean Air Agency. |

*D. What are the next steps for states that are receiving a finding of substantial inadequacy and a SIP call?*

The EPA is finalizing a finding of substantial inadequacy and issuing a SIP call for the states listed in table 2 (see section II.C of this document). The EPA is also establishing a deadline by which these states must make a SIP submission to rectify the specifically identified deficiencies in their respective SIPs. Pursuant to CAA section 110(k)(5), the EPA has authority to set a SIP submission deadline that is up to 18 months from the date of the final finding of substantial inadequacy. After considering comment on this issue, the EPA is in this final action establishing a deadline of November 22, 2016, by which each affected state is to respond to the SIP call. The deadline falls 18 months from the date of signature and dissemination of this final finding of substantial inadequacy. Thereafter, the EPA will review the adequacy of that new SIP submission in accordance with the CAA requirements of sections 110(a), 110(k)(3), 110(l) and 193, including the EPA's interpretation of the CAA reflected in the SSM Policy as clarified and updated through this rulemaking. The EPA believes that states should be provided the maximum time allowable under CAA section 110(k)(5) in order to have sufficient time to make appropriate SIP revisions following their own SIP development process. Such a schedule will allow for

the necessary SIP development process to correct the deficiencies yet still achieve the necessary SIP improvements as expeditiously as practicable consistent with the maximum time allowed by statute.

*E. What are potential impacts on affected states and sources?*

The issuance of a SIP call requires an affected state to take action to revise its SIP. That action by the state may, in turn, affect sources as described later in this document. The states that are receiving a SIP call in this final action will in general have options as to exactly how to revise their SIPs. In response to a SIP call, a state retains broad discretion concerning how to revise its SIP, so long as that revision is consistent with the requirements of the CAA. Some provisions that are affected by this SIP call, for example an automatic exemption provision, have to be removed entirely and an affected source could no longer depend on the exemption to avoid all liability for excess emissions during SSM events. Some other provisions, for example a problematic enforcement discretion provision, could either be removed entirely from the SIP or retained if revised appropriately to apply only to state enforcement personnel, in accordance with the EPA's interpretation of the CAA as described in the EPA's SSM Policy. The EPA notes that if a state removes a SIP provision that pertains to the state's exercise of

enforcement discretion, this removal would not affect the ability of the state to apply its traditional enforcement discretion in its enforcement program. It would merely make the exercise of such discretion case-by-case in nature, as is the normal form of such discretion.

In addition, affected states may choose to consider reassessing particular emission limitations, for example to determine whether those emission limitations can be revised such that well-managed emissions during planned operations such as startup and shutdown would not exceed the revised emission limitation, while still protecting air quality and meeting other applicable CAA requirements. Such a revision of an emission limitation will need to be submitted as a SIP revision for the EPA's approval if the existing limitation to be changed is already included in the SIP or if the existing SIP relies on the particular existing emission limitation to meet a CAA requirement. In such instances, the EPA would review the SIP revision for consistency with all applicable CAA requirements. A state that chooses to revise particular emission limitations, in addition to removing or revising the aspect of the existing SIP provision that is inconsistent with CAA requirements, could include those revisions in the same SIP submission that addresses the SSM provisions identified in the SIP call, or it could submit them separately.

The implications for a regulated source in a given state, in terms of

whether and how it would potentially have to change its equipment or practices in order to operate with emissions that comply with the revised SIP, will depend on the nature and frequency of the source's SSM events and how the state has chosen to revise the SIP to address excess emissions during SSM events. The EPA did not conduct an analysis that would indicate, *e.g.*, how many owners or operators of sources in each affected state would likely change any procedures or processes for control of emissions from those sources during periods of SSM. The impacts of revised SIP provisions will be unique to each affected state and its particular mix of affected sources, and thus the EPA cannot predict what those impacts might be. Furthermore, the EPA does not believe the results of such analysis, had one been conducted, would significantly affect this rulemaking that pertains to whether SIP provisions comply with CAA requirements. The EPA recognizes that after all the responsive SIP revisions are in place and are being implemented by the states, some sources may need to take steps to control emissions better so as to comply with emission limitations continuously, as required by the CAA, or to increase durability of components and monitoring systems to detect and manage malfunctions promptly.

The EPA Regional Offices will work with states to help them understand their options and the potential consequences for sources as the states prepare their SIP revisions in response to this SIP call.

*F. What happens if an affected state fails to meet the SIP submission deadline?*

If, in the future, the EPA finds that a state that is subject to this SIP call action has failed to submit a complete SIP revision as required, or the EPA disapproves such a SIP revision, then the finding or disapproval would trigger an obligation for the EPA to impose a federal implementation plan (FIP) within 24 months after that date. That FIP obligation would be discharged without promulgation of a FIP only if the state makes and the EPA approves the called-for SIP submission. In addition, if a state fails to make the required SIP revision, or if the EPA disapproves the required SIP revision, then either event can also trigger mandatory 18-month and 24-month sanctions clocks under CAA section 179. The two sanctions that apply under CAA section 179(b) are the 2-to-1 emission offset requirement for all new and modified major sources subject to the nonattainment new source review

(NSR) program and restrictions on highway funding. More details concerning the timing and process of the SIP call, and potential consequences of the SIP call, are provided in section VIII of this document.

*G. What is the status of SIP provisions affected by this SIP call action in the interim period starting when the EPA promulgates the final SIP call and ending when the EPA approves the required SIP revision?*

When the EPA issues a final SIP call to a state, that action alone does not cause any automatic change in the legal status of the existing affected provision(s) in the SIP. During the time that the state takes to develop a SIP revision in response to the SIP call and the time that the EPA takes to evaluate and act upon the resulting SIP submission from the state pursuant to CAA section 110(k), the existing affected SIP provision(s) will remain in place. The EPA notes, however, that the state regulatory revisions that the state has adopted and submitted for SIP approval will most likely be already in effect at the state level during the pendency of the EPA's evaluation of and action upon the new SIP submission.

The EPA recognizes that in the interim period, there may continue to be instances of excess emissions that adversely affect attainment and maintenance of the NAAQS, interfere with PSD increments, interfere with visibility and cause other adverse consequences as a result of the impermissible provisions. The EPA is particularly concerned about the potential for serious adverse consequences for public health in this interim period during which states, the EPA and sources make necessary adjustments to rectify deficient SIP provisions and take steps to improve source compliance. However, given the need to resolve these longstanding SIP deficiencies in a careful and comprehensive fashion, the EPA believes that providing sufficient time consistent with statutory constraints for these corrections to occur will ultimately be the best course to meet the ultimate goal of eliminating the inappropriate SIP provisions and replacing them with provisions consistent with CAA requirements.

**III. Statutory, Regulatory and Policy Background**

The Petition raised issues related to excess emissions from sources during periods of SSM and the correct treatment of these excess emissions in SIPs. In this context, "excess emissions" are air emissions that exceed the

otherwise applicable emission limitations in a SIP, *i.e.*, emissions that would be violations of such emission limitations. The question of how to address excess emissions correctly during SSM events has posed a challenge since the inception of the SIP program in the 1970s. The primary objective of state and federal regulators is to ensure that sources of emissions are subject to appropriate emission controls as necessary in order to attain and maintain the NAAQS, protect PSD increments, improve visibility and meet other statutory requirements. Generally, this is achieved through enforceable emission limitations on sources that apply, as required by the CAA, continuously.

Several key statutory provisions of the CAA are relevant to the EPA's evaluation of the Petition. These provisions relate generally to the basic legal requirements for the content of SIPs, the authority and responsibility of air agencies to develop such SIPs and the EPA's authority and responsibility to review and approve SIP submissions in the first instance, as well as the EPA's authority to require improvements to a previously approved SIP if the EPA later determines that to be necessary for a SIP to meet CAA requirements. In addition, the Petition raised issues that pertain to enforcement of provisions in a SIP. The enforcement issues relate generally to what constitutes a violation of an emission limitation in a SIP, who may seek to enforce against a source for that violation, and whether the violator should be subject to monetary penalties as well as other forms of judicial relief for that violation.

The EPA has a longstanding interpretation of the CAA with respect to the treatment of excess emissions during periods of SSM in SIPs. This statutory interpretation has been expressed, reiterated and elaborated upon in a series of guidance documents issued in 1982, 1983, 1999 and 2001. In addition, the EPA has applied this interpretation in individual rulemaking actions in which the EPA: (i) Approved SIP submissions that were consistent with the EPA's interpretation;<sup>14</sup> (ii) disapproved SIP submissions that were not consistent with this interpretation;<sup>15</sup> (iii) itself promulgated regulations in FIPs that were consistent

<sup>14</sup> See "Approval and Promulgation of Implementation Plans; Texas; Excess Emissions During Startup, Shutdown, Maintenance, and Malfunction Activities," 75 FR 68989 (November 10, 2010).

<sup>15</sup> See "Approval and Promulgation of State Implementation Plans; Michigan," 63 FR 8573 (February 20, 1998).

with this interpretation;<sup>16</sup> or (iv) issued a SIP call requiring a state to revise an impermissible SIP provision.<sup>17</sup>

The EPA's SSM Policy is a policy statement and thus constitutes guidance. As guidance, the SSM Policy does not bind states, the EPA or other parties, but it does reflect the EPA's interpretation of the statutory requirements of the CAA. The EPA's evaluation of any SIP provision, whether prospectively in the case of a new provision in a SIP submission or retrospectively in the case of a previously approved SIP submission, must be conducted through a notice-and-comment rulemaking in which the EPA will determine whether a given SIP provision is consistent with the requirements of the CAA and applicable regulations.<sup>18</sup>

The Petition raised issues related to excess emissions from sources during periods of SSM, and the consequences of failing to address these emissions correctly in SIPs. In broad terms, the Petitioner expressed concerns that the exemptions for excess emissions and the other types of alleged deficiencies in existing SIP provisions "undermine the emission limits in SIPs and threaten states' abilities to achieve and maintain the NAAQS, thereby threatening public health and public welfare, which includes agriculture, historic properties and natural areas."<sup>19</sup> The Petitioner asserted that such exemptions for SSM events are "loopholes" that can allow dramatically higher amounts of emissions and that these emissions "can swamp the amount of pollutants emitted at other times."<sup>20</sup> In addition, the Petitioner argued that these automatic and discretionary exemptions, as well as other SIP provisions that interfere with the enforcement structure of the CAA, undermine the objectives of the CAA.

The EPA notes that the types of SIP deficiencies identified in the Petition are not legal technicalities. Compliance with the applicable requirements is intended to achieve the air quality protection and improvement purposes and objectives of the CAA. The EPA believes that the results of automatic and discretionary exemptions in SIP provisions, and of other provisions that

interfere with effective enforcement of SIPs, are real-world consequences that adversely affect public health.

Commenters on the February 2013 proposal provided illustrative examples of impacts that these types of SIP provisions have on the communities located near sources that rely on automatic or discretionary exemptions for excess emissions during SSM events, rather than by designing, operating and maintaining their sources to meet the applicable emission limitations.<sup>21</sup> These comments also illustrated the ways in which such exemptions, incorrect enforcement discretion provisions and affirmative defense provisions have interfered with the enforcement structure of the CAA by raising inappropriate impediments to enforcement by states, the EPA or citizens.

The EPA's memorandum providing a detailed discussion of the statutory, regulatory and policy background for this action can be found in the docket for this rulemaking.<sup>22</sup>

#### **IV. Final Action in Response To Request To Rescind the EPA Policy Interpreting the CAA To Allow Affirmative Defense Provisions**

##### *A. What the Petitioner Requested*

The Petitioner's first request was for the EPA to rescind its SSM Policy element interpreting the CAA to allow affirmative defense provisions in SIPs for excess emissions during SSM events.<sup>23</sup> Related to this request, the Petitioner also asked the EPA: (i) To find that SIPs containing an affirmative defense to monetary penalties for excess emissions during SSM events are substantially inadequate because they do not comply with the CAA; and (ii) to issue a SIP call pursuant to CAA section 110(k)(5) to require each such state to revise its SIP.<sup>24</sup> Alternatively, if the EPA denies these two related requests, the Petitioner asked the EPA: (i) To require states with SIPs that contain such affirmative defense

provisions to revise them so that they are consistent with the EPA's 1999 SSM Guidance for excess emissions during SSM events; and (ii) to issue a SIP call pursuant to CAA section 110(k)(5) to states with provisions inconsistent with the EPA's interpretation of the CAA.<sup>25</sup>

The Petitioner requested that the EPA rescind its SSM Policy element interpreting the CAA to allow SIPs to include affirmative defenses for violations due to excess emissions during any type of SSM events because the Petitioner contended there is no legal basis for the Agency's interpretation. Specifically, the Petitioner cited to two statutory grounds, CAA sections 113(b) and 113(e), related to the type of judicial relief available in an enforcement proceeding and to the factors relevant to the scope and availability of such relief, that the Petitioner claimed would bar the approval of any type of affirmative defense provision in SIPs. The Petitioner drew no distinction between affirmative defense provisions for malfunctions versus affirmative defense provisions for startup and shutdown or other normal modes of operation; in the Petitioner's view all are equally inconsistent with CAA requirements.

In the Petitioner's view, the CAA "unambiguously grants jurisdiction to the district courts to determine penalties that should be assessed in an enforcement action involving the violation of an emissions limit."<sup>26</sup> The Petitioner first argued that in any judicial enforcement action in a district court, CAA section 113(b) provides that "such court shall have jurisdiction to restrain such violation, to require compliance, to assess such penalty, . . . and to award any other appropriate relief." The Petitioner reasoned that the EPA's SSM Policy is therefore fundamentally inconsistent with the CAA because it purports to remove the discretion and authority of the district courts to assess monetary penalties for violations if a source is shielded from monetary penalties under an affirmative defense provision in the approved SIP.<sup>27</sup> The Petitioner concluded that the EPA's interpretation of the CAA in the SSM Policy element allowing any affirmative defenses is impermissible "because the inclusion of an affirmative defense provision in a SIP limits the courts' discretion—granted by Congress—to assess penalties for Clean Air Act violations."<sup>28</sup>

<sup>16</sup> See "Federal Implementation Plan for the Billings/Laurel, MT [Montana], Sulfur Dioxide Area," 73 FR 21418 (April 21, 2008).

<sup>17</sup> See "Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision," 76 FR 21639 (April 18, 2011).

<sup>18</sup> See generally *Catawba County, North Carolina v. EPA*, 571 F.3d 20, 33–35 (D.C. Cir. 2009) (upholding the EPA's process for developing and applying its guidance for designations).

<sup>19</sup> Petition at 2.

<sup>20</sup> Petition at 12.

<sup>21</sup> The EPA notes that a number of commenters described the impacts of SIP provisions of these types. See, e.g., comments of *Sierra Club, et al.*, EPA-HQ-OAR-2012-0322-0622, pp. 28–35 (describing impacts on several specific communities); comments of *American Bottom Conservancy*, EPA-HQ-OAR-2012-0322-0579 (describing impacts on one specific community); and comments of *Citizen for Env't Justice and Env't Integrity Project*, EPA-HQ-OAR-2012-0322-0621, pp. 8–17 (discussing impacts of such provisions on enforcement more generally).

<sup>22</sup> See Memorandum, "Statutory, Regulatory, and Policy Context for this Rulemaking," February 4, 2013, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0029.

<sup>23</sup> Petition at 11.

<sup>24</sup> *Id.*

<sup>25</sup> Petition at 12.

<sup>26</sup> Petition at 10.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

Second, in reliance on CAA section 113(e)(1), the Petitioner argued that in a judicial enforcement action in a district court, the statute explicitly specifies a list of factors that the court is to consider in assessing penalties.<sup>29</sup> The Petitioner argued that the EPA's SSM Policy authorizes states to create affirmative defense provisions with criteria for monetary penalties that are inconsistent with the factors that the statute specifies and that the statute explicitly directs courts to weigh in any judicial enforcement action. By specifying particular factors for courts to consider, the Petitioner reasoned, Congress has already definitively spoken to the question of what factors are germane in assessing monetary penalties under the CAA for violations. The Petitioner concluded that the EPA has no authority to allow a state to include an affirmative defense provision in a SIP with different criteria to be considered in awarding monetary penalties because "[p]reventing the district courts from considering these statutory factors is not a permissible interpretation of the Clean Air Act."<sup>30</sup> A more detailed explanation of the Petitioner's arguments appears in the 2013 February proposal.<sup>31</sup>

#### B. What the EPA Proposed

In the February 2013 proposal, consistent with its interpretation of the Act at that time, the EPA proposed to deny in part and to grant in part the Petition with respect to this overarching issue. As a revision to the SSM Policy as embodied in the 1999 SSM Guidance, the EPA proposed a distinction between affirmative defenses for unplanned events such as malfunctions and planned events such as startup and shutdown. The EPA explained the basis for its initial proposed action in detail, including why the Agency then believed that there was a statutory basis for narrowly drawn affirmative defense provisions that met certain criteria applicable to malfunction events but no such statutory basis for affirmative defense provisions applicable to startup and shutdown events. In the February 2013 proposal, the EPA also proposed to deny in part and to grant in part the Petition with respect to specific affirmative defense provisions in the SIPs of various states identified in the Petition consistent with that interpretation. With respect to these specific existing SIP provisions, the EPA distinguished between those provisions

that were consistent with the Agency's interpretation of the CAA as set forth in 1999 SSM Guidance and were limited to malfunction events and other affirmative defense provisions that were not limited to malfunctions or otherwise not consistent with the Agency's interpretation of the CAA and included one or more deficiencies.

Subsequent to the February 2013 proposal, however, a judicial decision by the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) in *NRDC v. EPA* concerning the legal basis for affirmative defense provisions in the EPA's own regulations caused the Agency to reconsider the legal basis for any affirmative defense provisions in SIPs, regardless of the type of events to which they apply, the criteria they may contain or the types of judicial remedies they purport to limit or eliminate.<sup>32</sup> Thus, the EPA issued an SNPR to revise its proposed response to the Petition with respect to whether affirmative defense provisions in SIPs are consistent with fundamental legal requirements of the CAA.<sup>33</sup> In the SNPR, the EPA also revised its proposed response related to each of the specific affirmative defense provisions identified in the Petition. Changes to the proposed response included revision of the basis for the proposed finding of substantial inadequacy for many of the provisions (to incorporate the EPA's revised interpretation of the CAA into that basis). Other changes to the proposed response included reversal of the proposed denial of the Petition for some provisions that the Agency previously believed to be consistent with CAA requirements but subsequently determined were not authorized by the Act under the analysis prompted by the *NRDC v. EPA* decision. In order to provide comprehensive guidance to all states concerning affirmative defense provisions in SIPs and to avoid confusion that may arise due to recent court decisions relevant to such provisions under the CAA, the EPA also addressed additional existing SIP affirmative defense provisions of which it was aware although the provisions were not specifically identified in the Petition. The EPA initially examined the specific affirmative defense provisions identified by the Petitioner in 14 states but subsequently broadened its review to include additional provisions in four states, including two states that were not included in the Petition. Most importantly, the EPA provided a detailed explanation in the SNPR as to

why it now believes that the logic of the court in the *NRDC v. EPA* decision vacating the affirmative defense in an Agency emission limitation under CAA section 112 likewise extends to affirmative defense provisions in SIPs.

#### C. What Is Being Finalized in This Action

The EPA is taking final action to grant the Petition on the request to rescind its SSM Policy element that interpreted the CAA to allow states to elect to create affirmative defense provisions in SIPs. The EPA is also taking final action to grant the Petition on the request to make a finding of substantial inadequacy and to issue SIP calls for specific existing SIP provisions that include an affirmative defense as identified in the SNPR. The specific SIP provisions at issue are discussed in section IX of this document. These existing affirmative defense provisions include some provisions that the EPA had previously determined were consistent with the CAA as interpreted in the 1999 SSM Guidance and other provisions that were not consistent even with that interpretation of the CAA. As explained in the SNPR, the EPA has now concluded that the enforcement structure of the CAA, embodied in section 113 and section 304, precludes any affirmative defense provisions that would operate to limit a court's jurisdiction or discretion to determine the appropriate remedy in an enforcement action. These provisions are not appropriate under the CAA, no matter what type of event they apply to, what criteria they contain or what forms of remedy they purport to limit or eliminate.

The EPA is revising its interpretation of the CAA with respect to affirmative defenses based upon a reevaluation of the statutory provisions that pertain to enforcement of SIP provisions in light of recent court opinions. Section 113(b) provides courts with explicit jurisdiction to determine liability and to impose remedies of various kinds, including injunctive relief, compliance orders and monetary penalties, in judicial enforcement proceedings. This grant of jurisdiction comes directly from Congress, and the EPA is not authorized to alter or eliminate this jurisdiction under the CAA or any other law. With respect to monetary penalties, CAA section 113(e) explicitly includes the factors that courts and the EPA are required to consider in the event of judicial or administrative enforcement for violations of CAA requirements, including SIP provisions. Because Congress has already given federal courts the jurisdiction to determine

<sup>29</sup> Petition at 11.

<sup>30</sup> Petition at 11.

<sup>31</sup> See February 2013 proposal, 78 FR 12459 at 12468 (February 22, 2013).

<sup>32</sup> See *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014).

<sup>33</sup> See SNPR, 79 FR 55919 (September 17, 2014).

what monetary penalties are appropriate in the event of judicial enforcement for a violation of a SIP provision, neither the EPA nor states can alter or eliminate that jurisdiction by superimposing restrictions on that jurisdiction and discretion granted by Congress to the courts. Affirmative defense provisions by their nature purport to limit or eliminate the authority of federal courts to determine liability or to impose remedies through factual considerations that differ from, or are contrary to, the explicit grants of authority in section 113(b) and section 113(e). Accordingly, pursuant to section 110(k) and section 110(l), the EPA cannot approve any such affirmative defense provision in a SIP. If such an affirmative defense provision is included in an existing SIP, the EPA has authority under section 110(k)(5) to require a state to remove that provision.

States have great discretion in how to devise SIP provisions, but they do not have discretion to create provisions that contradict fundamental legal requirements of the CAA. The jurisdiction of federal courts to determine liability and to impose statutory remedies for violations of SIP emission limitations is one such fundamental requirement. The court in the recent *NRDC v. EPA* decision did not remand the regulation to the EPA for better explanation of the legal basis for an affirmative defense; the court instead vacated the affirmative defense and indicated that there could be no valid legal basis for such a provision because it contradicted fundamental requirements of the CAA concerning the jurisdiction of courts in judicial enforcement of CAA requirements. A more detailed explanation of the EPA's basis for determining that affirmative defense provisions in SIPs are similarly contrary to the requirements of the CAA appears in the SNPR.<sup>34</sup>

Couching an affirmative defense provision in terms of merely defining whether the emission limitation applies and thus whether there is a "violation," as suggested by some commenters, is also problematic. If there is no "violation" when certain criteria or conditions for an "affirmative defense" are met, then there is in effect no emission limitation that applies when the criteria or conditions are met; the affirmative defense thus operates to create an exemption from the emission limitation. As explained in the February 2013 proposal, the CAA requires that emission limitations must apply continuously and cannot contain

exemptions, conditional or otherwise. This interpretation is consistent with the decision in *Sierra Club v. Johnson* concerning the term "emission limitation" in section 302(k).<sup>35</sup> Characterizing the exemptions as an "affirmative defense" runs afoul of the requirement that emission limitations must apply continuously.

The EPA recognizes that the original policy objectives behind states' affirmative defense provisions were likely well-intentioned, e.g., to encourage better source design, maintenance and operation through the incentive of being shielded from certain statutory remedies for violations under certain specified conditions. Nevertheless, creation of SIP provisions that would operate to limit or eliminate the jurisdiction of courts to determine liability or to impose remedies provided for by statute is inconsistent with the enforcement structure of the CAA. The EPA emphasizes that the absence of an affirmative defense provision in a SIP, whether as a freestanding generally applicable provision or as a specific component of a particular emission limitation, does not mean that all exceedances of SIP emission limitations will automatically be subject to enforcement or automatically be subject to imposition of particular remedies. Pursuant to the CAA, all parties with authority to bring an enforcement action to enforce SIP provisions (i.e., the state, the EPA or any parties who qualify under the citizen suit provision of section 304) have enforcement discretion that they may exercise as they deem appropriate in any given circumstances. For example, if the event that causes excess emissions is an actual malfunction that occurred despite reasonable care by the source operator to avoid malfunctions, then each of these parties may decide that no enforcement action is warranted. In the event that any party decides that an enforcement action is warranted, then it has enforcement discretion with respect to what remedies to seek from the court for the violation (e.g., injunctive relief, compliance order, monetary penalties or all of the above), as well as the type of injunctive relief and/or amount of monetary penalties sought.<sup>36</sup> Further, courts have the discretion under section 113 to decline to impose penalties or injunctive relief in appropriate cases as explained below.

Similarly, the absence of an affirmative defense provision in a SIP does not alter the legal rights of sources under the CAA. In the event of an enforcement action for an exceedance of a SIP emission limit, a source can elect to assert any common law or statutory defenses that it determines is supported, based upon the facts and circumstances surrounding the alleged violation. Under section 113(b), courts have explicit authority to impose injunctive relief, issue compliance orders, assess monetary penalties or fees and impose any other appropriate relief. Under section 113(e), courts are required to consider the enumerated statutory factors when assessing monetary penalties, including "such other factors as justice may require." For example, if the exceedance of the SIP emission limitation occurs due to a malfunction, that exceedance is a violation of the applicable emission limitation, but the source retains the ability to defend itself in an enforcement action and to oppose the imposition of particular remedies or to seek the reduction or elimination of monetary penalties, based on the specific facts and circumstances of the event. Thus, elimination of a SIP affirmative defense provision that purported to take away the statutory jurisdiction of the court to exercise its authority to impose remedies does not disarm sources in potential enforcement actions. Sources retain all of the equitable arguments they could previously have made under an affirmative defense provision; they must simply make such arguments to the reviewing court as envisioned by Congress in section 113(b) and section 113(e). Congress vested the courts with the authority to judge how best to weigh the evidence in an enforcement action and determine appropriate remedies.

Removal of such impermissible SIP affirmative defense provisions is necessary to preserve the enforcement structure of the CAA, to preserve the jurisdiction of courts to adjudicate questions of liability and remedies in judicial enforcement actions and to preserve the potential for enforcement by states, the EPA and other parties under the citizen suit provision as an effective deterrent to violations. In turn, this deterrent encourages sources to be properly designed, maintained and operated and, in the event of violation of SIP emission limitations, to take appropriate action to mitigate the impacts of the violation. In this way, as intended by the existing enforcement structure of the CAA, sources can mitigate the potential for enforcement actions against them and the remedies

<sup>35</sup> 551 F.3d 1019 (D.C. Cir. 2008).

<sup>36</sup> The EPA notes that only the state and the Agency have authority to seek criminal penalties for knowing and intentional violation of CAA requirements. The EPA has this explicit authority under section 113(c).

<sup>34</sup> See 79 FR 55919 at 12931–34 (September 17, 2014).



that courts may impose upon them in such enforcement actions, based upon the facts and circumstances of the event.

*D. Response to Comments Concerning Affirmative Defense Provisions in SIPs*

The EPA received numerous comments concerning the portion of the Agency's proposed response to the Petition in the February 2013 proposal that addressed the question of whether affirmative defense provisions are consistent with CAA requirements for SIPs. As explained in the SNPR, those particular comments submitted on the original February 2013 proposal are no longer germane, given that the EPA has substantially revised its initial proposed action on the Petition and its basis, both with respect to the overarching issue of whether such provisions are valid in SIPs under the CAA and with respect to specific affirmative defense provisions in existing SIPs of particular states. Accordingly, as the EPA indicated in the SNPR, it considers those particular comments on the February 2013 proposal no longer relevant and has determined that it is not necessary to respond to them. Concerning affirmative defense provisions, the appropriate focus of this rulemaking is on the comments that addressed the EPA's revised proposal in the SNPR.

With respect to the revised proposal concerning affirmative defense provisions in the SNPR, the EPA received numerous comments, some supportive and some critical of the Agency's proposed action on the Petition as revised in the SNPR. Many of these comments raised conceptual issues and arguments concerning the EPA's revised interpretation of the CAA with respect to affirmative defense provisions in SIPs in light of the *NRDC v. EPA* decision and concerning the EPA's application of that interpretation to specific affirmative defense provisions discussed in the SNPR. For clarity and ease of discussion, the EPA is responding to these overarching comments, grouped by issue, in this section of this document.

1. Comments that the EPA is misapplying the decision of the D.C. Circuit in *NRDC v. EPA* to SIP provisions because the decision only applies to the Agency's own regulations pursuant to CAA section 112.

*Comment:* Many commenters stated that the EPA's reliance on the D.C. Circuit's decision in *NRDC v. EPA* is misplaced in the SNPR because the opinion is limited to disapproval of a Maximum Achievable Control Technology (MACT) standard's affirmative defense for unavoidable malfunctions. The commenters noted

that the *NRDC v. EPA* decision did not address the issue of affirmative defense provisions in SIPs. The commenters argued that the D.C. Circuit's opinion only stands for the narrow proposition that the EPA may not include an affirmative defense to civil penalties in a NESHAP<sup>37</sup> under CAA section 112.

One commenter noted that the EPA, in the SNPR, stated that the *NRDC v. EPA* decision did not turn on any factors specific to CAA section 112 as support for the EPA applying the decision to SIPs. However, the commenter argued that this fact is not probative because neither party raised any argument specific to CAA section 112 and it is reasonable for a court to limit its analysis to the arguments presented before it.

One commenter also noted that the EPA is not bound to apply D.C. Circuit law to actions reviewable in other circuits.

*Response:* As explained in the SNPR, the EPA believes the reasoning of the court in the *NRDC v. EPA* decision indicates that states, like the EPA, have no authority in SIP provisions to alter the jurisdiction of federal courts to assess penalties for violations of CAA requirements through affirmative defense provisions.<sup>38</sup> If states lack authority under the CAA to alter the jurisdiction of the federal courts through affirmative defense provisions in SIPs, then the EPA lacks authority to approve any such provision in a SIP.

The EPA agrees with the commenters' statement that the *NRDC v. EPA* decision pertained to a challenge to the EPA's NESHAP regulations issued pursuant to CAA section 112 to regulate hazardous air pollutants (HAPs) from sources that manufacture Portland cement. However, the EPA disagrees with the commenters' contention that, because the *NRDC v. EPA* decision was based on a NESHAP, it is somehow inappropriate for the EPA to rely on the reasoning of the D.C. Circuit's decision as a basis for this action.

As acknowledged by a commenter, the EPA explained in the SNPR that the *NRDC v. EPA* decision did not turn on the specific provisions of CAA section 112.<sup>39</sup> However, the commenter missed the importance of this point. Although the *NRDC v. EPA* decision analyzed the

legal validity of an affirmative defense provision created by the EPA in conjunction with a specific NESHAP, the court based its decision upon the provisions of sections 113 and 304. Sections 113 and 304 pertain to enforcement of the CAA requirements more broadly, including to enforcement of SIP requirements. The court addressed section 112 and not sections germane specifically to SIPs, as only that section was before it. The EPA has applied the *NRDC* court's analysis to sections 113 and 304 with respect to SIPs and has concluded that the *NRDC* court's analysis is the better reading of the statutory provisions.

The affirmative defense provision in the Portland Cement NESHAP required the source to prove, by a preponderance of the evidence in an enforcement proceeding, that the source met specific criteria concerning the nature of the event. These specific criteria required to establish the affirmative defense in the Portland Cement NESHAP are functionally the same as the criteria that the EPA previously recommended to states for SIP provisions in the 1999 SSM Guidance and that the EPA repeated in the February 2013 proposal document. Accordingly, the EPA believes that the opinion of the court in *NRDC v. EPA* has significant impacts on the Agency's SSM Policy with respect to affirmative defense provisions. The reasoning by the *NRDC* court, as logically extended to SIP provisions, indicates that neither states nor the EPA have authority to alter either the rights of other parties to seek relief or the jurisdiction of federal courts to impose relief for violations of CAA requirements in SIPs. The EPA believes that the court's decision in *NRDC v. EPA* compelled the Agency to reevaluate its interpretation of the CAA as described in the SNPR.

The EPA also disagrees with commenters who suggested that a decision of the D.C. Circuit should have no bearing on actions that affect states in other circuit courts. The CAA vests authority with the D.C. Circuit to review nationally applicable regulations and any action of nationwide scope or effect. Accordingly, any decision of the D.C. Circuit in conducting such review is binding nationwide with respect to the action under review, and the D.C. Circuit's reasoning is also binding with respect to review of future EPA actions raising the same issues that will be subject to review within that Circuit. Given that the EPA has determined that this action has nationwide scope and effect, it is subject to exclusive review in the D.C. Circuit, so the EPA believes it is appropriate to apply the reasoning

<sup>37</sup> The NESHAPs are found in 40 CFR part 61 and 40 CFR part 63. The NESHAPs promulgated after the 1990 CAA Amendments are found in 40 CFR part 63. These standards require application of technology-based emissions standards referred to as Maximum Achievable Control Technology (MACT). Consequently, these post-1990 NESHAPs are also referred to as MACT standards.

<sup>38</sup> See 79 FR 55929–30; 55931–34.

<sup>39</sup> SNPR, 79 FR 55919 at 55932.

of the *NRDC* court, which interprets CAA sections 113 and 304, to determine the legality of affirmative defense provisions in this national action.<sup>40</sup>

2. Comments that the EPA is misapplying the decision of the D.C. Circuit in *NRDC v. EPA* to SIP provisions because the court did not address the legality of affirmative defense provisions in SIPs.

*Comment:* Many commenters alleged that the EPA inappropriately relied on the D.C. Circuit's decision in *NRDC v. EPA* in the SNPR because the court specifically stated that its decision did not address whether affirmative defense provisions in SIPs were appropriate. The commenters pointed to the second footnote in the decision, in which the court explicitly stated: "We do not here confront the question whether an affirmative defense may be appropriate in a State Implementation Plan."<sup>41</sup> Accordingly, the commenters argued that the *NRDC v. EPA* decision is "non-binding" with respect to SIP provisions.

*Response:* The EPA disagrees that the footnote relied upon by commenters renders application of the legal interpretation of the *NRDC* court to SIP provisions improper. The EPA specifically acknowledged and discussed the footnote in the *NRDC v. EPA* decision in the SNPR. The EPA explained its view of the significance of the footnote: "footnote 2 in the opinion does not signify that the court intended to take any position with respect to the application of its interpretation of the CAA to SIP provisions, let alone to suggest that its interpretation would not apply more broadly." As discussed in the SNPR in detail, the EPA believes the logic of the court's decision in *NRDC v. EPA* regarding the interpretation of sections 113 and 304 concerning affirmative defenses does extend to SIP provisions.

3. Comment that the EPA is inappropriately relying on the *NRDC v. EPA* decision because the DC Circuit's decision was decided in error.

*Comment:* One commenter alleged that the EPA's reliance on the *NRDC v. EPA* decision is misplaced because the court in that decision mistakenly relied on section 304(a) when holding that the EPA cannot restrict the jurisdiction of the courts with affirmative defense provisions. The commenter alleged that Congress did not intend to give the judiciary "fully-unfettered discretion" in section 304(a) because such a reading cannot be squared with section 304(b), which provides that "[n]o action can be commenced . . . if the Administrator or

State has commenced and is diligently prosecuting a civil action in a court of the United States."

*Response:* The EPA does not agree with the commenter's premise that the *NRDC* court erred by not considering section 304(b) as well as section 304(a). As the court correctly reasoned, section 304(a) authorizes any person to bring an enforcement action for violations of emission limitations. Section 304(f) defines the term "emission limitation" for this purpose very broadly. Section 304(b) does not alter the rights of any person who has given proper notice to bring such an action under section 304(a), unless the EPA or the state is diligently prosecuting a civil action to require compliance. The fact that section 304(b) limits the ability of any person to bring an enforcement action (as opposed to intervening in such action) if the EPA or the state is pursuing enforcement has no bearing upon whether the EPA or a state could seek to alter or eliminate the jurisdiction of the courts to determine liability or to impose remedies for violations of SIP emission limitations in judicial enforcement. The EPA also does not believe that this rulemaking is the appropriate forum in which to challenge the court's decision.

4. Comments that the court's reasoning in the *NRDC v. EPA* decision does not apply to affirmative defenses in SIP provisions because if a source qualifies for an affirmative defense, then there has been no violation.

*Comment:* Several commenters stated that the D.C. Circuit's analysis in the *NRDC v. EPA* opinion is based on statutory language that indicates Congress intended the courts, not the EPA, to decide what constitutes an appropriate penalty once a violation has occurred. The commenters argued that if a SIP provision contains an affirmative defense, and if a source meets the requirements to qualify for that affirmative defense, then there is no violation of the SIP requirements. One commenter contended that if there is no violation, then the courts have no jurisdiction to award any remedies and thus there can be no concern that the affirmative defense provision alters or eliminates the jurisdiction of the courts. Another commenter argued that affirmative defense provisions in the context of a SIP can be described as limitations on the application of an emission limitation to the conditions under which the emission reduction technology can be effectively operated. The commenters stated that the *NRDC* court did not address the EPA's or states' authority to establish requirements that determine, in the first

instance, whether a violation has occurred.

*Response:* The EPA disagrees with the commenters' arguments that affirmative defense provisions are appropriate in SIPs if they merely define what constitutes a violation. As explained in detail in the SNPR, the EPA believes that SIP provisions with affirmative defenses that operate to limit or eliminate the jurisdiction of the courts to determine liability and to impose remedies are not consistent with CAA requirements. Under the commenters' theory, such provisions would not improperly impinge on the jurisdiction of the courts to impose remedies for violations by redefining what constitutes a "violation."

First, the EPA does not agree that all affirmative defense provisions in the SIPs at issue in this action are constructed in this way. Some, including those that the EPA previously approved as consistent with the Agency's 1999 SSM Guidance, explicitly provide that the excess emissions that occur are still violations, but a source could be excused from monetary penalties if the source met the criteria for the affirmative defense. Under the EPA's prior interpretation of the CAA, the legal basis for any affirmative defense started with the fact that the excess emissions still constituted a violation and injunctive relief would still be available as appropriate. As explained in the SNPR and this document, the EPA no longer interprets the CAA to allow even narrowly drawn affirmative defense provisions in SIPs, let alone those advocated by the commenters that would provide a complete bar to any type of judicial remedy provided for in section 113(b).

Second, even if a specific affirmative defense provision were worded in the way that the commenters' claim, then that provision would be deficient for other reasons. Under the commenters' premise, if certain criteria are met then there is no "violation" for excess emissions during SSM events. The EPA's view is that this formulation of an affirmative defense in effect means that there is no emission limitation that applies when the criteria are met, *i.e.*, the affirmative defense operates to create a conditional exemption for emissions from the source during SSM events. Such an approach would be inconsistent with the decision in *Sierra Club v. Johnson* concerning the term "emission limitation" in section 302(k).<sup>42</sup> Exemptions for emissions during SSM events, whether automatic

<sup>40</sup> CAA section 307(b)(1).

<sup>41</sup> 749 F.3d 1055, 1064, n.2.

<sup>42</sup> 551 F.3d 1019 (D.C. Cir. 2008).

or conditional based upon the criteria of an affirmative defense, are inconsistent with the requirement for continuous controls on sources.

Finally, the EPA believes that the commenters' premise that an affirmative defense provision merely defines what a violation is also runs afoul of other fundamental requirements for SIP provisions. To the extent any such provision would allow state personnel to decide, unilaterally, whether excess emissions during an SSM event constitute a violation (e.g., through application of an "affirmative defense"), this would interfere with the ability of the EPA or other parties to enforce for violations of SIP requirements. The EPA interprets the CAA to prohibit SIP provisions that impose the enforcement discretion decisions of a state on other parties. This includes provisions that are structured or styled as an affirmative defense but in effect allow *ad hoc* conditional exemptions from emission limitations and preclude enforcement for excess emission during SSM events.

5. Comments that the *NRDC v. EPA* decision, which concerned an emission limitation under section 112, does not apply in the context of section 110, because section 110 affords states flexibility in how to develop emission limitations in SIP provisions.

*Comment:* Commenters argued that the EPA's extension of the logic of the *NRDC v. EPA* decision to affirmative defenses in SIP provisions is incorrect because the EPA's NESHAP standards are governed by section 112, whereas SIP provisions are governed by section 110. Under the latter, commenters asserted, states are afforded wide discretion in how to develop emission limitations.<sup>43</sup> The commenters stated that section 110 governs the development of state SIPs to satisfy the NAAQS, which may address many different types of sources, major and minor, industrial and non-industrial, small and large, and old and new. The commenters alleged that states have independent authority to include affirmative defenses in SIP provisions, so long as the provisions are otherwise approvable, because the state has met its section 110 planning responsibilities and the SIP is enforceable.

*Response:* The EPA agrees with the commenters that section 110 governs the development of state SIPs and that states are accorded great discretion in determining how to meet CAA requirements in SIPs. However, as explained in the February 2013 proposal, the SNPR and sections IV.D.13 and V.D.2 of this document, states are

obligated to develop SIP provisions that meet fundamental CAA requirements. The EPA has the responsibility to review SIP provisions developed by states to ensure that they in fact meet fundamental CAA requirements. As explained in the SNPR and this document, the EPA no longer believes that affirmative defense provisions meet CAA requirements. Based on the logic of the court in the *NRDC v. EPA* decision, the better reading of the statute is that such provisions have the effect of limiting or eliminating the statutory jurisdiction of the courts to determine liability or impose remedies.

The EPA also disagrees with the commenters' arguments that "emission limitations" under section 112 and section 110 are not comparable with respect to meeting fundamental CAA requirements. As an initial matter, both section 112 MACT standards and section 110 SIP emission limitations can be composed of various elements that include, among other things, numerical emission limitations, work practice standards and monitoring and recordkeeping requirements. However, whether there are other components that are part of the emission limitation to make it apply continuously is not relevant for purposes of determining whether an affirmative defense provision that provides relief from penalties for a violation of either a MACT standard under section 112 or a SIP provision under section 110 is consistent with the CAA.

As explained in the SNPR, the EPA has revised its interpretation of the CAA with respect to affirmative defense provisions in SIPs, based upon the logic of the court in the *NRDC v. EPA* decision. Section 304(a) sets forth the basis for a civil enforcement action and section 113(a)(1) does the same for administrative or judicial enforcement actions brought by the EPA. Sections 113(b) and 304(a) provide the federal district courts with jurisdiction to hear civil enforcement cases. Furthermore, section 113(e) confers jurisdiction on the district court in a civil enforcement case to determine the amount of penalty to be assessed where a violation has been established.

6. Comments that the *NRDC v. EPA* decision does not pertain to the appropriateness of affirmative defense provisions in the context of state administrative or civil enforcement.

*Comment:* Some commenters noted that the *NRDC* court only reviewed whether affirmative defense provisions could be used to limit CAA citizen suit remedies in judicial enforcement actions. The commenters alleged that the use of an affirmative defense in a

citizen suit under federal regulations does not dictate the appropriateness of similar provisions in the context of state administrative or civil actions.

According to the commenters, a SIP represents an air quality management system and the state administrative process is distinct from federal citizen suits. Similarly, the commenters believed that SIP emission limitations are enforceable via state regulation penalty provisions that are separate from the CAA civil penalty provisions. Because the *NRDC* court spoke only to the appropriateness of affirmative defense provisions in the context of federal citizen suits, the commenters asserted, the decision is inapplicable in the EPA's SIP call action.

*Response:* The EPA agrees that the court in the *NRDC v. EPA* decision did not speak directly to the issue of whether states can establish affirmative defenses to be used by sources exclusively in state administrative enforcement actions or in judicial enforcement in state courts. The reasoning of the *NRDC* court indicates only that such provisions would be inconsistent with the CAA in the context of judicial enforcement of SIP requirements in federal court. Indeed, the *NRDC* court suggested that if the EPA elected to consider factors comparable to the affirmative defense criteria in its own administrative enforcement proceedings, it may be able to do so. The implication of the commenters, however, is that the EPA should interpret the CAA to allow affirmative defenses in SIP provisions, so long as it is unequivocally clear that sources cannot assert the affirmative defenses in federal court enforcement actions and cannot assert the affirmative defenses in enforcement actions brought by any party other than the state.

The EPA of course agrees that states can exercise their own enforcement discretion and elect not to bring an enforcement action or seek certain remedies, using criteria analogous to an affirmative defense. It does not follow, however, that states can impose this enforcement discretion on other parties by adopting SIP provisions that would apply in federal judicial enforcement, or in enforcement brought by the EPA or other parties. To the extent that the state developed an "enforcement discretion" type provision that applied only in its own administrative enforcement actions or only with respect to enforcement actions brought by the state in state courts, such a provision may be appropriate. This authority is not unlimited because the state could not create affirmative defense provision that in effect undermines its legal authority

<sup>43</sup> See, e.g., *Train v. NRDC*, 421 U.S. 60, 79 (1975).

to enforce SIP requirements. Section 110(a)(2)(C) requires states to have a program that provides for enforcement of the state's SIP, and enforcement discretion provisions that unreasonably limit the state's own authority to enforce the requirements of the SIP would be inconsistent with section 110(a)(2)(C). The EPA's obligations with respect to SIPs include determining whether states have adequate enforcement authority.

7. Comments that the EPA's proposal is inappropriate because it runs counter to previous court decisions, including the decision of the U.S. Court of Appeals for the Fifth Circuit (Fifth Circuit) in *Luminant Generation v. EPA*.

*Comment:* Many commenters on the SNPR argued that the decision of the Fifth Circuit in *Luminant Generation v. EPA* precludes the EPA's proposed action concerning affirmative defenses in SIP provisions, in general and with respect to the provisions in the Texas SIP in particular. The commenters noted that the court upheld the EPA's approval of an affirmative defense provision for unavoidable excess emissions during unplanned SSM events in the Texas SIP.<sup>44</sup> The commenters argued that the Fifth Circuit ruled that in approving the Texas SIP affirmative defense provision, the EPA "acted neither contrary to law nor in excess of its statutory authority."<sup>45</sup> According to the commenters, the court specifically considered and rejected arguments by litigants concerning sections 113 and 304. Some commenters argued that the court also considered and "decisively rejected" the legal arguments articulated by the EPA in the SNPR. The commenters alleged that the *Luminant Generation v. EPA* decision demonstrates that affirmative defenses for malfunctions are permissible in SIP provisions. The commenters contended that, because the Fifth Circuit in *Luminant Generation v. EPA* specifically considered whether an affirmative defense provision applicable to malfunctions included in a SIP violates the CAA, unlike the D.C. Circuit in *NRDC v. EPA*, the EPA should follow the *Luminant Generation v. EPA* decision rather than the D.C. Circuit decision in *NRDC v. EPA*.

Some commenters also pointed out that the D.C. Circuit, in the recent *NRDC v. EPA* decision, mentioned and cited the *Luminant Generation v. EPA* opinion and did not expressly disagree

with the Fifth Circuit's holding. One commenter noted that if the *NRDC* court believed that the issue it was deciding was the same as the issue decided in *Luminant Generation v. EPA*, the D.C. Circuit would have explicitly stated that it was declining to follow the Fifth Circuit on the issue instead of acknowledging that the issue upon which the Fifth Circuit ruled was not before the D.C. Circuit.

Several commenters also argued that, because the Fifth Circuit previously determined in *Luminant Generation v. EPA* that the Texas SIP affirmative defense provision at issue in this SIP call action is consistent with CAA sections 113 and 304, the EPA does not have any legal authority under the CAA to finalize the action proposed in SNPR. Some commenters further stated that the EPA lacks authority to disagree with the Fifth Circuit's determination of the law as applied to a state within the Fifth Circuit's jurisdiction. These commenters believed that if the EPA were to finalize the action discussed in the SNPR with respect to the affirmative defense for malfunctions in the Texas SIP, this action would violate the mandate rule. Some commenters also alleged that courts outside the Fifth Circuit, including the D.C. Circuit, will apply principles of claim preclusion, or *res judicata*, to give effect to the Fifth Circuit's prior adjudication on the legal basis for the affirmative defense in the Texas SIP. One commenter claimed that the EPA's "failure" to address how the holdings in *Luminant Generation v. EPA* will no longer apply and how the EPA is exempt from the court's mandate render the theories presented in the SNPR unsupported as a basis for the SIP call action.

Some commenters alleged that the EPA is bound by its own prior representations before the Fifth Circuit, in which it asserted and defended its approval of the affirmative defense provision for malfunctions in the Texas SIP, under the doctrine of judicial estoppel.<sup>46</sup> Similarly, the commenters alleged that under the doctrine of issue preclusion, or collateral estoppel, the EPA is precluded from re-litigating the issues previously considered and determined by the Fifth Circuit, regardless of where any subsequent challenge to this final action is brought.

Some commenters also cited to other circuit court decisions that have upheld the EPA's approvals of affirmative

defense provisions for malfunctions.<sup>47</sup> The commenters alleged that other than calling the *NRDC v. EPA* decision a newer decision, the EPA did not explain its justification for relying on the *NRDC v. EPA* opinion instead of following the three circuit court decisions that are directly on point.

*Response:* The EPA disagrees with the commenters' arguments concerning the application of the court's decision in *Luminant Generation v. EPA* to this SIP call action. As explained in the SNPR, the EPA acknowledges that it has previously approved affirmative defenses in SIP provisions or, when appropriate, promulgated affirmative defenses in FIPs. The EPA also acknowledged that its approval of an affirmative defense provision applicable to "unplanned events" (i.e., malfunctions) in a Texas SIP submission was upheld in 2012 by the U.S. Court of Appeals for the Fifth Circuit. In that litigation, the EPA argued that sections 113 and 304 do not preclude appropriately drawn affirmative defense provisions for malfunctions in SIPs. Importantly, in upholding the EPA's approval of the affirmative defense, the Fifth Circuit determined that *Chevron* step 1 was not applicable to this case and "turn[ed] to step two of *Chevron*"<sup>48</sup> in holding that the Agency's interpretation of the CAA at that time was a "permissible interpretation of section [113], warranting deference."<sup>49</sup> The Fifth Circuit did not determine that the EPA's interpretation at the time of the *Luminant Generation v. EPA* decision was the only or even the best permissible interpretation. It is clearly within the EPA's legal authority to now revise its interpretation to a different, but still permissible, interpretation of the statute.<sup>50</sup> The EPA has explained at length in the SNPR, and elsewhere in this final rulemaking, its reasons for changing its previous interpretation of

<sup>47</sup> See *Montana Sulphur & Chemical Co. v. EPA*, 666 F.3d 1174 (9th Cir. 2012); *Arizona Public Service Co. v. EPA*, 562 F.3d 1116 (10th Cir. 2009).

<sup>48</sup> 714 F.3d at 852.

<sup>49</sup> *Id.* at 853.

<sup>50</sup> See, e.g., *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005) and *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009). The Agency also notes that commenters' position, that the EPA cannot now change its interpretation of the CAA, is at odds with the SIP call provision established by Congress in section 110(k)(5). That provision provides the EPA with authority to issue a SIP call "whenever" it determines that an existing SIP is substantially inadequate to meet CAA requirements. In other words, section 110(k)(5) expressly envisions cases where the EPA has previously approved a SIP provision as meeting CAA requirements, and one that the EPA may have even defended in court, but later determines that the provision no longer meets CAA requirements, and section 110(k)(5) gives the EPA authority to issue a SIP call in these situations.

<sup>44</sup> 714 F.3d 841 (5th Cir. 2013).

<sup>45</sup> *Id.* at 853. The EPA notes that the Fifth Circuit also upheld the Agency's disapproval of the affirmative defense provisions that the state sought to create for "planned" events.

<sup>46</sup> See, e.g., *New Hampshire v. Maine*, 532 U.S. 742, 749 (2001).

the CAA to permit narrowly drawn affirmative defenses applicable only to penalties and has explained why it now believes that the reasoning of the court in the *NRDC v. EPA* decision is the better reading of the CAA.

Some commenters allege that the Fifth Circuit considered and rejected the legal arguments articulated by the EPA in the SNPR to support the Agency's new interpretation that affirmative defenses in SIP provisions are inconsistent with the Act. The EPA disagrees with commenters' assertions. As explained above, in the *Luminant Generation v. EPA* decision the Fifth Circuit analyzed the EPA's former interpretation of the CAA under step 2 of *Chevron* and found that the Agency's position was reasonable. The Fifth Circuit held that the CAA did not dictate the outcome put forth by environmental petitioners in the *Luminant Generation v. EPA* case; the court did not hold that the Agency could not reasonably interpret the CAA provisions at issue to come to the new position articulated in the SNPR and other sections of this document. In fact, the Fifth Circuit upheld the EPA's reading of the statute to preclude affirmative defense provisions for planned events in the same decision as a reasonable interpretation of the CAA.

In the SNPR, the EPA also addressed the discussion in the *NRDC v. EPA* decision that referred to the earlier *Luminant Generation v. EPA* decision and explained its view that the court in *NRDC v. EPA* did not suggest that its interpretation of the CAA would not apply more broadly to SIP provisions. Rather, the court simply declined to address that issue. As to commenters' allegation that the EPA should follow the *Luminant* court's reasoning because that court addressed the specific issue of affirmative defenses in SIP provisions, the EPA has explained in detail in the SNPR and section IV.D.1 of this document why it now believes that the *NRDC* court's reasoning is applicable here and why it believes this is the better interpretation of sections 113 and 304.

The EPA acknowledges that other circuit courts have also upheld affirmative defense provisions promulgated by the Agency in FIPs.<sup>51</sup> Those decisions were also based upon an interpretation of the CAA that the Agency no longer holds. The EPA further notes that the affirmative defense provisions at issue in the other court decisions cited by the commenters are not at issue in this action. However,

the EPA may elect to address these provisions in a separate rulemaking.

The EPA also disagrees with commenters' allegations that this final SIP call action violates the mandate rule. The mandate rule generally governs how a lower court handles a higher court's decision on remand. The Agency believes that the mandate rule is inapplicable here. Similarly, the Agency believes that the principles of *res judicata*, judicial estoppel and collateral estoppel (issue preclusion) raised by commenters are all inapplicable in this situation. For reasons the EPA has fully explained in this rulemaking, the Agency is adopting a revised interpretation of the CAA. This necessarily changes the issues or claims that may be raised in any future litigation concerning the Agency's action here or subsequent Agency actions taken pursuant to this changed interpretation. As noted previously, the Agency's ability to change its interpretation of the statute is well established, even if courts have previously upheld the Agency's former interpretation as reasonable under step 2 of the *Chevron* analysis.

8. Comments that affirmative defense provisions are needed or appropriate because sources cannot control malfunctions or the excess emissions that occur during them.

*Comment:* Several commenters claimed that by requiring states to remove affirmative defense provisions, the EPA will create a situation where sources have no potential relief from liability for exceedances resulting from excess emissions during malfunctions. The commenters argued that this will effectively expose sources to penalties for emissions that are not within the sources' control. The commenters alleged that the EPA's proposal is unreasonable because it fails to consider the infeasibility of controlling emissions during malfunction periods. The commenters believe that because malfunction events are uncontrollable by definition, removing affirmative defense provisions applicable to malfunctions will not reduce emissions but instead will only expose facilities to potential enforcement for uncontrollable exceedances.

*Response:* The EPA disagrees that without affirmative defense provisions, sources will have no "relief" from liability for violations during actual malfunctions. To the extent that sources have an actual malfunction, sources retain the ability to raise this fact in the event of an enforcement action related to the malfunction. Congress has already provided courts with explicit jurisdiction and authority to determine

liability and to impose appropriate remedies, based on the facts and circumstances surrounding the violation. To the extent that there are extenuating circumstances that justify not holding a source responsible for a violation or not imposing particular remedies as a result of a violation, sources retain the ability to raise these facts to the court. In addition, the absence of an affirmative defense provision in the SIP does not impede a violating source from taking appropriate actions to minimize emissions during a malfunction, so as to mitigate the potential remedies that a court may impose as a result of the violation.

Furthermore, the EPA disagrees with the commenters' premise that states have authority to create affirmative defense provisions in SIPs because some sources may otherwise be subject to enforcement actions for emissions during malfunctions. As explained in the SNPR in detail, the EPA has concluded that there is no legal basis for affirmative defenses in SIP provisions, including affirmative defenses applicable to malfunction events. Because such affirmative defense provisions purport to alter or eliminate the statutory jurisdiction of courts to determine liability and to assess appropriate remedies for violations of SIP requirements, these provisions are not permissible.

9. Comments that there will not be any reduction in overall emissions from the EPA's SIP call action because states will need to revise emission limitations to allow more emissions if affirmative defense provisions are removed from the SIPs.

*Comment:* Commenters on the SNPR questioned whether the elimination of affirmative defenses in SIP provisions would result in any reductions of emissions from sources. Several commenters asserted that affirmative defense provisions allow states to lower emission limitations overall. Thus, the commenters claimed that elimination of the affirmative defense provisions would obligate states to raise affected emission limitations so that sources could comply with them continuously. Another commenter criticized the EPA's approach as requiring each state to reframe the existing episodic emissions provisions of its SIP as alternative emission limitations rather than as more limited and conditional affirmative defenses. This commenter asserted that structuring the provisions as an affirmative defense allows a state to impose more stringent numerical limitations without penalizing sources for unavoidable emissions when those

<sup>51</sup> See *Montana Sulphur & Chemical Co. v. EPA*, 666 F.3d 1174 (9th Cir. 2012); *Arizona Public Service Co. v. EPA*, 562 F.3d 1116 (10th Cir. 2009).

emissions do not compromise the underlying air quality objectives.

Several commenters also disagreed with the EPA's belief that removal of affirmative defense provisions would reduce emissions. One commenter noted that some affirmative defense provisions require a source to evaluate impacts on NAAQS compliance as part of asserting the affirmative defense; the commenter contended that forgoing these provisions would thus reduce the incentive for owners and operators to minimize emissions during malfunctions so that they could qualify for the affirmative defense. Several commenters noted that many sources immediately investigate excess emissions events and implement measures intended to prevent recurrence. Nevertheless, those commenters asserted that because malfunction events are uncontrollable by definition, removing an affirmative defense applicable to malfunctions will not reduce emissions. Commenters also argued that an assumption that elimination of the affirmative defense provisions will reduce emissions is flawed because, given the stringent applicability criteria for a "narrowly drawn" affirmative defense, a facility has no assurance that an affirmative defense will apply to any particular malfunction event and that even if the affirmative defense was available, it would not shield the facility from compliance orders or other injunctive relief (or from criminal prosecution).

*Response:* The commenters' arguments concerning whether elimination of affirmative defense provisions will or will not reduce emissions during SSM events and will or will not reduce incentives for sources to minimize emissions during SSM events do not address the legal basis for any such affirmative defense provisions. As the commenters correctly observed, the EPA's 1999 SSM Guidance reflected the Agency's prior interpretation of the CAA to permit such affirmative defense provisions, so long as they were sufficiently narrowly drawn, applied only to monetary penalties and required the source to prove that it met the applicable criteria to the trier of fact in an enforcement proceeding. The EPA's arguments for why appropriate affirmative defense provisions could be consistent with CAA requirements included that they could provide an incentive for sources to be properly designed, maintained and operated to minimize emissions at all times.

As explained in the SNPR, however, the EPA has determined that affirmative defenses are impermissible in SIP provisions because they operate to alter

or eliminate the statutory jurisdiction of the courts. The EPA has reached this conclusion in light of the court's decision in *NRDC v. EPA*. Because affirmative defense provisions are inconsistent with the enforcement structure of the CAA, the EPA is making the finding that such provisions are substantially inadequate to meet legal requirements of the CAA. In order to make the finding that these provisions fail to meet legal requirements of the CAA, the EPA is not required to determine or estimate emission reductions that will or will not result from the removal of such provisions from the affected SIPs. The EPA believes this action is necessary to provide environmental protection. However, the EPA's obligation as a legal matter would not change even if commenters were correct in their view that emissions reductions will not result from the removal of the impermissible affirmative defense provisions. The EPA's interpretation of its authority under section 110(k)(5) is discussed in detail in section VIII.A of this document.

The EPA agrees that in response to this SIP call directing the removal of affirmative defense provisions, the affected states may elect to revise affected SIP emission limitation. In so doing, the states may determine that it is appropriate to revise the emission limitations in other respects, so long as they do so consistent with CAA requirements. For example, affected states may elect to create alternative emission limitations that apply to sources during startup and shutdown. The EPA's guidance for this approach is discussed in detail in VII.B.2 of this document. Alternatively, states may elect to overhaul an affected SIP emission limitation entirely to account for the removal of the affirmative defense in some other way. However, states will need to comply with the applicable substantive requirements for the type of SIP provision at issue and the EPA will review those SIP revisions in accordance with the requirements of the CAA, including sections 110(k)(3), 110(l) and 193.

10. Comments that the elimination of affirmative defense provisions will result in sources' facing inconsistent treatment by courts or states when excess emissions are emitted during malfunction events.

*Comment:* Commenters claimed that the concept and framework for affirmative defense provisions are consistent from state to state and that by removing these provisions, sources will be subject to inconsistent treatment of excess emissions during SSM in

different states. The commenters noted that the EPA recognized in the February 2013 proposal and SNPR that states may elect to revise their deficient SIP provisions differently in response to the SIP call and thus the commenters expressed concern that the potential difference in treatment among states will lead to "inconsistent regulation of air pollution across the country."

Commenters further argued that without the consistent regulatory framework provided by an affirmative defense provision, each court is likely to evaluate SSM events differently in the context of enforcement actions. The commenters suggested that allowing each court to consider the facts and circumstances of the emission event in its penalty evaluation without a governing framework could lead to inconsistent enforcement throughout the country.

*Response:* The EPA disagrees that it is inappropriate to allow states to determine how best to revise their SIPs in response to this SIP call, consistent with CAA requirements. As discussed in this document, and as many commenters have also noted, the structure of the CAA is based upon cooperative federalism. Under this structure, Congress gave states broad discretion to develop SIP provisions as necessary to attain and maintain the NAAQS and meet other CAA objectives, so long as the SIPs also meet statutory requirements. The very nature of the SIP program is that similar sources can be treated differently in different states, because the states have discretion with respect to developing their SIP provisions consistent with CAA requirements. Thus, whether the affirmative defense provisions at issue in this action added some level of "consistent" treatment of sources across the nation (a statement with which the EPA does not agree) is not relevant for purposes of this SIP call.<sup>52</sup> Rather, for the reasons explained in the SNPR and in this document, the EPA has determined that affirmative defense provisions are inconsistent with the fundamental legal requirements of the CAA. For that reason, the EPA is requiring the affected states to revise their SIPs to remove the affirmative defense provisions identified in this action. States have discretion in how

<sup>52</sup> The EPA notes that the actual affirmative defense provisions at issue in this action are very dissimilar; some are based on the EPA's interpretation of the CAA in the 1999 SSM Guidance, but the majority of the provisions are relatively unique from state to state. Accordingly, the EPA disagrees with the commenters' basic premise that the affirmative defense provisions are consistent from state to state.

they revise their SIPs in this context as in all other contexts.

As to the concern that different courts might evaluate liability for violations during SSM events differently in the absence of affirmative defense provisions, the EPA notes that this is not the relevant question. The potential for inconsistent treatment by the courts is not a basis for allowing states to retain SIP provisions that are inconsistent with the legal requirements of the CAA. In any event, the EPA disagrees that elimination of affirmative defenses in SIP provisions make it more likely that there would be "inconsistent enforcement" because of a lack of a "regulatory framework." The enforcement structure of the CAA embodied in section 113 and section 304 already provides a structure for enforcement of CAA requirements in federal courts. For example, the CAA already provides uniform criteria for courts to apply, based upon the facts and circumstances of individual enforcement actions. Similar to an affirmative defense provision, section 113(e) already enumerates the factors that courts are required to consider in determining appropriate penalties for violations and thus there is a consistent statutory framework. In essence the commenters object to the fact that in any judicial enforcement case, the court will determine liability and remedies based on the facts and circumstances of the case. However, this is an inherent feature of the enforcement structure of the CAA, regardless of whether there is an affirmative defense provision at issue.

11. Comments that the EPA should have acted in a single, comprehensive rulemaking rather than issuing the supplemental notice of proposed rulemaking.

*Comment:* Commenters asserted that the EPA's issuance of two separate proposals instead of one proposal has prevented states and industry from knowing the entire proposed regulatory action. The commenters claimed that if the EPA is going to issue a SIP call to states concerning the treatment of emissions during SSM events, then it should do so in a single comprehensive rulemaking. The commenters argued this is necessary because states consider different options when revising SIP provisions and that thereafter states will have to work with affected sources to revise permits.

*Response:* The EPA disagrees with the argument that states, industry, individuals and other interested parties have not had an opportunity to know and comment upon the Agency's entire action. The EPA's February 2013

proposal was intended to cover a broad range of issues related to the correct treatment of emissions during SSM events in SIP provisions comprehensively. Because of an intervening court decision that affected the substance of the EPA's initial proposed action, it was necessary to issue a supplemental proposal. The EPA disagrees that the issuance of the SNPR adversely affected the ability of interested parties to understand the Agency's proposed action, because the SNPR only affected one aspect of the original proposed action. As the EPA explained in the SNPR: "In this SNPR, we are supplementing and revising what we earlier proposed as a response to the Petitioner's requests but only to the extent the requests narrowly concern affirmative defense provisions in the SIPs. We are not revising or seeking further comment on any other aspects of the February 2013 proposed action."<sup>53</sup>

As to the commenters' concern that the EPA should take action in a single comprehensive rulemaking, the Agency is doing so. This SIP call action addresses all aspects of the Petition and it is based upon both the February 2013 proposal and the SNPR. As advocated by the commenters, the EPA's objective in this SIP call action is to provide states with comprehensive and up-to-date guidance concerning the correct treatment of emissions during SSM events in SIP provisions, consistent with CAA requirements as interpreted by recent court decisions. The EPA agrees with the commenters that providing states comprehensive guidance in this rulemaking is important to assist states in revising their SIP provisions consistent with CAA requirements. Any necessary changes to permits to reflect the removal of affirmative defense provisions from the underlying SIP will occur later, after the SIP provisions have been revised.

12. Comments that the EPA has not proven that the existence of affirmative defense provisions in SIPs is resulting in specific environmental impacts or interference with attainment and maintenance of the NAAQS.

*Comment:* Several commenters argued that the EPA has failed to demonstrate that the affirmative defense provisions at issue in this action have contributed to a specific NAAQS violation or otherwise caused harm to public health or the environment. The commenters contend that, because of the narrow scope of affirmative defense provisions, it is unlikely that their existence would cause or contribute to any violations of the NAAQS. Some commenters further

noted that some states have experienced improved ambient air quality conditions, despite having SIPs in place with affirmative defense provisions at issue in this action.

The commenters alleged that without providing specific record-based evidence of the impacts caused by affirmative defense provisions, it is unreasonable for the EPA to determine that existing provisions are substantially inadequate or otherwise not in compliance with the CAA. Some commenters further alleged that the EPA has no authority to issue a SIP call without "find[ing] that the applicable implementation plan . . . is substantially inadequate to attain or maintain the relevant [NAAQS]."

*Response:* As explained in the February 2013 proposal, the SNPR and this document, the EPA does not interpret its authority under section 110(k)(5) to require proof that a deficient SIP provision caused a specific violation of the NAAQS at a particular monitor on a particular date, or that a deficient SIP provision undermined a specific enforcement action. Section 110(k)(5) explicitly authorizes the EPA to make a finding that a SIP provision is substantially inadequate to "comply with any requirement of" the CAA, in addition to the authority to do so where a SIP is inadequate to attain and maintain the NAAQS or to address interstate transport. In light of the court's decision in *NRDC v. EPA*, the EPA has reexamined the question of whether affirmative defenses are consistent with CAA requirements for SIP provisions. As explained in this action, the EPA has concluded that such provisions are inconsistent with the requirements of section 113 and section 304. Accordingly, the EPA has the authority to issue SIP calls to states, requiring that they revise their SIPs to eliminate the specific affirmative defense provisions identified in this action. Issues related to the EPA's authority under section 110(k)(5) are discussed in more detail in section VIII.A of this document.

13. Comments that the EPA is violating the principles of cooperative federalism through this action.

*Comment:* Several commenters stated that the EPA's action with respect to affirmative defenses in SIP provisions is inconsistent with the system of cooperative federalism contemplated by the CAA. The commenters alleged that this action is at odds with established CAA and judicial precedents indicating that states have broad discretion in developing SIP provisions, with the EPA's role being limited. Some commenters further alleged that the

<sup>53</sup> 79 FR 55919 at 55923.



EPA's action has the effect of unlawfully directing states to impose a particular control measure. The commenters argued that the EPA must defer to a state's choices on how to meet the relevant NAAQS, through whatever SIP provisions the state elects to develop. One commenter argued that states have independent authority to include affirmative defense policies in their SIPs, even if the DC Circuit has held that the EPA may not include affirmative defense provisions in federal regulations.

*Response:* The EPA agrees that the CAA is based upon the principle of cooperative federalism but disagrees with the commenters' characterization of the respective authorities and responsibilities of states and the Agency. As explained in the February 2013 proposal, and in section V.D.2 of this document, the EPA has the authority and the obligation to ensure that SIP provisions meet fundamental CAA requirements, when initially submitted and later. In the case of affirmative defenses in SIP provisions, the EPA has determined that such provisions do not comply with CAA requirements because they operate to alter or eliminate the statutory jurisdiction of the courts, contrary to section 113 and section 304. The states have broad discretion in how to create SIP provisions but must do so consistent with CAA requirements. By issuing this SIP call, the EPA is not in any way compelling states to impose any specific SIP control measure on any specific source but merely requiring states to revise their SIP provisions to make them consistent with CAA requirements.

14. Comments that the EPA failed to account adequately for the amount of time and resources that will be required to revise state SIPs.

*Comment:* Many commenters asserted that the SNPR did not recognize that removal of affirmative defense provisions from SIPs will impose enormous burdens on states because they will need to revise SIPs to create alternative emission limitations in lieu of the affirmative defenses. Commenters contended that removal of the affirmative defense provisions will necessarily require state air agencies to make extensive revisions to SIPs and that in many states, such changes will have to be reviewed by the state legislature. Commenters explained that such an effort could not reasonably be completed in many states within the 18 months the EPA proposed to provide for SIP revisions in response to the final SIP call. Commenters also stated that the SSM provisions that the EPA proposed to require states to remove from their

SIPs have been incorporated into thousands of title V operating permits and that those title V permits would, in turn, need to be modified if the affirmative defense provisions are removed from the approved SIPs. Commenters indicated that states might also need to amend an even larger number of minor source permits.

Commenters also indicated that in conjunction with removal of affirmative defenses, states will also have to reevaluate the emission limitations currently contained in their SIPs to determine if those limitations are still are consistent with federal and state law (e.g., represent reasonably available control technology). Some commenters expressed the view that the EPA must indicate that states will not be required to remove the identified affirmative defense provisions from their SIPs until the state has had time to consider whether emission limitations in state regulations and in construction and operating permits need to be modified and to obtain any necessary EPA approval for the modified requirements. Commenters also argued that the EPA's suggestion that states subject to a SIP call could simply remove an existing affirmative defense provision and rely on enforcement discretion to address "unavoidable" exceedances is wrong and that states adopt emission limitations under state administrative rules that require the agency to provide a record to support the level of the emission limitation.

*Response:* The EPA has acknowledged that correction of the deficient SIP provisions at issue in this action will take time and resources. For this reason, the EPA is providing states with the maximum time (18 months) permitted by section 110(k)(5) to respond to this SIP call. In addition, the EPA is endeavoring to provide states with clear and comprehensive guidance concerning the proper treatment of excess emissions during SSM events in SIP provisions in order to make this process more efficient.

The EPA acknowledges that some states, in conjunction with removal of affirmative defense provisions, may elect to undertake a more comprehensive revision of affected SIP emission limitations. In so doing, the states may need to undertake a more resource intensive approach than those states that merely elect to eliminate the affirmative defense provisions. In addition, the EPA also recognizes that states may eventually need to revise permits to reflect the elimination of affirmative defense provisions from underlying SIP provisions that may have been reflected in permits. The EPA

discussed these issues in the both the February 2013 proposal and in the SNPR. A summary of comments concerning revisions to operating permits to reflect the revised SIP provisions appears, with the EPA's response to comments, in section VIII.D.28 of this document.

Despite the potential burden on states, as the EPA explained in the February 2013 proposal and the SNPR, the Agency believes that it is obligated and authorized to issue this SIP call action to affected states to require the removal of affirmative defense provisions. The EPA is not in this action evaluating or determining whether SIP emission limitations should or should not be revised in light of the removal of affirmative defenses and is not required to do so. The states have discretion to determine how best to revise the deficient SIP provisions identified in this action, so long as they do so consistent with the CAA requirements.

Further, the EPA does not agree that enforcement discretion cannot substitute for an affirmative defense for malfunctions. For example, the EPA has taken the position that the CAA does not require malfunction emissions to be factored into development of section 112 or section 111 standards and that case-by-case enforcement discretion provides sufficient flexibility.<sup>54</sup> Moreover, the EPA believes that Congress has already provided for such flexibility in section 113, by providing the courts with jurisdiction to determine liability and to impose remedies. For example, in section 113(e), Congress provided specific criteria for courts to consider in imposing monetary penalties, including consideration of such factors as justice may require.

With respect to the potential need to amend permits, as explained in the February 2013 proposal, "the EPA does not intend its action on the Petition to affect existing permit terms or conditions regarding excess emissions during SSM events that reflect previously approved SIP provisions. . . . [A]ny needed revisions to existing permits will be accomplished in the ordinary course as the state issues new permits or reviews and revises existing permits. The EPA does not intend the issuance of a SIP call to have automatic impacts on the terms of any existing permit."<sup>55</sup> Thus, these permit revisions that commenters expressed concern about need not occur during the 18-

<sup>54</sup> See, e.g., "Oil and Natural Gas Sector: Reconsideration of Additional Provisions of New Source Performance Standards; Proposed rule," 79 FR 41752 at 41762-63 (July 17, 2014).

<sup>55</sup> See February 2013 proposal, 78 FR 12459 at 12482 (February 22, 2013).



month SIP development timeframe but may proceed thereafter according to normal permit revision requirements.

Finally, the EPA notes, the burdens associated with SIP revisions and permit revisions are burdens imposed by the CAA. The states have both the authority and the responsibility under the CAA to have SIPs and permit programs that meet CAA requirements. It is inherent in the structure of the CAA that states thus have the burden to revise their SIPs and permits when that is necessary, whether because of changes in the CAA, changes in judicial interpretations of the CAA, changes in the NAAQS, or a host of other potential events that necessitate such revisions. Among those is the obligation to respond to a SIP call that identifies legal deficiencies in specific provisions in a state's SIP.

15. Comments that the EPA is being inconsistent because rules promulgated by the EPA provide affirmative defense provisions for malfunction events.

*Comment:* A number of commenters claimed that the EPA cannot interpret the CAA to prohibit affirmative defenses in SIP provisions because the Agency itself has issued regulations that include affirmative defenses for excess emissions during malfunction events. The commenters claim that the EPA is being inconsistent on this point and thus cannot require states to remove affirmative defenses from SIPs.

Other commenters alleged that the EPA is being inconsistent because it has not adequately explained the reversal of its "decades-old" policy interpreting the CAA to allow affirmative defenses in SIP provision. The commenters cited to SIP provisions that the EPA previously approved in eight states between 2001 and 2010 that they believed would be affected by this SIP call. The commenters claimed that these prior actions were consistent with the EPA's SSM policy memoranda. Additionally, the commenters cited to federal regulations that the EPA has previously promulgated that include affirmative defense provisions. The commenters claimed that these prior actions are "inconsistent with EPA's proposed disallowance of affirmative defenses."

*Response:* The EPA has acknowledged that it has previously approved some SIP provisions with affirmative defenses that were consistent with its interpretation of the CAA in the 1999 SSM Guidance at the time it acted on those SIP submissions. However, since that time, two decisions from the D.C. Circuit have addressed fundamental interpretations of the CAA related to the legally permissible approaches for addressing excess emissions during

SSM events.<sup>56</sup> In light of those decisions, as explained in detail in the February 2013 proposal, the SNPR and this document, the EPA has concluded that certain aspects of its prior interpretation of the CAA, as set forth in the SSM Policy, were not the best interpretation of the CAA. As a result, certain SIP provisions that the EPA previously approved are also not consistent with the requirements of the CAA. In particular, this includes the EPA's prior interpretation of the CAA to allow affirmative defense provisions in SIPs in the 1999 SSM Guidance.

The EPA has also acknowledged that it has in the past taken a similar approach regarding affirmative defense provisions in federal regulations addressing hazardous air pollution and in new source performance standards. Indeed, the EPA's inclusion of an affirmative defense provision in a federal regulation resulted in the court decision in *NRDC v. EPA*, in which the court rejected the Agency's interpretation of the CAA to allow affirmative defenses that limit or eliminate the jurisdiction of the courts. Just as the EPA is calling on states to revise their SIPs to remove affirmative defense provisions, the Agency is also taking action to correct such provisions in federal regulations.<sup>57</sup> The continued existence of such provisions in the EPA regulations that have not yet been corrected does not mean that such provisions are authorized either in state or federal regulations.

As to the claim that the EPA has not adequately explained the basis for changing its interpretation of the CAA regarding affirmative defenses in SIP provisions, the Agency disagrees. The SNPR set forth in detail the basis for the EPA's revised interpretation of the CAA, in light of the court's decision in *NRDC v. EPA*.<sup>58</sup> The commenters failed to specify why this explanation was "inadequate."

16. Comments that existing affirmative defense provisions do not preclude parties from filing enforcement actions or hinder parties from seeking injunctive relief for violations of SIP requirements.

*Comment:* One state commenter asserted that the existing affirmative defense provisions in the state's SIP do not prevent the state or the EPA from pursuing injunctive relief or mitigation

of environmental impacts in the event of violations. Thus, the commenter supported the EPA's prior interpretation of the CAA to allow affirmative defense provisions, so long as courts can still award injunctive relief for violations. The commenter did not articulate how this prior statutory interpretation is consistent with the reasoning of the court in *NRDC v. EPA* concerning the same statutory provisions.

By contrast, an environmental group commenter cited a citizen suit enforcement case in Texas in which the commenter claimed that the affirmative defense provision in that state's SIP operated as a *de facto* shield against any enforcement. The commenter stated that the EPA's approval of the affirmative defense was premised upon its only applying to civil penalties and not to injunctive relief and that the Agency's approval of the SIP provision was explicitly upheld on this basis by the Fifth Circuit. Nevertheless, the commenter asserted, the state agency has implemented this provision such that if the affirmative defense criteria are met, there is "no violation" and thus no potential for injunctive relief.

*Response:* The EPA agrees that some of the affirmative defense provisions at issue in this action are expressly limited to monetary penalties and not to injunctive relief. This approach was consistent with the EPA's prior interpretation of the CAA concerning affirmative defense provisions in SIPs but also consistent with the arguments that the D.C. Circuit rejected in the *NRDC v. EPA* decision. Thus, the fact that some of the affirmative defense provisions addressed in this action preserve the possibility for injunctive relief, even if the court could award no monetary penalties, is no longer a deciding factor.

The EPA also agrees that some agencies or courts may not apply the affirmative defense provisions in the manner intended at the time the EPA approved them into the SIP. Incorrect application of SIP affirmative defense provisions by sources, regulators or courts is a matter of concern. However, even perfect implementation of a SIP affirmative defense provision does not cure the underlying and now evident absence of a legal basis for such provisions. Again, the fact that a given affirmative defense provision is being implemented correctly or incorrectly is no longer a deciding factor for purposes of this SIP call action.

These issues are not pertinent to the EPA's decision in this action to require states to remove the affirmative defense provisions from the previously approved SIPs. Rather, as explained in

<sup>56</sup> See *Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008), in the rulemaking docket at EPA-HQ-OAR-2012-0322-0048; see also *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014), in the rulemaking docket at EPA-HQ-OAR-2012-0322-0885.

<sup>57</sup> See, e.g., 79 FR 60897 (October 8, 2014); 79 FR 72914 (December 8, 2014).

<sup>58</sup> 79 FR 55919 at 55929-30.

detail in the SNPR and this final action, the EPA is requiring the affected states to remove these SIP provisions because they are inconsistent with CAA requirements. As explained in the SNPR, the EPA has concluded that such affirmative defenses in SIP provisions are inconsistent with section 113 and section 304, in light of the reasoning of the court in *NRDC v. EPA*.

17. Comments that the EPA is changing its policy on affirmative defenses, and this change is arbitrary and capricious and thus an impermissible basis for a SIP call.

*Comment:* Several commenters stated that the EPA's action with respect to affirmative defense provisions marks a change in the EPA's approach to these provisions. The commenters alleged that this SIP call action is not mandated by judicial precedent, and therefore the SNPR simply reflected a "policy change" by the EPA. The commenters argued that, while the EPA is permitted to change its policy or interpretation of the law, this specific change is arbitrary and capricious and forces unreasonably difficult and burdensome requirements on states and sources. The commenters asserted that the EPA failed to explain adequately this change in policy or to document reasons for the change in the administrative record. Some commenters further alleged that the EPA does not have authority to impose its policy preferences on states.

*Response:* The EPA disagrees that the basis for this SIP call action is a change of "policy" as alleged by the commenters. The EPA's guidance to states concerning the proper treatment of excess emissions during SSM events in SIP provisions is provided in the SSM Policy, but this guidance reflects the Agency's interpretation of statutory requirements. As explained in detail in the SNPR and in this document, the EPA is changing its interpretation of the CAA with respect to affirmative defenses in SIP provisions based on the logic of the court in *NRDC v. EPA*. Further, as acknowledged by commenters, the EPA is permitted to change its interpretation of the statute provided that it clearly explains the basis for the change. The EPA clearly explained the basis for the changed interpretation in the SNPR based on its analysis of the legal rationale respecting sections 113 and 304 in the *NRDC v. EPA* decision.

18. Comments that emissions during malfunction periods are not "excess" or "violations" but rather are part of the established SIP emission limitations.

*Comment:* Commenters cited the EPA's brief filed in the Fifth Circuit *Luminant Generation v. EPA* case in

support of an argument that states are not required to attach a penalty or any certain amount of penalty to a violation of a SIP emission limitation. The commenters noted that in the brief, the EPA stated that under section 110 of the CAA, states are authorized "to determine what constitutes a violation, and to distinguish both quantitatively and qualitatively between different types of violations." Further, the commenter noted, the EPA argued in the brief that because the violation is defined by the state, an affirmative defense does not impinge on the court's jurisdiction. The commenters contended that nothing has changed since the brief was filed to justify a change in interpretation of the CAA and that the EPA failed to explain why its prior interpretation is no longer correct.

Other commenters claimed that the EPA takes the position that affirmative defenses in SIP provisions conflict with the court's jurisdiction over enforcement actions and stated that this position is flawed because enforcement is limited to violations as defined in the context of the SIP. The commenters asserted that section 304 does not apply when there is no SIP requirement being violated and that the state has the authority to define what constitutes such a violation. Similarly, commenters argued that an affirmative defense provision may provide that emissions will not be "violations" if criteria are met and that it therefore does not interfere with a court's ability to determine appropriate penalty amounts under section 113. The commenters contended that, because the state has the authority to define what constitutes a violation, SIP provisions that include an affirmative defense do not infringe on a court's authority to penalize a source because the CAA does not provide a court with jurisdiction to impose remedies in the absence of liability.

*Response:* The EPA explained in detail the rationale for its change in interpretation of the CAA regarding affirmative defenses in the SNPR. The EPA acknowledges that in the *Luminant Generation v. EPA* case, the Agency argued that states are authorized to determine what constitutes a violation and to distinguish between different types of violations. As the EPA explained in the SNPR, the court in *Luminant Generation v. EPA* held that the Agency's interpretation of the CAA to permit affirmative defenses applicable to malfunctions at that time was a "permissible interpretation of section [113], warranting deference." The same court also upheld the EPA's interpretation of the CAA to preclude

affirmative defenses for planned events on the same basis that it was a reasonable interpretation of the CAA. However, the EPA has reevaluated this interpretation of the CAA requirements in light of the more recent *NRDC v. EPA* decision, and the Agency now believes that its prior interpretation of the CAA with respect to the approvability of affirmative defense provisions in SIPs is no longer the best reading of the statute. Thus, the Agency's view now is that a "violation" cannot be defined in a manner that interferes with the court's role in assessing remedies. It is irrelevant that the EPA had argued for a different interpretation in the past as the Agency now believes that the court's analysis in *NRDC v. EPA* is the better reading of the provisions of the statute concerning affirmative defenses. The EPA has authority to revise its prior interpretation of the CAA when further consideration indicates to the Agency that its prior interpretation of the statute is incorrect. The EPA fully explained the basis for this change in its interpretation of the CAA in the SNPR.

The EPA agrees that in some cases, affirmative defense provisions at issue in this SIP call action are structured as a complete defense to any liability, not merely a defense to monetary penalties. The EPA has also determined that affirmative defense provisions of this type are substantially inadequate to meet CAA requirements. Although such affirmative defenses may not present the same concerns as affirmative defenses applicable only to penalties, such affirmative defenses may create a different concern because they in effect provide a conditional exemption from otherwise applicable emission limitations. If there is no "violation" when the criteria of such an "affirmative defense" are met and no legitimate alternative emission limitation applies during that event, then such an affirmative defense in effect operates to create a conditional exemption from applicable emission limitations. This form of "affirmative defense" provision therefore runs afoul of different CAA requirements for SIP provisions. Under section 302(k) of the CAA, emissions standards or limitations must be continuous and cannot include SSM exemptions, automatic or otherwise. Regardless of whether the commenters believe that this form of "affirmative defense" should be allowed, the EPA believes that provisions of this form are inconsistent with the decision of the court in *Sierra Club v. Johnson*.<sup>59</sup> In that case, the court held that emission limitations under the CAA must impose

<sup>59</sup> 551 F.3d 1019 (D.C. Cir. 2008).

continuous controls and cannot include exemptions for emissions during SSM events. The EPA concludes that making the exemptions from emission limitations conditional does not alter the fact that once exercised they are illegal exemptions.

19. Comments that the definition of “emission limitation” in CAA section 302(k) does not support this SIP call action.

*Comment:* Several commenters noted that while the EPA depends on the definition of “emission limitation” in the CAA section 302(k) for this action, that CAA provision does not support this SIP call action, including that the CAA does not require that SIPs contain continuous emissions standards in the form asserted by the EPA. The commenters alleged that the definition in the CAA and supporting materials interpreting that definition do not support the EPA’s requiring one emission limitation to apply in all circumstances at all times. Some commenters further alleged that states subject to the EPA’s SIP call action have implementation plans that provide emission limitations that apply continuously through a combination of numerical emission limitations, the general duty to minimize emissions and the affirmative defense criteria for excess emissions during malfunctions.

Several commenters questioned why, even if the challenged affirmative defense provisions do not qualify as “emission limitations” or “emissions standards” under the first part of the definition, they are not approvable as “design, equipment, work practice or operational standards” promulgated under the second part of the definition. Some commenters argued that, to the extent that affirmative defense provisions in SIPs do not satisfy the definition of “emission limitation,” they would still be approvable elements of a SIP as “other control measures, means, or techniques” allowed under CAA section 110(a)(2). Further, some commenters believe that the legislative history cited in the SNPR does not support the EPA’s position but rather is only intended to preclude the use of dispersion techniques, such as intermittent controls.

One commenter stated that the Portland Cement NESHAP, at issue in the *NRDC v. EPA* decision, was classified by statute as an “emissions standard,” a term defined by the CAA and defined as applying “on a continuous basis.” The commenter stated that SIP provisions involve more than “emissions standards” and need

not be “emissions standards.”<sup>60</sup> Thus, according to the commenter, the *NRDC v. EPA* decision does not apply to SIP rules.

*Response:* The commenters alleged that the EPA’s interpretation of the CAA section 302(k) definition of “emission limitation” in this action was inappropriate and that section 302(k) does not support this SIP call action. The EPA notes that it is not the Agency’s position that all emission limitations in SIP provisions must be set at the same numerical level for all modes of source operation or even that they must be expressed numerically at all. To the contrary, the EPA intended in the February 2013 proposal and the SNPR to indicate that states may elect to create emission limitations that include alternative emission limitations, including specific technological controls or work practices, that apply during certain modes of source operation such as startup and shutdown. However, this comment is not relevant to the issue of affirmative defense provisions in SIPs. It is not for the reason that affirmative defense provisions do not meet the definition of an “emission limitation” in section 302(k) that the EPA is promulgating this SIP call action for affirmative defense provisions. The EPA has concluded that affirmative defense provisions are substantially inadequate to meet CAA requirements concerning enforcement, in particular the requirements of section 113 and section 304.

As to commenters’ argument that affirmative defense provisions can be appropriately considered to be “design, equipment, work practice or operational standards” under CAA section 302(k), the critical aspect of an emission limitation in general is that it be a “requirement . . . which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis . . . .” These provisions operate to *excuse* sources from liability for emissions under certain conditions, not to *limit* the emissions in question. The affirmative defense provisions at issue in this final action do not themselves, or in combination with other components of the emission limitation, limit the quantity, rate or concentration of air pollutants on a continuous basis. These affirmative defense provisions, therefore, do not themselves meet the statutory definition of an emission limitation under section 302(k).

The EPA notes that the definition of “emission limitation” in section 302(k) is relevant, however, with respect to

those affirmative defense provisions that commenters claim are merely a means to define what constitutes a “violation” of an applicable SIP emission limitation. As previously explained, the EPA believes that an “affirmative defense” structured in such a fashion is deficient because it in effect creates a conditional exemption from the SIP emission limitations. By creating such exemptions, conditional or otherwise, an affirmative defense of this type would render the emission limitations less than continuous.

The EPA disagrees with commenters’ remaining points because the EPA’s position on what appropriately qualifies as an emission limitation is consistent with the CAA, relevant legislative history and case law. These issues are addressed in more detail in sections VII.A.3.i through 3.j of this document.

20. Comments that the EPA has failed to show that state SIPs are substantially inadequate, as is required to promulgate a SIP call.

*Comment:* Several commenters noted that before the EPA can issue a SIP call under section 110(k)(5) with respect to affirmative defense provisions, the EPA must determine that a SIP provision is “substantially inadequate to attain or maintain the relevant [NAAQS], to mitigate adequately the interstate pollutant transport described in section 7506a of this title or section 7511c of this title, or to otherwise comply with any requirement of this chapter.” The commenters further stated that Congress employed a high bar in the language of CAA section 110(k)(5) in requiring the EPA to find “substantial” inadequacies, as opposed to other CAA provisions that permit the Agency to act based on “discretion” or when it “may be appropriate.” The commenters alleged that the EPA has not demonstrated a “substantial inadequacy” with respect to the affirmative defense provisions at issue in the SNPR, as required to issue a SIP call.

Some commenters also argued that the EPA has failed in its SNPR to define or interpret “substantially inadequate” or provide any standards for assessing the adequacy of a SIP with respect to affirmative defense provisions. The commenters also alleged that, if the EPA is required to rely on data and evidence in evaluating SIP revisions, it follows that the EPA should produce at least the same level of data and evidence, if not more, to support a SIP call that is based on the more stringent substantial inadequacy standard of section 110(k)(5).

*Response:* The EPA disagrees with the commenters’ arguments that the Agency has failed to establish that the

<sup>60</sup> See CAA section 110(a)(2)(A).

affirmative defense provisions identified in the SNPR are “substantially inadequate” as required by section 110(k)(5). As explained in the SNPR and this action, the EPA has determined that affirmative defense provisions at issue in this action are substantially inadequate because they are inconsistent with applicable legal requirements of the CAA. The commenters raised similar arguments with respect to the EPA’s authority to issue a SIP call to address other forms of deficient SIP provisions, such as automatic or discretionary exemptions from emission limitations. The EPA responds to these broader arguments in sections VIII.D.46 through D.48 of this document.

21. Comments that this action is not national in scope, and therefore the D.C. Circuit is not the sole venue for review of this action.

*Comment:* Several commenters claimed that the EPA is incorrect in stating that this SIP call action is a single nationally applicable action and of nationwide scope or effect. The commenters alleged that review of all affected SIP provisions in a single action in the D.C. Circuit would inappropriately limit the scope of review by obscuring distinctions between the various states’ regulatory programs and practical concerns. The commenters asserted that none of the various state SIP provisions addressed in the SNPR were the same, and the EPA analyzed each separately and provided case-by-case justification for its proposed action as to each. Further, the commenters argued that although the EPA has packaged the SIP calls in one **Federal Register** document, any final action that the EPA takes with respect to a single state’s affirmative defense provision is only locally applicable and therefore should be reviewed in the individual circuits with jurisdiction over the affected state. One commenter further contended that, while the EPA’s revised SSM Policy may be of interest to states to which the SIP call does not directly apply, that does not make the action “nationally applicable.”

The commenters acknowledged that the EPA cited *Texas v. EPA* in support of its assertion, but the commenters allege that the Fifth Circuit in that case never reached the issue of nationwide scope and effect.<sup>61</sup> The commenters claimed that this SIP call action is distinct from the rule at issue in *Texas v. EPA* because this final action turns on the particulars of the SIP call action’s

impact on each individual state’s SIP. One commenter also claimed that the EPA has failed to provide authority or a legal basis to support its determination that this rulemaking is of “nationwide scope or effect.” Such failure, according to the commenter, violated the requirements of section 307(d)(3) and did not allow for full and meaningful comment on this issue.

One commenter alleged that the EPA has waived its challenge to venue for those circuits that have already weighed in regarding individual state SIP provisions at issue in this action, including Texas’s affirmative defense provisions. Another commenter claimed that the discussion over appropriate venue in the February 2013 proposal and SNPR presupposes that the EPA’s issuance of a revised SSM Policy is a “final agency action” subject to judicial review under section 307(b)(1) but argued that the EPA has failed to determine that its issuance of the SSM Policy, in and of itself, constitutes “final agency action.”

*Response:* The EPA disagrees with the commenters’ theories concerning the scope of the Agency’s action. These comments on the SNPR questioning the EPA’s determination of “nationwide scope and effect” for this action largely repeat similar comments on the February 2013 proposal. As with those prior comments, commenters on the SNPR made the basic argument that this action is not of nationwide scope and effect because the EPA is reviewing individual SIP provisions and directing states to correct their respective deficient SIP provisions. The EPA disagrees with commenters because, as explained in more detail in its response in section V.D.6 of this document, this rulemaking action applies the same “process and standard” to numerous areas across the country. While it is correct that the SIP submissions that states make in response to this SIP call will be reviewed separately by the EPA and subsequently subject to potential judicial review in various circuits, the EPA’s legal interpretation of the CAA concerning permissible SIP provisions to address emissions during SSM events in this action is nationally applicable to all states subject to the SIP call. The EPA provided a full explanation of its basis for this determination of nationwide scope and effect in the February 2013 proposal and the SNPR.

The EPA also disagrees with the argument that the Agency has waived venue regarding challenges to this SIP call action concerning the affirmative defense provisions in the Texas SIP. Evidently, the commenter believes that because a prior challenge to another

EPA rulemaking concerning the affirmative defense provisions occurred in the Fifth Circuit, it necessarily follows that any other rulemaking related to such provisions can only occur in the Fifth Circuit. The EPA believes that this interpretation of its authority under section 307(b)(1) is simply incorrect. Under section 307(b)(1), the EPA is explicitly authorized to make a determination that a specific rulemaking action is of “nationwide scope and effect.” The statute does not specify the considerations that the EPA is to take into account when making such a determination, let alone provide that the Agency cannot invoke this because some aspect of the rulemaking at issue might previously have been addressed in one or more other circuit courts. To the contrary, the EPA believes that section 307(b)(1) explicitly provides authority for the Agency to determine that a given rulemaking should be reviewed in the D.C. Circuit in situations such as those presented in this action that affects important questions of statutory interpretation that affect states nationwide.

The EPA likewise disagrees with the argument that its action is not a final agency action. Within this action, the EPA is taking final agency action to respond to the Petition, updating its interpretations of the CAA in the SSM Policy and applying its interpretations of the CAA in the SSM Policy to specific SIP provisions in the SIPs of many states. The EPA is conducting this action through notice-and-comment rulemaking to assure full consideration of the issues. As stated elsewhere in this document, the revised SSM Policy is a nonbinding policy statement that does not, in and of itself, constitute “final” action. However, the EPA is taking “final” action by responding to the Petition and issuing the resulting SIP call action. To the extent that interpretations expressed in the revised SSM Policy are also relied on to support this “final” action, then the EPA’s interpretations of the CAA requirements for SIP provisions applicable to emissions during SSM events are part of the final agency action and are subject to judicial review. To the extent the commenters are otherwise arguing that the issuance of the updated SSM Policy in and of itself is not final agency action subject to judicial review under the CAA, the EPA agrees with this assertion. The EPA notes that the commenters are at liberty to adopt this position and waive their opportunity to challenge the SSM Policy because they do not consider it final agency action.

<sup>61</sup> See No. 10–60961, 2011 WL 710598 (5th Cir. Feb. 24, 2011).

22. Comments that the EPA should clarify that SIPs can include work practice standards or general-duty clauses to apply during malfunction periods in place of affirmative defense provisions.

*Comment:* Several commenters stated that the EPA should announce in this final action that in lieu of affirmative defenses, states may elect to revise their SIP provisions to include work practice standards or general-duty clauses that are modeled on existing affirmative defense provisions and that would apply during malfunctions. Most of these commenters advocated that the EPA's previously recommended criteria for an "affirmative defense" for malfunctions should simply be changed into criteria for a "work practice" provision instead. One commenter made the same suggestion but also advocated that the EPA eliminate six of the nine criteria and rephrase the remaining criteria, in order to "improve the standards, reduce uncertainty, and reduce wasteful litigation." This commenter advocated that the EPA also redefine the term "malfunction" to much more broadly mean any "sudden and unavoidable breakdown of process or control equipment." Specifically, the commenter advocated, the EPA should no longer recommend that a malfunction be defined as an event that: (i) Was caused by a sudden, infrequent and unavoidable failure of air pollution control equipment, process equipment or a process to operate in a normal or usual manner; (ii) could not have been prevented through careful planning, proper design or better operation and maintenance practices; (iii) did not stem from any activity or event that could have been foreseen and avoided or planned for; and (iv) was not part of a recurring pattern indicative of inadequate design, operation or maintenance. By changing the "affirmative defense" provisions for malfunctions into "work practice" or "general duty" provisions for malfunctions, the commenters argued, the revised provisions would be consistent with CAA requirements. Under this approach, the commenters asserted that compliance with these new requirements would mean that any emissions during a malfunction event could not be considered "excess" or result in any violation if the source had complied with the "work practice" criteria.

*Response:* As an initial matter, the EPA has not established a regulatory definition of "malfunction" that is binding on states when developing SIPs. States have the flexibility in their SIPs to define that term. Thus, the EPA is not

addressing here the comments requesting that EPA "redefine" the definition of malfunction.

Regarding the more general concern of the commenters, that states be allowed to establish an alternative emission limitation in the form of a work practice standard that applies during malfunctions, the EPA notes two points. First, the CAA does not preclude that emissions during malfunctions could be addressed by an alternative emission limitation. The EPA's general position in the context of standards under sections 111, 112 and 129 is that: (i) The applicable emission limitation applies at all times including during malfunctions; (ii) the CAA does not require the EPA to take into account emissions that occur during periods of malfunction when setting such standards; and (iii) accounting for malfunctions would be difficult, if not impossible, given the myriad types of malfunctions that can occur across all sources in a source category and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. Although the EPA has not, to date, found it practicable to develop emission standards that apply during periods of malfunction in place of an otherwise applicable emission limitation, this does not preclude the possibility that a state may determine that it can do so for all or some set of malfunctions. Second, states are not bound to establish any specific definition of "malfunction" in their SIPs. Thus, it is difficult to judge at this time whether any particular alternative emission limitation in a SIP for malfunctions, including any specific work practice requirements in place of an otherwise applicable emission limitation, would be approvable.

With regard to the specific comment that the affirmative defense criteria could be converted into a work practice requirement to apply during malfunctions in place of an otherwise applicable emission limitation, the EPA is unsure at this time whether the criteria previously recommended for an affirmative defense provision would serve to meet the obligation to develop an appropriate alternative emission limitation. Existing affirmative defense criteria (which include, among other things, making repairs expeditiously, taking all possible steps to minimize emissions and operating in a manner consistent with good practices for minimizing emissions) were developed in the context of helping to determine whether a source should be excused from monetary penalties for violations of CAA requirements and were not

developed in the context of establishing an enforceable alternative emission limitation under the Act. The EPA would need to consider this approach in the context of a specific SIP regulation for a specific type of source and emission control system.

Finally, the EPA notes that any emission limitation, including an alternative emission limitation, that applies during a malfunction must meet the applicable stringency requirements for that type of SIP provision (e.g., would need to meet RACT for sources subject to the RACT requirement) and must be legally and practically enforceable. Thus, the SIP provision would need to: (i) Clearly define when the alternative emission limitation applied and the otherwise applicable emission limitation did not; (ii) clearly spell out the requirements of that standard; and (iii) include adequate monitoring, recordkeeping and reporting requirements in order to make it enforceable. In addition, the state would need to account for emissions attributable to these foreseen events in emissions inventories, modeling demonstrations and other regulatory contexts as appropriate.

23. Comments that the EPA has failed to account adequately for the cost of this SIP call action and is therefore in violation of the Regulatory Flexibility Act, the Unfunded Mandates Reform Act and Administration policy.

*Comment:* Two commenters argued that the SNPR lacks sufficient analysis of what this action will cost states, stationary sources and the public. The commenters allege that this absence of economic impact analysis is contrary to the Regulatory Flexibility Act, the Unfunded Mandates Reform Act and Administration policy. One of the commenters also noted that imposing substantial "unfunded mandates" on state regulatory agencies and forcing stationary sources to absorb additional costs should be evaluated carefully.

*Response:* The EPA disagrees with the commenters' allegation that the EPA has failed to comply with relevant statutes and Administration policy in accounting for the cost of the actions proposed in the SNPR. The EPA did in fact properly consider the costs imposed by this action. These issues are addressed in more detail in section V.D.7 of this document.

24. Comments that states should not be required to eliminate affirmative defense provisions but rather should be allowed to revise them to be appropriate under CAA requirements.

*Comment:* One state commenter claimed that it should be allowed to revise its existing affirmative defense

provisions rather than remove them. The commenter asserted that the state should be allowed to revise the provision to make clear that it does not apply to private enforcement actions under CAA section 304(a), which was the only issue specifically before the court in *NRDC v. EPA*. Relying on the court's decision, the commenter claimed that the state should be allowed to revise the affirmative defense provisions to apply only in administrative enforcement proceedings. The commenter also argued that there may be other options for appropriately tailoring the state's existing affirmative defense provisions rather than removing them from the SIP.

*Response:* The EPA agrees that the court in *NRDC v. EPA* did not directly address whether states have authority to create affirmative defense provisions that apply exclusively to state personnel in the context of state administrative enforcement actions. Statements by the court concerning the EPA's own authority in the context of administrative enforcement, however, indicate that the court did not intend to foreclose the Agency from exercising its own enforcement discretion with respect to remedies in federal administrative enforcement actions. However, the EPA has reevaluated its interpretation of CAA requirements in light of the court's decision in *NRDC v. EPA* and the EPA now interprets the CAA to preclude state SIP provisions creating affirmative defenses that sources could assert in the context of judicial enforcement in federal court, whether initiated by states, the EPA, or other parties pursuant to section 304.

The EPA agrees that states may elect to revise their existing deficient affirmative defense provisions to make them "enforcement discretion"-type provisions that apply only in the context of administrative enforcement by the state. Such revised provisions would need to be unequivocally clear that they do not provide an affirmative defense that sources can raise in a judicial enforcement context or against any party other than the state. Moreover, such provisions would have to make clear that the assertion of an affirmative defense by the source in a state administrative enforcement context has no bearing on the additional remedies that the EPA or other parties may seek for the same violation in federal administrative enforcement proceedings or judicial proceedings.

In this action, the EPA is not determining whether any such revisions would meet applicable CAA requirements. The EPA would need to consider the precise wording of any

such revised provisions in evaluating whether the state has adequate enforcement authority to meet the requirements of section 110(a)(2)(C) and also whether application of such a provision in a state administrative proceeding could interfere with the ability of a citizen or the EPA to bring a federal enforcement action.

25. Comments that states' ability to use enforcement discretion is not an adequate replacement for affirmative defense provisions.

*Comment:* Several commenters argued that exercise of enforcement discretion is not an adequate substitute for an affirmative defense, particularly where the emissions at issue resulted from an inevitable and unavoidable malfunction. In any individual case, the commenters were concerned that even if a state elects not to enforce against a violation, the EPA or others might elect to bring an enforcement action. One commenter contended that it is inappropriate for the EPA to encourage states to use enforcement discretion instead of encouraging them to create alternative emission limitations to replace affirmative defenses in SIP provisions. The commenters also alleged that reliance on judicial discretion to determine the appropriateness of penalties is similarly inadequate.

The commenters contended that, although it is reasonable for a state to exercise enforcement discretion under circumstances when an emission limitation cannot be met, it is not reasonable to adopt SIP provisions with emission limitations that put some sources in the position of "repeated noncompliance."

*Response:* These comments addressing whether an enforcement discretion approach is sufficient are similar to comments received on the February 2013 proposal to which the EPA responds in section VII.A.3.p of this document. Through this SIP call, the EPA is not requiring states to rely on enforcement discretion in place of achievable SIP emission limitations. Rather, the EPA is requiring states to ensure that emission limitations are consistent with the definition of that term in section 302(k), and specifically that emission standards provide for continuous compliance. If emission limitations that apply during routine operations cannot be met by a source during periods of startup or shutdown, states have authority to establish alternative emission standards. The EPA disagrees that an affirmative defense for penalties for excess emissions for periods of malfunctions is an adequate substitute for an enforceable continuous emission limitation and concludes that

such an approach is inconsistent with the CAA as interpreted by the court in *NRDC*, as explained in the SNPR.

The EPA also disagrees that affirmative defense provisions would have been appropriate to address the "repeated noncompliance" concerns of the commenters. The EPA's prior interpretation of the CAA was that states could create narrowly tailored affirmative defense provisions applicable to malfunctions. However, to the extent that there are malfunctions that put a source in the position of "repeated noncompliance," the form of affirmative defense that the EPA previously believed was consistent with the CAA would not have provided relief because several of the criteria could not be met. Specifically, the EPA believes repeated noncompliance is typically a result of inadequate design, is part of a "recurring pattern," and thus likely could have been "foreseen and avoided." In short, an affirmative defense would not have been appropriate for such a source.

26. Comments that the EPA should establish specific rules to govern how states set alternative limitations that apply in lieu of affirmative defense provisions.

*Comment:* Commenters urged the EPA to clarify in this final action that states may establish alternative emission limitations applicable to startup and shutdown only if the source meets all applicable CAA requirements, including but not limited to BACT/LAER, and the state also demonstrates through modeling that potential worst-case emissions from startup and shutdown would not interfere with attainment and reasonable further progress. Other commenters stated that any changes to SIP emission limitations must be made as part of a SIP revision process, which would include a demonstration that higher levels of emissions during startup and/or shutdown would not lead to violations of the NAAQS or PSD increments.

Commenters also argued that any such alternative emission limitation should "sunset" each time the EPA promulgates a new NAAQS and that the Agency should require the state to demonstrate again that an alternative emission limitation applicable during startup and/or shutdown does not interfere with attainment or other applicable requirements of the CAA for the revised NAAQS. In support of their arguments that the EPA should impose specific requirements of this type, the commenters indicated that a state has issued permits for sources that establish particulate matter (PM) emission limitations less stringent than existing

permit terms and without requiring a BACT/LAER/ambient impacts analysis and has done so without public notice and comment. Commenters urged the EPA to require states to follow public notice-and-comment processes before issuing any permits for sources with alternative limitations less stringent than those imposed by the SIP and claimed such process is required under the CAA.

In addition, some commenters stated that if the EPA allows states to set “new, higher, or alternate limits” applicable during startup and shutdown, the EPA should set clear parameters. According to commenters, the EPA at a minimum should require, for emissions that have not previously been authorized or considered part of a source’s potential to emit, that: (i) Limitations must meet BACT/LAER; (ii) there should be clear, enforceable rules for when alternate limitations apply; (iii) there should be a demonstration that worst-case emissions will not cause or contribute to a violation of the NAAQS or PSD increments; and (iv) proposed limitations should be subject to public notice and comment and judicial review. The commenter pointed to a letter from the EPA to Texas in which, the commenter claims, the Agency indicated that these parameters must be met.

A commenter stated that the EPA should unequivocally state in this final action that: (i) All potential to emit emissions, including quantifiable emissions associated with startup and shutdown, must be included in federal applicability determinations and air quality permit reviews; (ii) authorization of these emissions must include technology reviews and impacts analyses; and (iii) the above requirements must be included in the permit that authorizes routine emissions from the applicable units and must be subject to public notice, comment and judicial review.

A commenter recognized that there may be a variety of ways in which states can authorize different limits to apply during startup and shutdown but argued that, no matter the method chosen, the emissions need to be fully accounted for by the state in the relevant SIP, including a demonstration that the additional emissions authorized during startup and shutdown will not violate any NAAQS.

*Response:* The EPA understands the concerns raised by the commenters but does not agree that further regulatory action such as issuance of regulatory text is necessary at this time. Through this action, the EPA is providing comprehensive guidance to states

concerning issues related to the proper treatment of emissions during SSM events in SIP provisions. For example, the EPA is addressing the concern raised by commenters that states will need to ensure that any SIP revisions in response to this SIP call will meet applicable CAA requirements. Under section 110(k)(3), the EPA has authority to approve SIP revisions only if they comply with CAA requirements. Moreover, under section 110(l), the EPA cannot approve SIP revisions if they would “interfere with any applicable requirement concerning attainment and reasonable further progress . . . or any other applicable requirement” of the CAA. The EPA believes that both states and the Agency can address these issues in SIP rulemakings without the need for any additional federal regulations as suggested by the commenters.

The EPA agrees with the concerns raised by the commenters regarding instances where a state has issued source permits that impose less stringent emission limitations than otherwise established in the SIP. Using a permitting process to create exemptions from emission limitations in SIP emission limitations applicable to the source is tantamount to revising the SIP without meeting the procedural and substantive requirements for a SIP revision. The Agency’s views on this issue are described in more detail in section VII.C.3.e of this document.

The EPA does not agree with the comment that suggests “worst-case modeling” would always be needed to show that a SIP revision establishing alternative emission limitations for startup and shutdown would not interfere with attainment or reasonable further progress. The nature of the technical demonstration needed under section 110(l) to support approval of a SIP revision depends on the facts and circumstances of the SIP revision at issue. The EPA will evaluate SIP submissions that create alternative emission limitations applicable to certain modes of operation such as startup and shutdown carefully and will work with the states to assure that any such limitations are consistent with applicable CAA requirements. Under certain circumstances, there may be alternative emission limitations that necessitate a modeling of worst-case scenarios, but those will be determined on a case-by-case basis.

The EPA also does not agree that existing SIP provisions with alternative emission limitations should automatically “sunset” upon promulgation of a new or revised NAAQS. Such a process could result in gaps in the state’s regulatory structure

that could lead to backsliding. When the EPA promulgates new or revised NAAQS, it has historically issued rules or guidance to states concerning how to address the transition to the new NAAQS. In this process, the EPA typically addresses how states should reexamine existing SIP emission limitations to determine whether they should be revised. With respect to technology-based rules, the EPA has typically taken the position that states need not adopt new SIP emission limitations for sources where the state can demonstrate that existing SIP provisions still meet the relevant statutory obligations. For example, the EPA believes that states can establish that existing SIP provisions still represent RACT for a specific source or source category for a revised NAAQS. In making this determination, states would need to review the entire emission limitation, including any alternative numerical limitations, control technologies or work practices that apply during modes of operation such as startup and shutdown, and ensure that all components of the SIP emission limitation meet all applicable CAA requirements.

27. Comments that the EPA should closely monitor states’ SIP revisions in response to this SIP call.

*Comment:* Commenters urged the EPA to monitor states’ efforts to revise SIPs in response to the SIP call closely in order to assure that the revisions meet all applicable requirements. The commenters indicated concern that states and industry may weaken emission limitations through this process. The commenter alleged that one state has issued permits for sources with emission limitations applicable during SSM events that are less stringent than the emission limitations approved in the SIP. Furthermore, the commenter alleged, the state issued these permits without public notice and comment. As support for this contention, the commenter detailed the differences between the requirements of a permit issued for a source and the requirements in the SIP. The commenter also claimed that the state has issued permits for other facilities similar to the one it described in detail in the comments.

*Response:* The EPA understands the concerns expressed by the commenter that SIP revisions made in response to this SIP call need to be consistent with CAA requirements. As explained in this document, the states and the EPA will work to assure that the SIP revisions will meet applicable legal requirements. The EPA will evaluate these SIP submissions consistent with its



obligations under sections 110(k)(3), 110(l) and 193 and under any other substantive provisions of the CAA applicable to specific SIP submissions.

To the extent that the commenters are concerned about whether the SIP revisions meet applicable requirements, they will have the opportunity to participate in the development of those revisions. States must submit SIP revisions following an opportunity for comment at the state level. Additionally, the EPA acts on SIP submissions through its own notice-and-comment process. As part of these administrative processes, both the state and the EPA will need to evaluate whether the proposed revision to the SIP meets applicable CAA requirements. In the context of those future rulemaking actions, the public will have a chance to review the substance of the specific SIP revisions in response to this SIP call, as well as the state's and the EPA's analysis of the SIP submissions for compliance with the CAA.

28. Comments that the EPA does not have authority to take this action without Congressional authorization.

*Comment:* A commenter contended that the EPA does not have the authority to write law and that the EPA should be required to seek changes to the applicable law through Congress, before eliminating affirmative defense and due process provisions from SIPs.

*Response:* Through this action the EPA is not attempting to rewrite the CAA. Rather, the EPA is requiring states to revise specific SIP provisions to comply with the existing requirements of the CAA, as interpreted by the courts. As explained in detail in the SNPR and this document, the EPA has determined that affirmative defense provisions at issue in this action are inconsistent with the existing requirements of the CAA.

29. Comments that affirmative defense provisions are needed to ensure sources' Constitutional right to due process in the event of violations.

*Comment:* A number of commenters argued that by requiring the removal of affirmative defense provisions from SIPs, the EPA is impinging on the Constitutional rights of sources that may have wanted to assert such affirmative defenses in an enforcement action. A commenter claimed that affirmative defense provisions are not "loop holes," as alleged by the EPA, but instead are fundamental due process provisions which should be retained at all levels for the protection of the public. Another commenter cited *State Farm Mut. Auto Ins. Co. v. Campbell*, for the proposition that a monetary penalty that is "grossly excessive . . . constitutes an arbitrary

deprivation of property."<sup>62</sup> Other commenters claimed that excessive penalties constitute an arbitrary deprivation of property. The commenters asserted that a penalty is excessive where it applies severe punishment to an act that is unavoidable.

*Response:* The commenters' due process concerns suggest that without an affirmative defense provision, any penalty assessed for violation of a SIP would be *per se* "excessive" or "arbitrary." Though not expressly stated, some of these comments appear to suggest that the existing CAA enforcement provisions are facially unconstitutional. The EPA disagrees. The CAA does not mandate that any penalty is automatically assessed for a violation. Rather the CAA establishes a maximum civil penalty in section 113(b) but then expressly provides in section 113(e) the criteria that the EPA or the courts (as appropriate in administrative or judicial enforcement) "shall take into consideration (in addition to other factors as justice may require)." These criteria explicitly include consideration of "good faith efforts to comply." Thus, the CAA on its face does not mandate the imposition of any penalty automatically, much less one that is *per se* excessive. Notably, the commenters do not elaborate on how or why they believe the statutory penalty provisions of the CAA are facially unconstitutional, instead making generalized claims.

To the extent that the commenters are raising an "as applied" claim of unconstitutionality, any such claim can be raised in the future in the context of a specific application of the statute in an enforcement action. Such was the case in the *State Farm* case cited by the commenters. In that case, a court had awarded punitive damages of \$145 million in addition to \$1 million compensatory damages in an automobile liability case. A statutory penalty provision was not at issue in that case and thus there were no statutory criteria for the lower court to consider in determining the appropriate penalty amount. Rather, in its review of whether the punitive damage award was excessive, and thus violated due process, the Court looked at three factors it has instructed lower courts to consider in assessing punitive damages. Such would be the case with any claim that a CAA penalty violated due process, where a reviewing court would consider whether the court appropriately considered the relevant penalty factors in assessing a penalty

claimed as unconstitutional "as applied."

30. Comments that the EPA's action eliminating affirmative defense provisions from SIPs violates the Eighth Amendment of the Constitution.

*Comment:* Several commenters asserted that relying on judicial discretion to determine the appropriateness of penalties is arguably unconstitutional under the Eighth Amendment's prohibition on excessive fines and punishments by allowing potentially significant penalties that are disproportionate to the offense. The commenter stated that an affirmative defense provision "helps guard against infringement of the Eighth Amendment's protections." Other commenters argued that the U.S. Supreme Court has held that Eighth Amendment protections apply to government action in a civil context as well as in a criminal context. The commenters claimed that significant penalties are not proportional to an offense caused by unavoidable events, such as excess emissions during malfunction events. The commenters concluded that unless the EPA allows states to accommodate unavoidable emissions through changes to applicable emission limitations before affirmative defenses are removed, the EPA's proposal would "run afoul of Constitutional limitations."

One commenter stated that an affirmative defense is the "minimum protection EPA or the state must provide to avoid infringing constitutional rights." The commenter also argued that the EPA itself has relied on the existence of an affirmative defense to defend against a challenge to the achievability of an emission limitation in a FIP. To support this argument, the commenter quoted from the court's opinion in *Montana Sulphur*.<sup>63</sup>

*Response:* For the reasons provided above regarding commenters' due process claims, the EPA also disagrees with their claims that eliminating affirmative defense provisions in SIPs would result in the penalty provisions of the CAA being facially in violation of the Eighth Amendment. Similarly, if a party believes that the penalties assessed in any civil enforcement action do violate the Eighth Amendment, they can raise a challenge that the specific SIP provision at issue "as applied" in that instance violates the U.S. Constitution. As with the commenters'

<sup>63</sup> See 666 F.3d at 1192–93 ("EPA acknowledges that violations are likely inevitable, but relies on the provision of an affirmative defense to compensate for infeasibility problems.").

<sup>62</sup> See 538 U.S. 408, 417 (2003).



due process arguments, the EPA believes that Congress has already adequately addressed their concerns about potential unfair punishment for violations by authorizing courts to consider a range of factors in determining what remedies to impose for a particular violation, including the explicit factors for consideration in imposition of civil penalties as well as other factors as justice may require.

The EPA acknowledges that it has previously relied on affirmative defense provisions as a mechanism to mitigate penalties where a violation was beyond the control of the owner or operator. These actions, however, predated the court's decision in *NRDC v. EPA* and the EPA has since revised its approach to affirmative defense provisions in its own rulemaking actions. In addition, the EPA believes that the penalty criteria in section 113(e) provide a similar function and the commenters do not explain why they believe these explicit statutory factors do not provide sufficient relief from the imposition of an allegedly unconstitutionally excessive penalty.

31. Comments that the EPA should impose a deadline of 12 months for states to respond to this SIP call with respect to affirmative defense provisions.

*Comment:* An environmental organization commented that the EPA should require affected states to make the required SIP revisions within 12 months, rather than the 18 months proposed in the February 2013 proposal and the SNPR. The commenter claimed that communities near large sources have been suffering for decades and individuals are suffering adverse health effects because of the emissions from sources that are currently allowed by deficient SIP provisions. The commenter also stated that the EPA has recognized that excess emissions allowed by the SIP provisions subject to the SIP call are continuing to interfere with attainment and maintenance of the NAAQS and that this justifies imposing a shorter schedule for states to respond to the SIP call.

*Response:* The EPA acknowledges the concerns expressed by the commenters and the importance of providing environmental protection. However, as explained in the February 2013 proposal and in section IV.D.14 of this document, the EPA believes that providing states with the full 18 months authorized by section 110(k)(5) is appropriate in this action. The EPA is taking into consideration that state rule development and the associated administrative processes can be complex and time-consuming. This is

particularly true where states might elect to consider more substantial revision of a SIP emission limitation, rather than merely removal of the impermissible automatic or discretionary exemption or the impermissible affirmative defense provision. In addition, the EPA believes that providing states with the full 18 months will be more likely to result in timely SIP submissions that will meet CAA requirements and provide the ultimate outcome that the commenters seek. Some states subject to the SIP call may be able to revise their deficient SIP provisions more quickly, and the EPA is committed to working with states to revise these provisions consistent with CAA requirements in a timely fashion. For these reasons, the EPA does not agree that it would be reasonable to provide less than the 18-month maximum period allowed under the CAA for states to submit SIP revisions in response to the SIP call.

32. Comments that the EPA should encourage states to add reporting and notification provisions into their SIPs.

*Comment:* A commenter urged the EPA to encourage states to make information about excess emissions events easily and quickly accessible to the public. The commenter claimed that it is unacceptable to make it difficult for members of the public to obtain information about potential harmful exposure to pollutants and that state "open-record" request laws are inadequate, particularly when the public is not informed that an event occurred. The commenter also asserted that reporting provisions enhance compliance and cited to the Toxic Release Inventory program's success in driving pollution reduction. The commenter argued that contemporaneous reporting of the conditions surrounding a violation, the cause and the measures taken to limit or prevent emissions ensure that stakeholders can respond in real time and also target enforcement efforts to violations where further action is warranted. As support for this approach, the commenter pointed to Jefferson County, Kentucky, as a local air quality control area that has already corrected problematic regulations in advance of this SIP call and also noted that the County included notification and reporting requirements, recognizing that they would reduce the burden on the government in trying to calculate the level of excess emissions and also help in responding to citizen inquiries about such events.

*Response:* The EPA agrees with the commenter that reporting and notification provisions can ease the

burden on government agencies by placing the burden on the entity that is in the best position to calculate the level of excess emissions and also provide other relevant information regarding such events. In addition, to make this information available to the public quickly allows for a timely response if there is any health concern. An increased level of communication between industry and residents also serves to build a better community relationship and partnership. The EPA also supports such requirements as components of SIP emission limitations because they facilitate effective compliance assurance. However, the EPA does not believe that the Agency should create a separate federal requirement addressing this issue beyond general CAA requirements at this time.

33. Comments that this SIP call action concerning affirmative defense provisions is being taken pursuant to sue-and-settle tactics.

*Comment:* One commenter alleged that the action proposed in the EPA's SNPR has an "impermissible sue-and-settle genesis" and that the EPA is attempting to grant as much of Sierra Club's petition as it can "regardless of the wisdom or permissibility of doing so."

*Response:* The EPA disagrees with the commenter's allegation that the EPA's proposed action in the SNPR is inappropriate because it is the result of "sue-and-settle" actions. This is a rulemaking in which the EPA is taking action to respond to a petition for rulemaking, and it has undergone a full notice-and-comment rulemaking process as provided for in the CAA. This issue is addressed in more detail in section V.D.1 of this document.

34. Comments that affirmative defense provisions do not alter or eliminate federal court jurisdiction and therefore do not violate CAA sections 113 or 304.

*Comment:* Two commenters argued that SIP affirmative defense provisions do not in fact interfere with the rights of litigants to pursue enforcement consistent with their rights under the citizen suit provision of CAA section 304, because plaintiffs have the right to bring a citizen suit despite the existence of affirmative defense provisions. One commenter cited at least four instances in the last few years in which environmental groups filed enforcement actions against sources in federal district court based on alleged emissions events for which the companies asserted affirmative defenses. The commenters stated that courts applied the affirmative defense provision criteria and the criteria of section 113(e) to determine

whether penalties were appropriate for alleged violations and did not dismiss plaintiffs' claims for lack of jurisdiction. According to the commenters, affirmative defense provisions place additional burden on the sources, not plaintiffs, to demonstrate that the criteria of an affirmative defense are met.

*Response:* The commenters argued that affirmative defense provisions are not inconsistent with the statutory requirements of section 304, because citizen groups still bring enforcement actions for events where companies may raise an affirmative defense. Even if this were so, the EPA disagrees with the commenters that this establishes that affirmative defense provisions are consistent with CAA requirements. The mere existence of enforcement actions does not negate the fact that affirmative defense provisions interfere with effective enforcement of SIP emission limitations according to CAA section 304. More to the point, affirmative defense provisions purport to alter or eliminate the statutory jurisdiction of courts to determine liability or to impose remedies for violations, which makes the provisions inconsistent with the grant of authority in sections 113 and 304. The court's decision in *NRDC v. EPA* was not based on the question of whether plaintiffs could still try to bring an enforcement case for violations of the EPA regulation at issue; the case was decided on the grounds that the EPA when creating regulations has no authority to limit or eliminate the jurisdiction of the courts. As explained in the SNPR and this document, the EPA believes that the same principle applies to states when creating SIP provisions.

35. Comments that this action may increase the chance of catastrophic failure at facilities.

*Comment:* One commenter expressed a concern that eliminating affirmative defense provisions applicable to emissions during SSM events could increase the potential for environmental harm caused by catastrophic failure by outlawing and penalizing the emissions during SSM events that have previously been allowed or shielded from liability through affirmative defense provisions. As an example, the commenter argued that refineries and gas plants must be allowed to vent VOCs to the atmosphere on the rare occasion that there is an equipment malfunction that could otherwise cause an explosion that might destroy the plant and surrounding neighborhood. The commenter speculated that the threat of costly new fines inherent with the removal of affirmative defense provisions could

cloud plant operators' thinking when they make safety decisions. The commenter contended that allowing rare, safely controlled releases of emissions would invariably be better for both the natural and human environment than the damage from a catastrophic explosion.

*Response:* Although the comment refers to SSM events generally, the only specific concern raised by the commenter concerning affirmative defense provisions is that if they are not allowed in SIPs, this may lead to an increase in malfunction-related catastrophic events. The EPA does not agree with the commenter's view that removal of affirmative defense provisions may increase environmental harm related to catastrophic events. The EPA believes that it is unlikely the availability or unavailability of an affirmative defense will affect a responsible and competent source operator's response to a risk of explosion. First, an explosion presents much more serious and more certain adverse economic consequences for the source than does the specter of a potential enforcement action for a CAA violation, especially because enforcement agencies and courts are likely to exercise leniency if the violation was the result of an unpreventable malfunction. Second, even if an affirmative defense were available, it is only used after initiation of an enforcement proceeding, and successful assertion of such a defense in an enforcement proceeding depends on meeting all affirmative defense criteria and is not guaranteed. The EPA does not believe that a responsible and competent source operator's actions in an emergency situation would be influenced by speculation that if the source is subject to an enforcement action in the future, there may be a defense to penalties available.

Moreover, as explained in detail in the SNPR and this document, the court's decision in *NRDC v. EPA* held that section 113 and section 304 preclude EPA authority to create affirmative defense provisions in the Agency's own regulations imposing emission limitations on sources, because such provisions purport to alter the jurisdiction of federal courts to assess liability and impose penalties for violations of those limits in private civil enforcement cases. The EPA believes that the reasoning of the court in that decision indicates that the states, like the EPA, have no authority in SIP provisions to alter the jurisdiction of federal courts to assess penalties for violations of CAA requirements through affirmative defense provisions. If states

lack authority under the CAA to alter the jurisdiction of the federal courts through affirmative defense provisions in SIPs, then the EPA lacks authority to approve any such provision in a SIP. The EPA notes that the court in *NRDC v. EPA* did not indicate that the statutory provisions should be interpreted differently based on speculation that a given source operator might allow a catastrophic explosion because of the absence of an affirmative defense.

36. Comments that the SNPR did not meet the procedural requirements of section 307(d) because the EPA failed to provide its legal interpretations or explain the data relied upon in this rulemaking.

*Comment:* Commenters claimed that the EPA violated the procedural requirements of the CAA in the SNPR. The commenters asserted that the EPA designated this rulemaking a section 307(d) action, and the commenters claimed that the EPA did not follow the procedures required in section 307(d). The commenters claimed that the EPA failed to provide a statement of basis and purpose that includes "the major legal interpretations and policy consideration underlying the proposed rule."

In particular, the commenters argued that the EPA did not provide required information with regard to its proposed SIP call concerning the affirmative defense provisions in the Texas SIP. Commenters claimed that the SNPR is deficient because it does not address: (i) Why the Fifth Circuit decision in *Luminant Generation v. EPA* does not control the present action; (ii) on what basis the EPA believes it may disregard the judgment in *Luminant Generation v. EPA*; (iii) why the DC Circuit decision, which does not address the Texas SIP, should take precedence over the *Luminant Generation v. EPA* decision; (iv) on what basis the EPA believes that the DC Circuit may reach a different result than the Fifth Circuit as to the affirmative defenses in the Texas SIP; and (v) the grounds for "acquiescing" to the DC Circuit decision in *NRDC v. EPA*, which specifically states that it does not apply to SIP revisions, and ignoring the relevant holding in the Fifth Circuit. Commenters cited several cases claiming that the DC Circuit has held that, unlike under the Administrative Procedure Act (APA), under CAA section 307(d) the EPA is required to give a detailed explanation of its reasoning and that commenters should not be required to "divine the agency's unspoken thoughts."

*Response:* The EPA disagrees with the commenters' premise. The EPA did

discuss the *Luminant Generation v. EPA* decision in the SNPR and also explained in detail why it believes that the logic of the DC Circuit's decision in *NRDC v. EPA* supports this SIP call action for affirmative defense provisions. Specifically, the EPA recognized that both the Fifth Circuit and the DC Circuit were evaluating the same fundamental question—whether section 113 and section 304 preclude the creation of affirmative defense provisions that alter or eliminate the jurisdiction of federal courts to determine liability and impose remedies for violations of CAA requirements in judicial enforcement actions. The EPA explained that, after reviewing the *NRDC v. EPA* decision and the *Luminant Generation v. EPA* decision, the Agency determined that its prior interpretation of the CAA, as advanced in both courts, is not the best reading of the statute. Indeed, it is significant that the *Luminant* court upheld the EPA's approval of affirmative defense provisions for unplanned events (*i.e.*, malfunctions) and the disapproval of affirmative defenses for planned events (*i.e.*, startup, shutdown and maintenance) specifically because the court deferred to the Agency's reasonable interpretation of ambiguous statutory provisions in the case at hand. In the SNPR, the EPA explained point by point why it now believes that the decision of the DC Circuit in *NRDC v. EPA* reflected the better reading of section 113 and section 304 and thus that the Agency no longer interprets the CAA to permit affirmative defenses in SIP provisions. Therefore, the EPA believes the Fifth Circuit could also take a different view of the reasonableness of the EPA's resolution of ambiguous provisions after reviewing the EPA's current interpretation of the statute.

37. Comments that the EPA has recently approved affirmative defense provisions through various SIP actions and, therefore, these provisions are proper under the EPA's interpretation of the CAA.

*Comment:* One commenter noted that the EPA has never taken issue with the affirmative defense provisions in states' SIPs across the many instances where the EPA has reviewed the states' later SIP submissions. The implication of the commenters' argument is that if the EPA has previously approved a SIP submission and directly or indirectly reapproved an affirmative defense provision in the past, this means that the affirmative defense provision still meets CAA requirements.

*Response:* The EPA disagrees with this comment. As explained in the EPA's response in section VIII.D.18 of

this document, when the EPA takes final action on a state's SIP submission, this does not necessarily entail reexamination and reapproval of every provision in the existing SIP. The EPA often only examines the specific SIP provision the state seeks to revise in the SIP submission, which may not include any affirmative defense provisions. To the extent the EPA did review and approve any affirmative defense provision consistent with its prior interpretation of the CAA that narrowly tailored affirmative defenses were appropriate, the EPA has fully explained why it is now revising that interpretation such that past action based on the earlier interpretation would no longer provide precedent for the EPA's actions. As part of this final action, applying its revised SSM Policy, the EPA is taking action to address affirmative defense provisions in SIPs. Since the issuance of the court's opinion in *NRDC v. EPA*, the EPA has similarly taken steps in its own ongoing NSPS and NESHAP rulemakings to ensure that any existing affirmative defense provisions are removed and that no affirmative defenses are proposed or finalized.<sup>64</sup>

38. Comments that affirmative defense provisions function as structured state "enforcement discretion" and are an important tool for states to prioritize enforcement activities.

*Comment:* A state commenter characterized the affirmative defense contained in the state's SIP as an "enforcement discretion" tool that supports the state's regulation of excess emissions during malfunction events and promotes preventive measures, proper monitoring and reporting by sources. The state asserted that removal of the affirmative defense provision from the SIP would require the state to address and track violations that are not a high priority to the state agency. The state argued that the affirmative defense provision provides certainty to the

regulated community by providing structure to how the state will exercise its enforcement discretion. The state expressed concern that without the affirmative defense, there will be uncertainty for the regulated community and less incentive for sources to make repairs and submit excess emissions reports promptly. The commenter explained that state law requires reporting of emission events that exceed an established "reportable" quantity and that this prompt reporting allows the state agency to evaluate each event reported quickly. In investigating reports of emission events, the state claimed, it "exercises enforcement discretion only in cases in which it determines that each affirmative defense criteria is met," and the state claimed that elimination of the affirmative defense provision would result in an increase of unavoidable emissions being treated as violations. In general, the state objected to the elimination of the affirmative defense provision because it would strain the state agency's enforcement resources.

*Response:* These comments concerning the state's use of affirmative defense criteria in structuring the exercise of its enforcement discretion (*e.g.*, determining whether to bring an enforcement action or to further investigate an emissions event) appear to be based on a misunderstanding of the SNPR. This SIP call action directing states to remove affirmative defense provisions from SIPs would not prevent the state from applying such criteria in the exercise of its own enforcement discretion. For example, the state is free to consider factors such as a facility's efforts to comply and the facility's compliance history in determining whether to investigate an excess emissions event or whether to issue a notice of violation or otherwise pursue enforcement. Application of such criteria may well be useful and appropriate to the state in determining the best way to allocate its own enforcement resources. So long as a state does not use the criteria in such a way that the state fails to have a valid enforcement program as required by section 110(a)(2)(C), the state is free to use criteria like those of an affirmative defense as a way to "structure" its exercise of its own enforcement discretion.

However, as explained in the SNPR, the EPA's view is that SIPs cannot include affirmative defense provisions that alter the jurisdiction of the federal court to assess penalties in judicial enforcement proceeding for violation of CAA requirements. The EPA has determined that the specific affirmative

<sup>64</sup> See, *e.g.*, "National Emission Standards for Hazardous Air Pollutants Residual Risk and Technology Review for Flexible Polyurethane Foam Production; Final rule," 79 FR 48073 (August 15, 2014) (announcing decision not to finalize the proposed affirmative defense); "National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards; and Manufacture of Amino/Phenolic Resins; Final rule," 79 FR 60897 (October 8, 2014) (announcing decision not to finalize the proposed affirmative defense); "Oil and Natural Gas Sector: Reconsideration of Additional Provisions of New Source Performance Standards; Final rule," 79 FR 79017 (December 31, 2014) (removing affirmative defense from regulations); and "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Proposed rule," 80 FR 3089 (January 21, 2015) (proposing to remove affirmative defense from regulations).

defense provisions at issue in the SIP of the state commenter are inconsistent with CAA requirements for SIP provisions. In addition, the EPA interprets the CAA to bar “enforcement discretion” provisions in SIPs that operate to impose the enforcement discretion decisions of the state upon the EPA or any other parties who may seek to enforce pursuant to section 304. Pursuant to the requirements of sections 110(k), 110(l) and 193, the EPA has both the authority and the responsibility to evaluate SIP submissions to assure that they meet the requirements of the CAA. Pursuant to section 110(k)(5), the EPA has authority and discretion to take action to require states to revise previously approved SIP provisions if they do not meet CAA requirements.

39. Comments that requiring states to adopt emissions standards that are not achievable at all times and then expecting courts to render those standards lawful by employing discretion in the assessment of penalties is contradictory to CAA section 307(b)(2), which mandates pre-enforcement review.

*Comment:* Commenters claimed that courts have consistently held that regulators cannot rely on enforcement discretion to establish the achievability of emission limitations. The commenters referred to a 1973 case addressing NSPS regulations in which they claimed the court remanded the standard to the EPA to support an “at all times” standard.

Commenters further asserted that reliance on the discretion of judges to decide whether and to what extent penalties are appropriate is also not lawful. The commenters claimed that if a state establishes an emission limitation on the basis that it is achievable, then the standard must be achievable under all circumstances to which it applies. The commenters argued that if a state adopts an emission limitation that is not achievable under all conditions, then the state must explain how the standard can be reasonably enforced. The commenters concluded that a numerical emission limitation that cannot be achieved by sources at all times is not enforceable because no amount of penalty can deter the violating conduct. The commenters recognized that it is reasonable for states to exercise enforcement discretion under circumstances when an emission limitation cannot be met but argued that it is not reasonable to adopt a SIP that puts sources in a state of repeated noncompliance.

Commenters further claimed that the decision in *NRDC v. EPA*, while allowing sources to argue unjust

punishment should not be imposed, conflicts with the CAA’s requirements for pre-enforcement review. The commenters stated that emission limitations that could have been challenged at the time of promulgation are not subject to judicial review in an enforcement proceeding. Thus, the commenters claimed that any challenges to the achievability of a SIP emission limitation must be made at the time the emission limitation is promulgated and that judges will not consider such arguments in the context of an enforcement action. The commenters argued that forcing states to adopt unachievable standards and then prohibiting them from including an affirmative defense for penalties for unavoidable exceedances creates a dilemma Congress sought to avoid.

*Response:* A number of the arguments that the commenters are raising appear to go beyond the scope of the affirmative defense issues in the SNPR. In the SNPR, the EPA revised its prior proposal with respect to issues related exclusively to affirmative defense provisions in SIPs. These comments are similar to an argument that any period during which an emission limitation cannot be met must be deemed not to be a violation of the standard. The EPA is addressing these types of issues, to the extent that they were raised in comments on the February 2013 proposal. The EPA does note, however, that the Agency is not requiring states to adopt standards that cannot be met and then providing that states rely only on enforcement discretion to address periods of noncompliance. As the EPA has already noted, states may choose to adopt standards that are different from the underlying standards for periods where the underlying standards cannot otherwise be met.

The EPA also disagrees with the comments that the holding in *NRDC v. EPA* is inconsistent with section 307(b)(2) that provides that regulations that could have been challenged at promulgation cannot later be challenged in an enforcement action. Nothing in section 307(b) limits the ability of the court to consider the criteria of section 113(e), such as good faith efforts of a source to comply in assessing penalties. Neither the decision in *NRDC v. EPA* nor this SIP call action requires states to adopt standards that cannot be met. Moreover, the public, including regulated sources, will be able to comment on the revised emission limitations developed by states in response to this SIP call. If an interested party believes that the state has adopted unachievable emission limitations, that

party can challenge such standards at the time of adoption.

40. Comments that the EPA should announce that it no longer recognizes existing affirmative defense provisions, effective immediately.

*Comment:* Commenters claimed that because the court held in *NRDC v. EPA* that the EPA was without authority to interpret the CAA to allow affirmative defenses, the EPA should explicitly state that it no longer recognizes such provisions immediately. The commenters argued that by proceeding under its authority under section 110(k)(5), the EPA is providing states 18 months to remove the affirmative defense provisions and that thereafter the EPA will take additional time to act upon those SIP revisions under section 110(k). The commenters argued that this in effect allows sources to continue relying on affirmative defense provisions that are not consistent with CAA requirements for a period of years into the future. Because the EPA did not have authority to approve the affirmative defense provisions in the first instance, the commenters contended that the Agency should simply declare that the affirmative defense provisions are now null and void.

*Response:* The EPA understands the concerns raised by the commenters but does not agree that it is inappropriate for the Agency to proceed under section 110(k)(5). The affirmative defense provisions at issue in this action are part of the EPA-approved SIPs for the affected states. The EPA, as well as states, cannot unilaterally change provisions of the approved SIP without following appropriate notice-and-comment procedures. To the extent that the commenters were advocating that the EPA should have proceeded under its authority to do error corrections under section 110(k)(6) rather than a SIP call under section 110(k)(5), the Agency has explained in detail in the February 2013 proposal and this document why it is more appropriate to proceed via SIP call instead. Under the SIP call process, the EPA cannot declare approved SIP provisions null and void prior to state submission and Agency approval of revised SIP provisions.

41. Comments that instead of acting through a nationwide SIP call action, the EPA should have worked individually with states to correct any deficient SIP provisions.

*Comment:* One commenter stated that rather than using a SIP call to address SSM issues in existing SIPs, the EPA should work with each state’s air agency individually to identify and address SIP deficiencies and work through the

normal rulemaking and SIP revision processes to correct any identified problems.

*Response:* The CAA provides a mechanism specifically for the correction of flawed SIPs. Section 110(k)(5) provides: "Whenever the Administrator finds that the applicable implementation plan for any area is substantially inadequate to . . . comply with any requirement of [the Act], the Administrator shall require the State to revise the plan as necessary to correct such inadequacies." This type of action is commonly referred to as a "SIP call." The EPA, in this action, is using a SIP call to notify states of flawed provisions in SIPs and initiate a process for correction of those provisions.

The EPA, largely through its Regional Offices, has individually reviewed each state provision subject to the SIP call. The EPA will work closely with each state, during future rulemaking actions taken by states to adopt SIP revisions and then subsequent actions by the EPA, to determine whether these adopted SIP revisions meet the mandate of the SIP call and are consistent with CAA requirements. As part of these actions, each individual state will work closely with the EPA to address the SIP deficiencies identified in this action.

42. Comments that the EPA should not consider those comments on the February 2013 proposal that concern affirmative defense provisions in SIPs to no longer be relevant.

*Comment:* One commenter disagreed with the EPA's decision not to respond to certain comments submitted on the February 2013 proposal, to the extent the comments applied to issues related to affirmative defense provisions in SIPs generally or to issues related to specific affirmative defense provisions identified by the Petitioner, on a basis that those comments are no longer relevant if the EPA finalizes its action as proposed in the SNPR. According to the commenter, the EPA's interpretation of the CAA has not changed so as to exclude the other SSM provisions in the proposed action, and this alone shows that the comments submitted on the February 2013 proposal are still relevant.

*Response:* The EPA's proposed action on the Petition in the SNPR superseded the February 2013 proposal with respect to the issues related to affirmative defense provisions in SIPs. As explained in detail in the SNPR, after the February 2013 proposal, a federal court ruled that the CAA precludes authority of the EPA to create affirmative defense provisions applicable to private civil suits in its own regulations. As a result, the EPA issued the SNPR to propose applying a

revised interpretation of the CAA to affirmative defense provisions in SIPs consistent with the reasoning of court's decision in *NRDC v. EPA*. The EPA supplemented and revised its proposed response to the issues raised in the Petition to the extent they concern affirmative defenses in SIPs, and the EPA solicited comment on its revised proposed response. Because the EPA's interpretation of the CAA with respect to the legal basis for affirmative defense provisions in SIPs changed from the time of the February 2013 proposal to the SNPR, comments on the February 2013 proposal, to the extent they concern affirmative defenses in SIPs, are not relevant to the EPA's revised proposed action. For example, comments on the February 2013 proposal that argue that the EPA was wrong to interpret the CAA to allow affirmative defense provisions for malfunction events but not for startup or shutdown events are not relevant when the Agency's interpretation of the CAA is now that no such affirmative defense provisions are valid. Similarly, comments that the criteria that the EPA previously recommended for valid affirmative defense provisions were too many, too few, too stringent or too lax simply have no relevance when the EPA does not interpret the CAA to allow any such affirmative defense provisions regardless of the number, nature or stringency of the criteria for qualifying for the affirmative defense. The EPA believes that it is reasonable for the Agency to determine that comments that have no bearing on the proposed action concerning affirmative defense provisions in the SNPR are not relevant. Because the EPA is finalizing the action on the Petition as proposed in the SNPR concerning affirmative defense provisions in SIPs, it is doing so based on evaluation of the comments that are relevant to the SNPR.

#### **V. Generally Applicable Aspects of the Final Action in Response to Request for the EPA's Review of Specific Existing SIP Provisions for Consistency With CAA Requirements**

##### **A. What the Petitioner Requested**

The Petitioner's second request was for the EPA to find as a general matter that SIPs "containing an SSM exemption or a provision that could be interpreted to affect EPA or citizen enforcement are substantially inadequate to comply with the requirements of the Clean Air Act."<sup>65</sup> In addition, the Petitioner requested that if the EPA finds such defects in existing

SIPs, the EPA "issue a call for each of the states with such a SIP to revise it in conformity with the requirements or otherwise remedy these defective SIPs."<sup>66</sup>

The Petitioner argued that many SIPs currently contain provisions that are inconsistent with the requirements of the CAA. According to the Petitioner, these provisions fall into two general categories: (1) Exemptions for excess emissions by which such emissions are not treated as violations; and (2) enforcement discretion provisions that may be worded in such a way that a decision by the state not to enforce against a violation could be construed by a federal court to bar enforcement by the EPA under CAA section 113, or by citizens under CAA section 304.

First, the Petitioner expressed concern that many SIPs have either automatic or discretionary exemptions for excess emissions that occur during periods of SSM. Automatic exemptions are those that, on the face of the SIP provision, provide that any excess emissions during such events are not violations even though the source exceeds the otherwise applicable emission limitations. These provisions preclude enforcement by the state, the EPA or citizens, because by definition these excess emissions are defined as not violations. Discretionary exemptions or, more correctly, exemptions that may arise as a result of the exercise of "director's discretion" by state officials, are exemptions from an otherwise applicable emission limitation that a state may grant on a case-by-case basis with or without any public process or approval by the EPA, but that do have the effect of barring enforcement by the EPA or citizens. The Petitioner argued that "[e]xemptions that may be granted by the state do not comply with the enforcement scheme of title I of the Act because they undermine enforcement by the EPA under section 113 of the Act or by citizens under section 304."

The Petitioner explained that all such exemptions are fundamentally at odds with the requirements of the CAA and with the EPA's longstanding interpretation of the CAA with respect to excess emissions in SIPs. SIPs are required to include emission limitations designed to provide for the attainment and maintenance of the NAAQS and for protection of PSD increments. The Petitioner emphasized that the CAA requires that such emission limitations be "continuous" and that they be established at levels that achieve sufficient emissions control to meet the required CAA objectives when adhered

<sup>65</sup> Petition at 14.

<sup>66</sup> *Id.*

to by sources. Instead, the Petitioner contended, exemptions for excess emissions through “loopholes” in SIP provisions often result in real-world emissions that are far higher than the level of emissions envisioned and planned for in the SIP.

Second, the Petitioner expressed concern that many SIPs have provisions that may have been intended to govern only the exercise of enforcement discretion by the state’s own personnel but are worded in a way that could be construed to preclude enforcement by the EPA or citizens if the state elects not to enforce against the violation. The Petitioner contended that “any SIP provision that purports to vest the determination of whether or not a violation of the SIP has occurred with the state enforcement authority is inconsistent with the enforcement provisions of the Act.”

After articulating these overarching concerns with existing SIP provisions, the Petitioner requested that the EPA evaluate specific SIP provisions identified in the separate section of the Petition titled, “Analysis of Individual States’ SSM Provisions.”<sup>67</sup> In that section, the Petitioner identified specific provisions in the SIPs of 39 states that the Petitioner believed to be inconsistent with the requirements of the CAA and explained in detail the basis for that belief. In the conclusion section of the Petition, the Petitioner listed the SIP provisions in each state for which it seeks a specific remedy. A more detailed explanation of the Petitioner’s arguments appears in the 2013 February proposal.<sup>68</sup>

#### B. What the EPA Proposed

In its February 2013 proposal, the EPA proposed to deny in part and to grant in part the Petition with respect to this two-part request. The EPA explained its longstanding interpretations of the CAA with respect to SIP provisions that apply to excess emissions during SSM events. The EPA also agreed that automatic exemptions, discretionary exemptions via director’s discretion, ambiguous enforcement discretion provisions that may be read to preclude EPA or citizen enforcement and affirmative defense provisions can interfere with the overarching objectives of the CAA, such as attaining and maintaining the NAAQS, protecting PSD increments and improving visibility. Such provisions in SIPs can interfere with effective enforcement by air agencies, the EPA and the public to

assure that sources comply with CAA requirements, and such interference is contrary to the fundamental enforcement structure provided in CAA sections 113 and 304.

Accordingly, the EPA evaluated each of the specific SIP provisions that the Petitioner identified to determine whether it is consistent with CAA requirements for SIP provisions. The EPA conducted this evaluation in light of its interpretations of the CAA reflected in the SSM Policy and recent court decisions pertaining to relevant issues. In section IX of the February 2013 proposal, the EPA provided its proposed view with respect to each of these SIP provisions. The EPA solicited comment on its proposed grant or denial of the Petition for each of the specific SIP provisions and its rationale for the proposed action. Through consideration of the overarching issues raised by the Petition, and informed by the evaluation of the specific SIP provisions identified in the Petition as a group, the EPA also determined that it was necessary to reiterate, clarify and amend its SSM Policy. The EPA thus took comment on its interpretations of the CAA set forth in the SSM Policy in order to assure that it provides comprehensive and up-to-date guidance to states concerning SIP provisions applicable to emissions from sources during SSM events.

#### C. What Is Being Finalized in This Action

The EPA is taking final action to deny in part and to grant in part the Petition with respect to the request to find specific SIP provisions inconsistent with the CAA as interpreted by the Agency in the SSM Policy. The EPA is also taking final action to grant the Petition on the request to make a finding of substantial inadequacy and to issue a SIP call for specific existing SIP provisions. The basis for the SIP call is that these provisions include an automatic exemption, a discretionary exemption, an inappropriate enforcement discretion provision, an affirmative defense provision, or other form of provision that is inconsistent with CAA requirements for SIP provisions. For those SIP provisions that the EPA has determined to be consistent with CAA requirements, however, the Agency is taking final action to deny the Petition and taking no further action with respect to those provisions. The specific SIP provisions at issue are discussed in detail in section IX of this document.

As a result of its review of the issues raised by the Petition, the EPA is also through this action clarifying, reiterating and updating its SSM Policy to make

certain that it provides comprehensive and up-to-date guidance to air agencies concerning SIP provisions to address emissions during SSM events, consistent with CAA requirements. With respect to automatic exemptions from emission limitations in SIPs, the EPA’s longstanding interpretation of the CAA is that such exemptions are impermissible because they are inconsistent with the fundamental requirements of the CAA. The EPA has reiterated this point in numerous guidance documents and rulemaking actions and is reaffirming that interpretation in this final action. By exempting emissions that would otherwise constitute violations of the applicable emission limitations, such exemptions interfere with the primary air quality objectives of the CAA (e.g., attainment and maintenance of the NAAQS), undermine the enforcement structure of the CAA (e.g., the requirement that all SIP provisions be legally and practically enforceable by states, the EPA and parties with standing under the citizen suit provision), and eliminate the incentive for emission sources to comply at all times, not solely during normal operation (e.g., incentives to be properly designed, maintained and operated so as to minimize emissions of air pollutants during startup and shutdown or to take prompt steps to rectify malfunctions).

The court’s decision in *Sierra Club v. Johnson* concerning exemptions for SSM events in the EPA’s own regulations has reemphasized the fact that emission limitations under the CAA are required to be continuous. The court held that this statutory requirement precludes emission limitations that would allow periods during which emissions are exempt. Moreover, from a policy perspective, the EPA notes that the existence of impermissible exemptions in SIP provisions has the potential to lessen the incentive for development of control strategies that are effective at reducing emissions during certain modes of source operation such as startup and shutdown, even while such strategies could become increasingly helpful for various purposes, including attaining and maintaining the NAAQS. The issue of automatic exemptions for SSM events in SIP provisions is discussed in more detail in section VII.A of this document.

With respect to discretionary exemptions from emission limitations in SIPs, the EPA also has a longstanding interpretation of the CAA that prohibits “director’s discretion” provisions in SIPs if they provide unbounded discretion to allow what would amount to a case-specific revision of the SIP

<sup>67</sup> Petition at 17.

<sup>68</sup> See February 2013 proposal, 78 FR 12459 at 12473–74 (February 22, 2013).

without meeting the statutory requirements of the CAA for SIP revisions. In particular, the EPA interprets the CAA to preclude SIP provisions that provide director's discretion authority to create discretionary exemptions for violations when the CAA would not allow such exemptions in the first instance. As with automatic exemptions for excess emissions during SSM events, discretionary exemptions for such emissions interfere with the primary air quality objectives of the CAA, undermine the enforcement structure of the CAA and eliminate the incentive for emission sources to minimize emissions of air pollutants at all times, not solely during normal operations. Through this action, the EPA is reiterating its interpretation of the provisions of the CAA that preclude unbounded director's discretion provisions in SIPs. The EPA is also explaining two ways in which air agencies may elect to correct a director's discretion type of deficiency. The issue of director's discretion in SIP provisions applicable to SSM events is discussed in more detail in section VII.C of this document.

With respect to enforcement discretion provisions in SIPs, the EPA also has a longstanding interpretation of the CAA that SIPs may contain such provisions concerning the exercise of discretion by the air agency's own personnel, but such provisions cannot bar enforcement by the EPA or by other parties through a citizen suit.<sup>69</sup> In the event such a SIP provision could be construed by a court to preclude EPA or citizen enforcement, that provision would be at odds with fundamental requirements of the CAA pertaining to enforcement. Such provisions in SIPs can interfere with effective enforcement by the EPA and the public to assure that sources comply with CAA requirements, and this interference is contrary to the fundamental enforcement structure provided in CAA sections 113 and 304. The issue of enforcement discretion in SIP provisions applicable to SSM events is discussed in more detail in section VII.D of this document.

The EPA has evaluated the concerns expressed by the Petitioner with respect to each of the identified SIP provisions and has considered the specific remedy sought by the Petitioner. Through evaluation of comments on the February 2013 proposal and the SNPR, the EPA has taken into account the perspective of other stakeholders concerning the proper application of the CAA and the Agency's preliminary evaluation of the

specific SIP provisions identified in the Petition. In many instances, the EPA has concluded that the Petitioner's analysis is correct and that the provision in question is inconsistent with CAA requirements for SIPs. For those SIP provisions, the EPA is granting the Petition and is simultaneously making a finding of substantial inadequacy and issuing a SIP call to the affected state to rectify the specific SIP inadequacy. In other instances, however, the EPA disagrees with the Petitioner's analysis of the provision, in some instances because the analysis applied to provisions that have since been corrected in the SIP. For those provisions, the EPA is therefore denying the Petition and taking no further action. In summary, the EPA is granting the Petition in part, and denying the Petition in part, with respect to all of the specific existing SIP provisions for which the Petitioner requested a remedy. The EPA's evaluation of each of the provisions identified in the Petition and the basis for the final action with respect to each provision is explained in detail in section IX of this document.

#### *D. Response to Comments Concerning the CAA Requirements for SIP Provisions Applicable to SSM Events*

The EPA received numerous comments, both supportive and adverse, concerning the Agency's decision to propose action on the Petition with respect to the overarching issues raised by the Petitioner. A number of these comments also raised important issues concerning the rights of citizens to petition their government, the process by which the EPA evaluated the issues raised in the Petition and the relative authorities and responsibilities of states and the EPA under the CAA. Many commenters raised the same conceptual issues and arguments. For clarity and ease of discussion, the EPA is responding to these overarching comments, grouped by topic, in this section of this document. The responses to more specific substantive issues raised by commenters on the EPA's interpretation of the CAA in the SSM Policy appear in other sections of this document that focus on particular aspects of this action.

1. Comments that the EPA should not have responded to the petition for rulemaking or that the EPA was wrong to do so.

*Comment:* Some commenters opposed the EPA's proposed action on the Petition in the February 2013 proposal entirely and alleged that it is "sue-and-settle rulemaking" or "regulation by litigation." Commenters stated that the "proposed rule and corresponding

aggressive deadline schedule stem from" a settlement of litigation brought by Sierra Club to respond to the Petition.

Some commenters expressed concern that the EPA's proposed action was made in response to a settlement agreement, through a process that, the commenters alleged, did not permit any opportunity for participation by affected parties. Other commenters, believing that the EPA's proposed action was taken to fulfill a consent decree obligation, argued that consent decree deadlines "often do not allow EPA enough time to write quality regulations" or would not allow "opportunity to properly research and investigate the effect of State SSM provisions or the State's ability to meet the NAAQS, or to determine whether the SSM provisions are somehow inconsistent with the CAA." The commenters alleged that the process "bypasses the traditional rulemaking concepts of transparency and effective public participation" and "sidesteps the proper rulemaking channels and undercuts meaningful opportunities for those affected by the proposed rule to develop and present evidence that would support a competing and fully informed viewpoint on the substantive issues during the rulemaking process."

*Response:* The EPA believes that these comments reflect fundamental misunderstandings about this action. This is a rulemaking in which the EPA is taking action to respond to a petition for rulemaking, and it has undergone a full notice-and-comment rulemaking process as provided for in the CAA. In the February 2013 proposal, the EPA proposed to take action on the Petition. Under the CAA, the APA and the U.S. Constitution, citizens have the right to petition the government for redress. For example, the APA provides that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule."<sup>70</sup> When citizens file a petition for rulemaking, they are entitled to a response to such petition—whether that response is to grant the petition, to deny the petition, or to partially grant and partially deny the petition as has occurred in this rulemaking action.

Some of these commenters expressed concern that the EPA's action on the Petition was the result of the Agency's obligations under a consent decree or settlement agreement and that this fact in some way invalidates the substantive action. First, the EPA notes that the action was undertaken not in response to a consent decree but rather in

<sup>69</sup> See, e.g., 1983 SSM Guidance at Attachment p. 2.

<sup>70</sup> 5 U.S.C. 553(e).



response to a settlement agreement. Second, the EPA notes that this settlement agreement was entered into by the Agency and the Sierra Club in order to resolve allegations that the EPA was not correctly evaluating and acting upon SIP submissions from states. In particular, the Sierra Club claimed that the EPA was illegally ignoring existing deficiencies in the SIPs of many states, including existing allegedly deficient provisions concerning the treatment of excess emissions during SSM events, when acting on certain SIP submissions. As a result, the Sierra Club alleged, the EPA was acting in contravention of its obligations under the CAA and various consent decrees and thus should be held in contempt for failure to address these issues. In order to resolve these allegations, the EPA agreed only to take action on a petition for rulemaking and to take the action that it deemed appropriate after evaluation of the allegations in the petition. The terms of the settlement agreement underwent public comment and are a matter of public record and are in the docket for this rulemaking.<sup>71</sup>

The EPA does not enter into settlement agreements lightly, nor does the EPA enter into settlement agreements without following the full public process required by CAA section 113(g), which the Agency followed in this case.<sup>72</sup> The EPA solicited comment on the draft settlement agreement as required by section 113(g). In no case does the EPA enter into a settlement agreement that has not been officially reviewed not only by the Agency but also by the Department of Justice. Thus, contrary to the commenters' implications, this rulemaking is the result of an appropriate settlement agreement that did undergo public comment and is legitimate.

In acting on the Petition the EPA has followed all steps of a notice-and-comment rulemaking, as governed by applicable statutes, regulations and executive orders, including a robust process for public participation. When the EPA initially proposed to take action on the Petition, in February 2013, it simultaneously solicited public comment on all aspects of its proposed response to the issues in the Petition and in particular on its proposed action with respect to each of the specific existing SIP provisions identified by the Petitioner as inconsistent with the

requirements of the CAA. In response to requests, the EPA extended the public comment period for this proposal to May 13, 2013, which is 80 days from the date the proposed rulemaking was published in the **Federal Register** and 89 days from the date the proposed rulemaking was posted on the EPA's Web site.<sup>73</sup> The EPA deemed this extension appropriate because of the issues raised in the February 2013 proposal. The EPA also held a public hearing on March 12, 2013. In response to this proposed action, the EPA received approximately 69,000 public comments, including over 50 comment letters from state and local governments, over 150 comment letters from industry commenters, over 25 comment letters from public interest groups and many thousands of comments from individual commenters. Many of these comment letters were substantial and covered numerous issues.

Similarly, when the EPA ascertained that it was necessary to revise its proposed action on the Petition with respect to affirmative defenses in SIP provisions, the Agency issued the SNPR. In that supplemental proposal, in September 2014, the EPA fully explained the issues and took comment on the questions related to whether affirmative defense provisions are consistent with CAA requirements concerning the jurisdiction of courts in enforcement actions, and thus whether such provisions are consistent with fundamental CAA requirements for SIP provisions. The EPA provided a public comment period ending November 6, 2014, which is 50 days from the date the SNPR was published in the **Federal Register** and 62 days from the date the SNPR was posted on the EPA's Web site. The EPA believes that the comment period was sufficient given that the subject of the SNPR was limited to the narrow issue of whether affirmative defense provisions are consistent with CAA requirements. The EPA also held a public hearing on the SNPR on October 7, 2014 on the specific topic of the legitimacy of affirmative defense provisions in SIPs. In response to the SNPR, the EPA received over 20,000 public comments, including at least 9 comment letters from states and local governments, over 40 comment letters from industry commenters, at least 6 comment letters from public interest

groups, and many thousands of comments from individual commenters.

2. Comments that EPA's action on the Petition violates "cooperative federalism."

*Comment:* Many commenters asserted that the EPA's proposed action on the Petition and the issuance of this SIP call violate principles of cooperative federalism because they impermissibly substitute the EPA's judgment for that of the states in the development of SIPs. This argument was raised by both air agency and industry commenters.

These commenters described the relationship between states and the EPA with respect to SIPs in general. The commenters stated that Congress designed the CAA as a regulatory partnership between the EPA and the states, *i.e.*, a relationship based on "cooperative federalism." Under cooperative federalism, the commenters noted, the EPA has the primary responsibility to identify air pollutants that endanger the public health and welfare and to set national standards for those pollutants. By contrast, the states have primary responsibility to determine how to achieve those national standards by developing federally enforceable measures through SIPs. According to these commenters, however, once a state has made a SIP submission, the EPA's role is relegated exclusively to the ministerial function of reviewing whether the SIP submission will result in compliance with the NAAQS. Similarly, the commenters claim that when EPA is evaluating in the context of a SIP call whether a state's existing SIP continues to meet applicable CAA requirements, the only relevant question is whether the existing SIP will result in compliance with the NAAQS. Thus, the commenters claimed that by finding certain existing SIP provisions substantially inadequate because they are legally deficient to meet CAA requirements for SIP provisions, the EPA is usurping state authority under the cooperative-federalism structure of the CAA.

To support this view, many commenters cited to the "*Train-Virginia* line of cases," named for the U.S. Supreme Court case *Train v. Natural Resources Defense Council, Inc.*,<sup>74</sup> and to the D.C. Circuit case *Virginia v. EPA*.<sup>75</sup> The D.C. Circuit has described these cases as defining a "federalism bar" that constrains the EPA's authority with respect to evaluation of state SIPs

<sup>71</sup> See Settlement Agreement executed November 30, 2011, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0039.

<sup>72</sup> See "Proposed Settlement Agreement, Clean Air Act Citizen Suit" (notice of proposed settlement agreement; request for public comment), 76 FR 54465 (September 1, 2011).

<sup>73</sup> See "State Implementation Plans: Response to Petition for Rulemaking; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction; Notice of extension of public comment period," 78 FR 20855 (April 8, 2013), in the rulemaking docket at EPA-HQ-OAR-2012-0322-0126.

<sup>74</sup> 421 U.S. 60 (1975).

<sup>75</sup> 108 F.3d 1397 (D.C. Cir. 1997).



under section 110.<sup>76</sup> Many commenters asserted that this federalism bar limits the EPA's oversight of state SIPs exclusively to whether a SIP will result in compliance with the NAAQS. The commenters evidently construe "compliance with the NAAQS" very narrowly to mean the SIP will factually result in attainment of the NAAQS, regardless of whether the SIP provisions in fact meet all applicable CAA requirements (e.g., the requirement that the SIP emission limitations be continuous and enforceable).

Accordingly, most of these commenters selectively quoted or cited a passage in *Train*,<sup>77</sup> and similar passages in circuit court opinions following *Train*, for the proposition that the EPA cannot issue a SIP call addressing the SIP provisions at issue in this SIP call action. Some of these commenters asserted that if the EPA were to finalize this action, the states would have "nothing left" of their discretion in SIP development and implementation in the future.

*Response:* The EPA agrees that the CAA establishes a framework for state-federal partnership based on cooperative federalism. The EPA does not, however, agree with the commenters' characterization of that relationship. The EPA explained its view of the cooperative-federalism structure in the February 2013 proposal, especially the fact that under this principle both states and the EPA have authorities and responsibilities with respect to implementing the requirements of the CAA.<sup>78</sup> The EPA believes that the commenters fundamentally misunderstand or inaccurately describe this action, as well as the "'division of responsibilities' between the states and the federal government" in section 110 that is described in the *Train-Virginia* line of cases.<sup>79</sup>

In CAA section 110(a)(1), Congress imposed the duty upon all states to have a SIP that provides for "the implementation, maintenance, and enforcement" of the NAAQS. In section 110(a)(2), Congress clearly set forth the basic SIP requirements that "[e]ach such plan shall" satisfy.<sup>80</sup> By using the

mandatory "shall" in section 110(a)(2), Congress established a framework of mandatory requirements *within which* states may exercise their otherwise considerable discretion to design SIPs to provide for attainment and maintenance of the NAAQS and to meet other CAA requirements. In other sections of the Act, Congress also imposed additional, more specific SIP requirements (e.g., the requirement in section 189 that states impose RACM-level emission limitations on sources located in PM<sub>2.5</sub> nonattainment areas).

In particular, this SIP call action concerns whether SIP provisions satisfy section 110(a)(2)(A), which requires that each SIP "[shall] include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter."

As explained in the February 2013 proposal, the automatic and discretionary exemptions for emissions from sources during SSM events at issue in this action fail to meet this most basic SIP requirement and are also inconsistent with the enforcement requirements of the CAA. Similarly, the enforcement discretion provisions at issue in this action that have the effect of barring enforcement by EPA or citizens fail to meet this requirement for enforceable emission limitations by interfering with the enforcement structure of the CAA as established by Congress. The affirmative defense provisions at issue are similarly inconsistent with the requirement that SIPs provide for enforcement of the NAAQS and also contravene the statutory jurisdiction of courts to determine liability and to impose remedies for violations of SIP requirements. Each of these types of deficient SIP provisions is thus inconsistent with legal requirements of the CAA for SIP provisions. Contrary to the claims of many commenters, the EPA has authority and responsibility to assure that a state's SIP provisions in fact comply with fundamental legal requirements of the CAA as part of the obligation to ensure that SIPs protect the NAAQS.<sup>81</sup>

The *Train-Virginia* line of cases affirms the plain language of the Act—that in addition to providing generally for attainment and maintenance of the NAAQS, all state SIPs must satisfy the specific elements outlined in section 110(a)(2). Even setting aside that *Train* predated substantive revisions to the CAA that strengthened section 110(a)(2)(A) in ways relevant here,<sup>82</sup> the *Train* Court clearly stated that section 110(a)(2) imposes additional requirements for state submissions to be accepted, independent of the general obligation to meet the NAAQS. Many commenters on the February 2013 proposal selectively quoted or cited only portions of the following excerpt from *Train*, omitting or ignoring the portions emphasized here:

The Agency is plainly charged by the Act with the responsibility for setting the national ambient air standards. Just as plainly, however, it is relegated by the Act to a secondary role in the process of determining and enforcing the specific, source-by-source emission limitations which are necessary if the national standards it has set are to be met. Under § 110(a)(2), the Agency is required to approve a state plan which provides for the timely attainment and subsequent maintenance of ambient air standards, *and which also satisfies that section's other general requirements*. The Act gives the Agency no authority to question the wisdom of a State's choices of emission limitations *if they are part of a plan which satisfies the standards of § 110(a)(2)*. . . . Thus [i.e., provided the state plan satisfies the basic requirements of § 110(a)(2)], so long as the ultimate effect of a State's choice of emission limitations is compliance with the national standards for ambient air, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation.<sup>83</sup>

the NAAQS, as well as to meet other objectives such as protection of PSD increments and visibility.

<sup>82</sup> For example, to the extent the *Train* Court was construing section 110(a)(2)'s emission limitation provision, it is important to note that while that statutory section before the *Train* Court required approvable SIPs to include certain controls "necessary to insure compliance with [the] primary or secondary standards" (i.e., the NAAQS), see CAA of 1970, Pub. L. 91–604, section 4(a), 84 Stat. 1676, 1680 (December 31, 1970), that section now more broadly speaks of controls "necessary or appropriate to meet the applicable requirements of this chapter" (i.e., the CAA). Section 110(a)(2)(A) (emphasis added). Among the other relevant textual changes are the qualification that emission limitations and other controls be "enforceable," *id.*; a statutory definition of "emission limitation" that adds requirements not contemplated by *Train*, compare Section 302(k), with *Train*, 421 U.S. at 78; as well as a recharacterization of section 110(a)(2)'s emission limitation requirement from one bearing on whether "[t]he Administrator shall approve such plan," see Pub. L. 91–604, section 4(a), 84 Stat. at 1680, to a requirement expressly directed at what "[e]ach plan shall" include.

<sup>83</sup> 421 U.S. at 79 (emphasis added) (footnotes omitted).

<sup>76</sup> See, e.g., *Michigan v. EPA*, 213 F.3d 663, 687 (D.C. Cir. 2000).

<sup>77</sup> See 421 U.S. at 79.

<sup>78</sup> See 78 FR 12459 at 12468; Background Memorandum at 1–3.

<sup>79</sup> See *Virginia v. EPA*, 108 F.3d 1397, 1407 (D.C. Cir. 1997) (quoting *Train*, 421 U.S. at 79).

<sup>80</sup> Section 110(a)(2) (emphasis added); see *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1600 (2014) (holding that section 110(a)(2) "speaks without reservation" regarding what "components" a SIP "'shall' include"); H. Rept. 101–490, at 217 (calling the provisions of section 110(a)(2)(A) through (M) "the basic requirements of SIPs").

<sup>81</sup> The EPA notes that many of the specific SIP elements required in section 110(a)(2) are not themselves stated in terms of attainment and maintenance of the NAAQS. Instead, these requirements are part of the SIP structure that Congress deemed necessary to support implementation, maintenance and enforcement of

When read in its entirety, without omitting the portions italicized above, *Train* clearly does not stand for the proposition that SIPs must be judged exclusively on the basis of whether they will ensure attainment and maintenance of the NAAQS. To the contrary, the Court made clear that approvable SIP submissions must not only provide for attainment and maintenance of the NAAQS but must also satisfy section 110(a)(2)'s "other general requirements . . . ." <sup>84</sup> Furthermore, while states have great latitude to select emission limitations, *Train* explained that those emission limitations must nevertheless be "part of a plan which satisfies the standards of § 110(a)(2) . . . ." <sup>85</sup> Finally, the EPA notes that many commenters quoting the final sentence excerpted above typically excluded the word "Thus," which references the preceding sentence stating that SIPs must "satisfy [section 110(a)(2)]'s other general requirements." <sup>86</sup> By omitting the word "thus," and the passages concerning the obligation of states to comply with section 110(a)(2) and other obligations of the CAA, the commenters disregard the critical point that the EPA has the statutory responsibility to assure that state SIPs meet the specific requirements of the CAA, not merely that they provide for attainment of the NAAQS regardless of whether they meet other mandatory legal requirements. <sup>87</sup> In short, the *Train* Court did not hold that SIPs must merely provide for attainment of the NAAQS even under the 1970 Act, much less the text of the CAA applicable today. To the contrary, the U.S. Supreme Court indicated that approvable state plans were also required to meet other legal specifications of the CAA for SIPs such as those in section 110(a)(2) and that the EPA's responsibility is to determine whether they do so. The EPA's own

obligations with respect to evaluating SIPs under sections 110(k)(3), 110(l) and 193 continue to provide this authority and responsibility today.

After *Train*, one of the cases most frequently cited by commenters for its discussion of cooperative federalism was the D.C. Circuit's decision in *EME Homer City Generation, L.P. v. EPA*, a case since overturned by the U.S. Supreme Court. <sup>88</sup> In that case arising under section 110(a)(2), the D.C. Circuit vacated the EPA's Cross-State Air Pollution Rule for two reasons, one being related to statutory interpretation of section 110(a)(2)(D)(i), the other being "a second, entirely independent problem" based on the EPA's purported overstep of the federalism bar identified in the *Train-Virginia* line of cases. <sup>89</sup> After recounting a list of decisions that recognize the cooperative-federalism structure of the CAA, the D.C. Circuit concluded that even though states have the "primary responsibility" for implementing the NAAQS, in this case the states had no responsibility to address interstate transport until the EPA first quantified the obligations of the states. The dissent described the majority's application of the *Train-Virginia* cases as "a redesign of Congress's vision of cooperative federalism in implementing the CAA . . . ." <sup>90</sup> The commenters approvingly cited to the D.C. Circuit's *EME Homer City* decision, evidently to illustrate the importance of states' role under section 110. That states are given the first opportunity to develop a SIP that complies with section 110 is not in dispute. What is in dispute are the authority and the responsibility of the EPA to take action when states fail to comply with all of the requirements for SIP provisions under the CAA, whether that requirement is to address interstate transport or to meet other specific legal requirements of the Act applicable to SIP provisions.

The U.S. Supreme Court reversed the *EME Homer City* decision in June 2014, <sup>91</sup> rendering suspect the D.C. Circuit's interpretation of the *Train-Virginia* line of cases, as well as rendering suspect the commenters' even broader characterization of that interpretation as *per se* authorizing the states to create provisions such as the SSM exemptions and affirmative defenses at issue in this SIP call. The U.S. Supreme Court held that the

touchstone for identifying the division of responsibility between the EPA and the states is the text of section 110(a)(2) itself. <sup>92</sup> Although this SIP call involves different requirements of section 110(a)(2) than the one at issue in *EME Homer City*—there, the interstate transport obligations of 110(a)(2)(D)(i)(I)—the Court expressly held that "[n]othing in the Act differentiates the Good Neighbor Provision from the several other matters a State must address in its SIP." <sup>93</sup> After the U.S. Supreme Court's ruling, the EPA's role under section 110's cooperative-federalism framework—as the agency charged with reasonably interpreting the fundamental requirements of section 110(a)(2), and applying those reasonably interpreted requirements to state SIPs—cannot reasonably be in doubt. <sup>94</sup>

The touchstone of the cooperative-federalism concept outlined in the *Train-Virginia* line of cases is that, under the authority of section 110, the EPA may not legally or functionally require a state to adopt a specific control measure in its SIP in response to a SIP call. <sup>95</sup> On this point, the DC Circuit's opinion in *EME Homer City* was largely in line with *Train, Virginia*, and other DC Circuit cases. In that decision, the court described the *Train-Virginia* federalism bar as prohibiting the EPA "from using the SIP process to adopt specific control measures." <sup>96</sup> The *EME Homer City* court did not more broadly hold that section 110(a)(2) imposes no independent limits on state discretion

<sup>82</sup> *Id.* at 1600–01.

<sup>83</sup> *Id.* at 1601 (citing, *inter alia*, section 110(a)(2)).

<sup>84</sup> See *id.* at 1593 (citing *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984)). See, e.g., *Oklahoma v. EPA*, 723 F.3d 1201, 1208 (10th Cir. 2013), *cert. denied*, 134 S. Ct. 2662 (2014) (applying *Chevron* to uphold EPA's disapproval of a SIP for noncompliance with regional haze requirements in section 110(a)(2)(JJ)); *North Dakota v. EPA*, 730 F.3d 750 (8th Cir. 2013), *cert. denied*, 134 S. Ct. 2662 (2014) (applying *Chevron* to uphold EPA's disapproval of a SIP for noncompliance with interstate visibility requirements in section 110(a)(2)(D)(i)(II)); *Luminant Generation v. EPA*, 714 F.3d 841, 856 (5th Cir. 2013), *cert. denied*, 134 S. Ct. 387 (2013); *Mont. Sulphur & Chem. Co. v. United States EPA*, 666 F.3d 1174, 1180, 1189 (9th Cir. 2012), *cert. denied*, 133 S. Ct. 409 (2012) ("The Clean Air Act gives the EPA significant national oversight over air quality standards, to be exercised pursuant to statutory specifications, and provides EPA with regulatory discretion in key respects relevant to SIP calls and determinations about the attainment of the NAAQS"); *Mich. Dep't of Env'tl. Quality v. Browner*, 230 F.3d 181, 184–85 (6th Cir. 2000) ("Although states are given broad authority to design programs, the EPA has the final authority to determine whether a SIP meets the requirements of the CAA.").

<sup>85</sup> 78 FR 12459 at 12489 & nn.89–90.

<sup>86</sup> See *EME Homer City Generation, L.P. v. EPA*, 696 F.3d at 29 (citing *Michigan*, 213 F.3d at 687; *Virginia*, 108 F.3d at 1410) (emphasis added).

<sup>84</sup> See *id.* (emphasis added).

<sup>85</sup> See *id.* The EPA notes that section 110(a)(2) and other sections relevant to SIPs in fact contain numerous procedural and substantive requirements that air agencies must meet. Section 110(a) is not composed of a single sentence that directs states merely to attain the NAAQS; it is replete with legal requirements applicable to SIPs that help to assure that a SIP will successfully meet that objective.

<sup>86</sup> See *id.*

<sup>87</sup> As a related point, the EPA notes that commenters claiming that the proposed SIP call was a violation of cooperative federalism likewise typically did not address the existence or significance of sections 110(k), 110(l) and 193. All of these provisions indicate that the EPA has statutory authority and responsibility to approve or disapprove SIP submissions, based upon whether they meet applicable requirements of the CAA. The EPA fully explained its views concerning its authority and responsibility under these provisions in the February 2013 proposal. See 78 FR 12459 at 12471, 12477–78, 12483–89; Background Memorandum at 2–3.

<sup>88</sup> 696 F.3d 7, 29 (D.C. Cir. 2012) *rev'd*, 134 S. Ct. 1584 (2014).

<sup>89</sup> *Id.* at 28.

<sup>90</sup> *Id.* at 38 (Rogers, J., dissenting).

<sup>91</sup> See *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584 (2014).

by requiring the states to meet legal requirements for SIP provisions, or that the EPA is prohibited from either interpreting 110(a)(2)'s basic requirements or reviewing state SIPs for compliance with those requirements. Accordingly, the EPA believes that to the extent that the DC Circuit's *EME Homer City* decision is relevant to this action, the decision in fact supports the basic principle that the EPA has authority and responsibility to assure that states comply with legal requirements of the CAA applicable to SIP provisions.

This view of what cooperative federalism prohibits is consistent with *Train*, where the U.S. Supreme Court stated that the EPA "is relegated by the [1970] Act to a secondary role in the process of determining and enforcing the *specific, source-by-source emission limitations* which are necessary if the national standards it has set are to be met."<sup>97</sup> It is also consistent with the *Virginia* decision, where the DC Circuit held that the EPA cannot under section 110 functionally require states to "adopt[] particular control measures" in a SIP but must rather ensure that states have a meaningful choice among alternatives.<sup>98</sup> Moreover, it is consistent with the court's view in *Michigan v. EPA*,<sup>99</sup> a case involving a SIP call, in which the DC Circuit interpreted and applied those precedents:

Given the *Train* and *Virginia* precedent, the validity of the NOx budget program underlying the SIP call depends in part on whether the program in effect constitutes an EPA-imposed control measure or emission limitation triggering the *Train-Virginia* federalism bar. In other words, on whether the program constitutes an *impermissible source-specific means rather than a permissible end goal*. However, the program's validity also depends on whether EPA's budgets *allow the covered states real choice with regard to the control measure options available to them* to meet the budget requirements.<sup>100</sup>

Clearly, in this SIP call the EPA is leaving the states the freedom to correct the inappropriate provisions in any manner they wish as long as they comply with the constraints of section 110(a)(2).

Finally, this view is consistent with *Appalachian Power Co. v. EPA*, where the DC Circuit reiterated that *Virginia* "disapproved the EPA's plan to reject SIPs that did not incorporate *particular limits* upon emissions from new cars."<sup>101</sup> The specific controls discussed in these cases are quite different, both as a legal matter and functionally, from the statutory constraints on the states' exercise of discretion that the EPA is interpreting and applying in this action.<sup>102</sup>

As explained in the February 2013 proposal, in this action the EPA is not requiring states to adopt any particular emission limitation or to impose a specific control measure in a SIP provision; the EPA is merely directing the states to address the fundamental statutory requirements that all SIP provisions must meet.<sup>103</sup> This SIP call outlines the principles and framework for how states can revise the existing deficient SIP provisions to meet a permissible end goal<sup>104</sup>—compliance with the Act. In so doing, the EPA is merely acting pursuant to its supervisory role under the CAA's cooperative-federalism framework, to ensure that SIPs satisfy those broad requirements that section 110(a)(2) mandates SIPs "shall" satisfy. With respect to section 110(a)(2)(A), this means that a SIP must at least contain legitimate, enforceable emission limitations to the extent they are necessary or appropriate "to meet the applicable requirements" of the Act. SIPs cannot contain unbounded director's discretion provisions that functionally subvert the requirements of the CAA for approval and revision of SIP provisions. Likewise, SIPs cannot have enforcement discretion provisions or affirmative defense provisions that contravene the fundamental requirements concerning the enforcement of SIP provisions. Accordingly, the EPA believes that this SIP call fully accords with the federal-state partnership outlined in section 110, by providing the states meaningful latitude when developing SIP submissions, while "nonetheless subject[ing] the States to strict minimum compliances requirements' and giv[ing] EPA the authority to determine a state's compliance with those requirements."<sup>105</sup>

The EPA emphasizes that this action also allows states "real choice" concerning their SIP provisions, so long as the provisions are consistent with applicable requirements. For example, this SIP call does not establish any specific, source-by-source limitations. To the contrary, as described in section VII.A of this document, emission limitations meeting the requirements of section 110(a)(2)(A) may take a variety of forms. Under section 110(a)(2)(A), states are free to include in their SIPs whatever emission limitations they wish, provided the states comply with applicable legal requirements. Among those requirements are that an emission limitation in a SIP must be an "emission limitation" as defined in section 302(k) and that all controls—emission limitations and otherwise—must be sufficiently "enforceable" to ensure compliance with applicable CAA requirements. The SSM provisions at issue in this SIP call subvert both of these legal requirements.

3. Comments that the EPA should expand the rulemaking to include additional SIP provisions that the commenters consider deficient with respect to SSM issues.

*Comment:* Some commenters requested that the EPA expand its February 2013 proposed action to include additional SIP provisions that the commenters consider deficient with respect to SSM issues. Specifically, commenters identified additional SIP provisions in Wisconsin (a state not identified by the Petitioner) and New Hampshire (a state for which the Petitioner did specifically identify other SIP provisions).

One commenter argued that "[i]t would substantially ease the administrative burden on EPA as well on public commenters" and "ensure that companies in all states are treated equally" if the EPA were to include "all SIPs with faulty SSM provisions in [a] consolidated SIP call." Another commenter noted that "the interests of regulatory efficiency will be served" by adding additional SIP provisions to the SIP call because "all changes required by the policy underlying this rulemaking" to state SIPs would then be made at once.

*Response:* The EPA acknowledges the requests made by the commenters concerning additional SIP provisions that may be inconsistent with CAA

Cir. 2012), *cert. denied*, 133 S. Ct. 409 (2012) ("The Clean Air Act gives the EPA significant national oversight power over air quality standards, to be exercised pursuant to statutory specifications, and provides the EPA with regulatory discretion in key respects relevant to SIP calls and determinations about the attainment of NAAQS.").

<sup>97</sup> 421 U.S. at 79 (emphasis added).

<sup>98</sup> *Virginia v. EPA*, 108 F.3d 1397, 1415 (D.C. Cir. 1997) (holding that functionally, in that case, "EPA's alternative is no alternative at all"); see also *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1047 (D.C. Cir. 2001) (citing *Virginia*, 108 F.3d at 1406, 1410) ("We did not suggest [in *Virginia*] that under § 110 states may develop their plans free of extrinsic legal constraints. Indeed, SIP development . . . commonly involves decisionmaking subject to various legal constraints.").

<sup>99</sup> 213 F.3d 663 (D.C. Cir. 2000).

<sup>100</sup> *Id.* at 687 (emphasis added).

<sup>101</sup> 249 F.3d 1032, 1047 (D.C. Cir. 2001) (citing *Virginia*, 108 F.3d at 1410) (emphasis added).

<sup>102</sup> See *id.*

<sup>103</sup> 78 FR 12459 at 12489.

<sup>104</sup> See, e.g., *Michigan*, 213 F.3d at 687.

<sup>105</sup> *Michigan v. EPA*, 213 F.3d 663, 687 (D.C. Cir. 2000) (quoting *Union Elec. Co. v. EPA*, 427 U.S. 246, 256–57 (1976)); see *Mont. Sulphur & Chem. Co. v. United States EPA*, 666 F.3d 1174, 1181 (9th

requirements. The EPA also agrees with the points made by the commenters concerning the potential benefits of expanding the rulemaking to include evaluation of additional provisions. However, in the February 2013 proposal the EPA elected to review the specific SIP provisions identified by the Petitioner in the SIPs of only the 39 states (and jurisdictions) identified by the Petitioner to determine whether they were consistent with the CAA as interpreted in the EPA's SSM Policy as requested in the Petition.<sup>106</sup> Although there may be additional SIP provisions that are deficient, the EPA determined that it would first focus its review on the SIP provisions for which possible deficiencies had already been identified by the Petitioner.<sup>107</sup> Accordingly, the February 2013 proposal addressed only those states identified in the Petition, in order to use EPA and state resources most efficiently.

With respect to the specific additional SIP provisions identified by the commenters on the February 2013 proposal, the EPA also notes that it cannot take final action on any additional SSM-related SIP provisions without first providing an opportunity for public notice and comment with respect to those additional SIP provisions. The EPA agrees that an important objective of its action on the Petition is to provide complete, comprehensive and up-to-date guidance to all air agencies concerning SIP provisions that apply to emissions during SSM events. The EPA is endeavoring to do this by responding to the Petition fully and by updating its interpretation of the CAA in the SSM Policy to reflect the relevant statutory requirements and recent court decisions. All states should feel free to apply this revised guidance in reviewing their own SIP provisions and revising them as appropriate. The EPA may address other SSM-related provisions that may be inconsistent with EPA's SSM Policy and the CAA in a later separate notice-and-comment action(s). The EPA has authority to address those provisions separately.<sup>108</sup>

<sup>106</sup> February 2013 proposal, 78 FR 12459 (February 22, 2013).

<sup>107</sup> The SIP provisions for which the EPA proposed SIP calls in its February 2013 proposal were further limited to those for which the Petitioner specifically requested action, with three exceptions; the EPA proposed SIP calls for additional SIP provisions in Ohio, North Dakota and West Virginia (one each), for reasons explained in section IX of the February 2013 proposal.

<sup>108</sup> The EPA notes that it has received a separate petition for rulemaking requesting it to evaluate SIP provisions in the State of Wisconsin. The EPA is not taking action on that separate petition as part of this action but will take action on that petition in a future rulemaking.

The EPA notes that with respect to the issue of affirmative defenses in SIP provisions, the Agency determined that it was necessary to amend its February 2013 proposal to take into consideration a subsequent court decision concerning the legal basis for such provisions. As explained in the SNPR and also in section IV of this document, the DC Circuit in the *NRDC* case decided that the CAA precludes any affirmative defense provisions that would operate to limit a court's jurisdiction or discretion to determine the appropriate remedy in an enforcement action. Thus, the EPA issued the SNPR to address this development in the law. Because of recent EPA actions and court decisions on this subject, the Agency determined that it was important to address not only the affirmative defense provisions identified in the Petition but also affirmative defense provisions that the EPA independently identified in six states' SIPs.<sup>109</sup> The SNPR was explicitly limited to the narrow concern of affirmative defense provisions, which was one of the types of issued specifically identified by the Petitioner. The EPA issued the SNPR with the same intention as that with which it issued the February 2013 proposal—so that the final action would provide guidance that reflects the EPA's updated interpretation of the CAA and would respond to the Petitioner's request that "EPA find that all SIPs containing an SSM exemption or a provision that could be interpreted to affect EPA or citizen enforcement are substantially inadequate to comply with the requirements of the Clean Air Act and issue a call for each of the states with such a SIP to revise it in conformity with the requirements of the Act or otherwise remedy these defective SIPs."<sup>110</sup> The EPA included these six states' affirmative defense provisions in order to provide comprehensive guidance to all states concerning affirmative defense provisions in SIPs and to avoid confusion that may arise due to recent rulemakings and court decisions relevant to such provisions under the CAA.

<sup>109</sup> Of these six states in which the EPA independently identified affirmative defense provisions, two states (California and Texas) were not identified in the Petition. For another two of these states (New Mexico and Washington), the EPA had already reviewed other affirmative defense provisions specifically identified in the Petition and had already proposed SIP calls in the February 2013 proposal. For the other two states (South Carolina and West Virginia), the EPA had already reviewed and proposed SIP calls for provisions that were identified by the Petitioner but that did not include affirmative defenses.

<sup>110</sup> Petition at 14.

The SIP call promulgated by the EPA in this action applies only to the particular SIP provisions identified in this document, and the scope of the SIP call for each state is limited to those provisions. However, if states of their own accord wish to revise SIP provisions, beyond those identified in this SIP call, that they believe are inconsistent with the SSM Policy and the CAA, the EPA will review and act on those SIP revisions in accordance with CAA sections 110(k), 110(l) and 193.

4. Comments that the EPA should create regulatory text in 40 CFR part 51 to forbid SSM exemptions in SIP provisions if the CAA precludes them.

*Comment:* Commenters argued that the EPA, before issuing a SIP call requiring states to revise SIP provisions containing exemptions for emissions during SSM events, should first have promulgated specific regulations articulating that such exemptions are precluded by the CAA. According to commenters, taking this approach would have given states more certainty and clarity and provided states with more time to develop SIP revisions consistent with those regulatory requirements. Commenters also asserted that it is not appropriate for the EPA to proceed with a SIP call to states without prior rulemaking to create regulatory provisions explicitly prohibiting SSM exemptions in SIPs, given that the Agency has previously approved the SIP provisions at issue.

*Response:* The EPA disagrees with the commenters' argument that the Agency must first promulgate regulations to make clear that exemptions for emissions during SSM events are not permissible in SIPs, prior to issuing this SIP call. The EPA likewise disagrees with the implication that its authority to promulgate a SIP call is restricted only to those issues for which there is specifically applicable regulatory text, as opposed to requirements related to statutory provisions, court decisions or other legal or factual bases for a determination that an existing SIP provision is substantially inadequate to meet CAA requirements. The EPA disagrees with the commenters for several reasons.

First, the CAA does not impose a general obligation upon the Agency to promulgate regulations applicable to all SIP requirements. Although the EPA has elected to promulgate regulations to address a broad variety of issues relevant to SIPs,<sup>111</sup> the Agency is not obligated to promulgate regulations

<sup>111</sup> See, generally, 40 CFR part 51 (including regulations applicable to many aspects of SIPs).

unless there is a specific statutory mandate that it do so.<sup>112</sup> In addition, the EPA has authority under section 301 to promulgate such regulations as it deems necessary to implement the CAA (e.g., to fill statutory gaps left by Congress for the EPA to fill or to clarify ambiguous statutory language). With respect to SIP requirements, however, the EPA has elected to promulgate regulations or to issue guidance to states to address different requirements, as appropriate.<sup>113</sup> In short, there is no specific statutory requirement that the EPA promulgate regulations with respect to the types of deficiencies in SIP provisions at issue in this action prior to issuing a SIP call.

Second, the EPA has historically elected to address the key issues relevant to this SIP call action in guidance. Through a series of guidance documents, issued in 1982, 1983, 1999 and 2001, the EPA has previously explained its interpretations of the CAA with respect to SIP provisions that contain automatic SSM exemptions, discretionary SSM exemptions, the exercise of enforcement discretion for SSM events and affirmative defenses for SSM events. Starting in the 1982 SSM Guidance, the EPA explicitly acknowledged that it had previously approved some SIP provisions related to emissions during SSM events that it should not have, because the provisions were inconsistent with requirements for SIPs. In addition, the EPA has in rulemakings applied its interpretation of the CAA with respect to issues such as exemptions for emissions during SSM events, and these actions have been approved by courts.<sup>114</sup> Under these circumstances, the EPA does not agree that promulgation of generally applicable regulations was necessary to put states on notice of the Agency's interpretation of the CAA with respect

to these issues, prior to issuance of a SIP call.

Finally, the EPA's authority under section 110(k)(5) is not limited, expressly or otherwise, solely to inadequacies related to regulatory requirements. To the contrary, section 110(k)(5) refers broadly to attainment and maintenance of the NAAQS, adequate mitigation of interstate transport and compliance with "any requirement of" the CAA. In addition, section 110(k)(5) specifically contemplates situations such as this one, "whenever" the EPA finds previously approved SIP provisions to be deficient. Nothing in the CAA requires the EPA to conduct a separate rulemaking clarifying its interpretation of the CAA prior to issuance of this SIP call. For the types of deficiencies at issue in this action, the EPA believes that the statutory requirements of the CAA itself and recent court decisions concerning those statutory provisions provide sufficient basis for this SIP call.

For the foregoing reasons, the EPA disagrees that before requiring states to revise SIPs that contain provisions with SSM exemptions, the EPA first must promulgate regulations explicitly stating that such exemptions are impermissible under the CAA. In addition, the EPA notes that although it is not promulgating generally applicable regulations in this action, it is nonetheless revising its guidance in the SSM Policy through rulemaking and has thereby provided states and other parties the opportunity to comment on the Agency's interpretation of the CAA with respect to this issue.

5. Comments that the EPA did not provide a sufficiently long comment period on the proposal in general or as contemplated in Executive Order 13563.

*Comment:* A number of commenters argued that the comment period provided by the EPA for the February 2013 proposal was "at odds with" Executive Order 13563. The commenters alleged that the comment period was "unconscionably short," even so short as to be "arbitrary and capricious" because, in order to provide comments, "impacted States and industries must perform the data collection and analysis necessary to evaluate the need for the proposed rule and its impacts." Further, the commenters alleged, the "EPA's failure and refusal to perform any technical analyses of the feasibility of source operations after the elimination of SSM provisions or the likely capital and operating costs of additional control equipment required to meet numeric standards during all operational periods has denied the States, the affected

parties, and the public a meaningful opportunity to evaluate and comment upon the proposed rule." Finally, one commenter asserted that Executive Order 13563 requires that "[b]efore issuing a notice of proposed rulemaking, each agency, where feasible and appropriate, shall seek the views of those who are likely to be affected."<sup>115</sup> The commenter claimed that because the EPA allegedly "failed to seek the views of those who are likely to be affected and those who are potentially subject to such rulemaking, EPA's actions ignore the requirements of the Executive Order."

*Response:* The EPA disagrees that it has not provided sufficiently long comment periods to address the specific issues relevant to this action. As described in section IV.D.1 of this document, the EPA has followed all steps of a notice-and-comment rulemaking, as governed by applicable statutes, regulations and executive orders, including a robust process for public participation. When the EPA initially proposed to take action on the Petition, in February 2013, it simultaneously solicited public comment on all aspects of its proposed response to the issues in the Petition and in particular on its proposed action with respect to each of the specific existing SIP provisions identified by the Petitioner as inconsistent with the requirements of the CAA. In response to requests, the EPA extended the public comment period for this proposal to May 13, 2013, which is 80 days from the date the proposed rulemaking was published in the **Federal Register** and 89 days from the date the proposed rulemaking was posted on the EPA's Web site.<sup>116</sup> The EPA deemed this extension appropriate because of the issues raised in the February 2013 proposal. The EPA also held a public hearing on March 12, 2013. In response to this proposed action, the EPA received approximately 69,000 public comments, including over 50 comment letters from state and local governments, over 150 comment letters from industry commenters, over 25 comment letters from public interest groups and many thousands of comments from individual commenters. Many of these comment

<sup>112</sup> See, e.g., CAA section 169A(a)(4) (requiring the EPA to promulgate regulations governing the requirements relevant to SIP requirements for purposes of regional haze reduction).

<sup>113</sup> See, e.g., "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 57 FR 13498 (April 16, 1992) (the "General Preamble" that continues to provide guidance recommendations to states for certain attainment plan requirements for various NAAQS); 40 CFR part 51, subpart Z (imposing regulatory requirements for certain attainment plan requirements for the 1997 PM<sub>2.5</sub> NAAQS).

<sup>114</sup> See, e.g., *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (upholding the "NO<sub>x</sub> SIP Call" to states requiring revisions to previously approved SIPs with respect to ozone transport and section 110(a)(2)(D)(i)(I)); "Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision," 74 FR 21639 (April 18, 2011) (the EPA issued a SIP call to rectify SIP provisions dating back to 1980).

<sup>115</sup> See E.O. 13563 section 2(c).

<sup>116</sup> See "State Implementation Plans: Response to Petition for Rulemaking; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction; Notice of extension of public comment period," 78 FR 20855 (April 8, 2013), in the rulemaking docket at EPA-HQ-OAR-2012-0322-0126.

letters were substantial and covered numerous issues.

Similarly, when the EPA ascertained that it was necessary to revise its proposed action on the Petition with respect to affirmative defenses in SIP provisions, the Agency issued the SNPR. In that supplemental proposal, in September 2014, the EPA fully explained the issues and took comment on the questions related to whether affirmative defense provisions are consistent with CAA requirements concerning the jurisdiction of courts in enforcement actions, and thus whether such provisions are consistent with fundamental CAA requirements for SIP provisions. The EPA provided a public comment period ending November 6, 2014, which is 50 days from the date the SNPR was published in the **Federal Register** and 62 days from the date the SNPR was posted on the EPA's Web site. The EPA believes that the comment period was sufficient given that the subject of the SNPR was limited to the narrow issue of whether affirmative defense provisions are consistent with CAA requirements. The EPA also held a public hearing on the SNPR on October 7, 2014 on the specific topic of the legitimacy of affirmative defense provisions in SIPs. In response to the SNPR, the EPA received over 20,000 public comments, including at least 9 comment letters from states and local governments, over 40 comment letters from industry commenters, at least 6 comment letters from public interest groups, and many thousands of comments from individual commenters.

Executive Order 13563 provides that each agency should "afford the public a meaningful opportunity to comment through the Internet on any proposed regulation, with a comment period that should generally be *at least 60 days*."<sup>117</sup> The length of the Agency's comment period for the original proposed rulemaking well-exceeded this standard. The EPA also facilitated comment on the action by providing a full and detailed evaluation of the relevant issues in the February 2013 proposal, the background memorandum supporting the proposal and the SNPR.

When considering whether an agency has provided for adequate public input, reviewing courts are generally most concerned with the overall adequacy of the opportunity to comment. This, in turn, typically depends on steps the agency took to notify the public of information that is important to this action. Comment period length is only one factor that courts consider in this analysis, and courts have regularly

found that comment periods of significantly shorter length than the 80 days provided here on the February 2013 proposal were reasonable in various circumstances.<sup>118</sup> Given the nature of the issues raised by the Petition, the EPA believes that the comment period was appropriate and sufficient to allow for full analysis of the issues and preparation of comments. The number of comments received on the February 2013 proposal, and the breadth of issues and level of detail provided by the commenters, both supportive and adverse, serve to support the EPA's view on this point.

The EPA also disagrees with respect to the claims of commenters that the comment period was insufficient because the EPA should provide time for commenters to evaluate and analyze fully the possible ultimate impacts of the SIP call upon particular sources, to determine what type of SIP revision by a state is appropriate in response to a SIP call, or to ascertain what specific new emission limitation or control measure requirement states should impose upon sources in such a future SIP revision. The EPA's action on the Petition concerning specific existing SIP provisions is focused upon whether those existing provisions meet fundamental legal requirements of the CAA for SIP provisions. The EPA is not required to provide a comment period for this action that allows states actually to determine which of the potential forms of SIP revision they may wish to undertake, or to complete those SIP revisions, as part of this rulemaking. The subsequent state and EPA rulemaking processes on the SIP revisions in response to this SIP call action will provide time for further evaluation of the issues raised by commenters.

As explained in the February 2013 proposal, the EPA does not interpret section 110(k)(5) to require it to "prove causation" concerning what precise impacts illegal SIP provisions are having on CAA requirements, such as attainment and maintenance of the NAAQS and enforcement of SIP

requirements.<sup>119</sup> Nor is the EPA directing states to adopt a specific control measure in response to the SIP call; the decision as to how to revise the affected SIP provisions in response to the SIP call is left to the states. The state's response to the SIP call will be developed in future rulemaking actions at both the state and federal level which will similarly be subject to full notice-and-comment proceedings. In electing to proceed by SIP call under section 110(k)(5), rather than by error correction under section 110(k)(6), the EPA is providing affected states with the maximum time permitted by statute to determine how best to revise their SIP provisions, consistent with CAA requirements. During this process, the commenters and other stakeholders will have the opportunity to participate in the development of the SIP revision, including decisions such as how the state elects to revise the deficient SIP provisions (e.g., merely to eliminate an exemption for SSM events or to impose an alternative emission limitation applicable to startup and shutdown).

The questions posed by the commenters about what specific emission limitations should apply during startup and shutdown events, what control measures will meet applicable CAA legal requirements, what control measures will be effective and cost-effective to meet applicable legal standards and other similar questions are exactly the sorts of issues that states will evaluate in the process of revising affected SIP provisions. Moreover, these are the same sorts of questions that the EPA will be evaluating when it reviews state SIP submissions made in response to the SIP call. The EPA is not required, by Executive Order 13563 or otherwise, to provide a comment period that would allow for all future actions in response to the SIP call to occur before issuing the SIP call. The EPA anticipates that the commenters will be able to participate actively in the actions that will happen in due course in response to this SIP call.

Finally, the EPA disagrees that it did not adequately seek the views of potentially affected entities prior to issuance of the February 2013 proposal. The EPA alerted the public to the existence of the Petition by soliciting comment on the settlement agreement that obligated the Agency to act upon it, in accordance with CAA section 113(g). Subsequently, EPA personnel communicated about the Petition and the issues it raised in various standing

<sup>118</sup> See, e.g., *Omnipoint Corp. v. Fed. Comm'n*, 78 F.3d 620, 629 (D.C. Cir. 1996) (approving a 7-day comment period); *Florida Power & Light Co. v. United States*, 846 F.2d 765, 772 (D.C. Cir. 1988) (holding a 15-day comment period to not be unreasonable under the governing circumstances); *Conn. Light & Power Co. v. NRC*, 673 F.2d 525, 534 (D.C. Cir. 1982) (holding 30 days not unreasonable in the particular situation); *Am. Farm Bureau Fed'n v. United States EPA*, 984 F.Supp.2d 289, 333 (M.D. Pa. 2013) (holding that a 45-day comment period was adequate despite "technical complexities of the regulations and issues raised").

<sup>119</sup> This issue is addressed in more detail in section VIII.A.1 of this document.

<sup>117</sup> See E.O. 13563 section 2(b) (emphasis added).



meetings and conference calls with states and organizations that represent state and local air regulators.

6. Comments that this action is not “nationally applicable” for purposes of judicial review.

*Comment:* Commenters alleged that the SSM SIP call is not “nationally applicable” for purposes of judicial review. One state commenter cited *ATK Launch Systems* for the proposition that the specific language of the regulation being challenged indicates whether an action is nationally or locally/regionally applicable. Because a SIP provision subject to this SIP call is state-specific, the commenter argued, it is of concern only for that state and thus the SIP call is a locally applicable action.<sup>120</sup>

*Response:* The EPA disagrees with the commenter that the SIP call is not a nationally applicable action. In this action, the EPA is responding to a Petition that requires the Agency to reevaluate its interpretations of the CAA in the SSM Policy that apply to SIP provisions for all states across the nation. In so doing, the EPA is reiterating its interpretations with respect to some issues (e.g., that SIP provisions cannot include exemptions for emissions during SSM events) and revising its interpretations with respect to others (e.g., so that SIP provisions cannot include affirmative defenses for emissions during SSM events). In addition to reiterating and updating its interpretations with respect to SIP provisions in general, the EPA is also applying its interpretations to specific existing provisions in the SIPs of 41 states. Through this action the EPA is establishing a national policy that it is applying to states across the nation. As with many nationally applicable rulemakings, it is true that this action also has local or regional effects in the sense that EPA is requiring 36 individual states to submit revisions to their SIPs. However, through this action the EPA is applying the same legal and policy interpretation to each of these states. Thus, the underlying basis for the SIP call has “nationwide scope and effect” within the meaning of section 307(b)(1) as explained by the EPA in the February 2013 proposal. A key purpose of the CAA in channeling to the D.C. Circuit challenges to EPA rulemakings that have nationwide scope and effect is to minimize instances where the same legal and policy basis for decisions may be challenged in multiple courts of appeals, which instances would potentially lead to inconsistent judicial holdings and a patchwork application of

the CAA across the country. We note that in the *ATK Launch* case cited by commenters, the U.S. Court of Appeals for the Tenth Circuit (Tenth Circuit) in fact transferred to the D.C. Circuit challenges to the designation of two areas in Utah that were part of a national rulemaking designating areas across the U.S. for the PM<sub>2.5</sub> NAAQS. In transferring the challenges to the D.C. Circuit, the Tenth Circuit noted that the designations rulemaking “reached areas coast to coast and beyond” and that the EPA had applied a uniform process and standard.<sup>121</sup> Significantly, in support of its decision to transfer the challenges to the D.C. Circuit, the Tenth Circuit stated: “The challenge here is more akin to challenges to so-called ‘SIP Calls,’ which the Fourth and Fifth Circuits have transferred to the D.C. Circuit . . . . Although each of the SIP Call petitions challenged the revision requirement as to a particular state, the SIP Call on its face applied the same standard to every state and mandated revisions based on that standard to states with non-conforming SIPs in multiple regions of the country.”<sup>122</sup>

7. Comments that the EPA was obligated to address and justify the potential costs of the action and failed to do so correctly.

*Comment:* Several commenters alleged that the EPA has failed to address the costs associated with this rulemaking action appropriately and consistent with legal requirements. In particular, commenters alleged that the EPA is required to address costs of various impacts of this SIP call, including the costs that may be involved in changes to emissions controls or operation at sources and the costs to states to revise permits and revise SIPs in response to the SIP call.

Commenters also alleged that the EPA has failed to comply with Executive Order 12291, Executive Order 12866, Executive Order 13211, the Regulatory Flexibility Act and the Unfunded Mandates Reform Act.

One commenter supported the EPA’s approach with respect to cost.

*Response:* The EPA disagrees with commenters concerning its compliance with the Executive Orders and statutes applicable to agency rulemaking in general. The EPA maintains that it did properly consider the costs imposed by this SIP call action, as required by law. As explained in the February 2013 proposal, to the extent that the EPA is issuing a SIP call to a state under section 110(k)(5), the Agency is only requiring a state to revise its SIP to

comply with existing requirements of the CAA. The EPA’s action, therefore, would leave to states the choice of how to revise the SIP provision in question to make it consistent with CAA requirements and of determining, among other things, which of several lawful approaches to the treatment of excess emissions during SSM events will be applied to particular sources. Therefore, the EPA considers the only direct costs of this rulemaking action to be those to states associated with preparation and submission of a SIP revision by those states for which the EPA issues a SIP call.<sup>123</sup> Examples of such costs could include development of a state rule, conducting notice and public hearing and other costs incurred in connection with a SIP submission. The EPA notes that it did not consider the costs of potential revisions to operating permits for sources to be a direct cost imposed by this action, because, as stated elsewhere in this document, the Agency anticipates that states will elect to delay any necessary revision of permits until the permits need to be reissued in the ordinary course after revision of the underlying SIP provisions.

The commenters also incorrectly claim that the EPA failed to comply with Executive Order 12291. That Executive Order was explicitly revoked by Executive Order 12866, which was signed by President Clinton on September 30, 1993.

The commenters are likewise incorrect that the EPA did not comply with Executive Order 12866. This action was not deemed “significant” on a basis of the cost it will impose as the commenters claimed. The EPA has already concluded that this action will not result in a rule that may have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, of state, local or tribal governments or communities. The EPA instead determined that, as noted in both the February 2013 proposal (section X.A) and the SNPR (section VIII.A), this action is a “significant regulatory action” as that term is defined in Executive Order 12866 because it raises novel legal or policy issues. Accordingly, it was on that basis that the EPA submitted the February 2013 proposal, the SNPR and the final action to the Office of Management and Budget (OMB) for review. Changes made

<sup>120</sup> See *ATK Launch Systems, Inc. v. EPA*, 651 F.3d 1194 (10th Cir. 2011).

<sup>121</sup> *Id.*, 651 F.3d at 1197.

<sup>122</sup> *Id.*, 651 F.3d at 1199.

<sup>123</sup> See Memorandum, “Estimate of Potential Direct Costs of SSM SIP Calls to Air Agencies,” April 28, 2015, in the rulemaking docket.

in response to OMB review are documented in the docket for this action. The EPA believes it has fully complied with Executive Order 12866.

As stated in the February 2013 proposal, the EPA does not believe this is a “significant energy action” as defined in Executive Order 13211, because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. As described earlier, this action merely requires that states revise their SIPs to comply with existing requirements of the CAA. States have the choice of how to revise the deficient SIP provisions that are the subject of this action; there are a variety of different ways that states may treat the issue of excess emissions during SSM events consistent with CAA requirements for SIPs. This action merely prescribes the EPA’s action for states regarding their obligations for SIPs under the CAA, and therefore it is not a “significant energy action” under Executive Order 13211.

With respect to the Regulatory Flexibility Act (RFA), as the EPA explained in the February 2013 proposal, courts have interpreted the RFA to require a regulatory flexibility analysis only when small entities will be subject to the requirements of the rule.<sup>124</sup> This action will not impose any requirements on small entities. Instead, it merely reiterates the EPA’s interpretation of the statutory requirements of the CAA. To the extent that the EPA is issuing a SIP call to a state under section 110(k)(5), the EPA is only requiring the state to revise its SIP to comply with existing requirements of the CAA. In turn, the state will determine whether and how to regulate specific sources, including any small entities, through the process of deciding how to revise a deficient SIP provision. The EPA’s action itself will not have a significant economic impact on a substantial number of small entities.

As the EPA explained in the February 2013 proposal, this action is not subject to the requirements of the Unfunded Mandates Reform Act (UMRA) because it does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any one year. With respect to the impacts on sources, the EPA’s action in this rulemaking is not directly imposing costs on any sources. The EPA’s action is merely directing states to revise their SIPs in order to bring them into compliance with the

legal requirements of the CAA for SIP provisions. In response to the SIP call, the states will determine how best to revise their deficient SIP provisions in order to meet CAA requirements. It is thus the states that will make the decisions concerning how best to revise their SIP provisions and will determine what impacts will ultimately apply to sources as a result of those revisions.

8. Comments that the EPA’s action violates procedural requirements of the CAA or the APA, because the EPA is acting on the Petition, updating its SSM Policy and applying its interpretation of the CAA to specific SIP provisions in one action.

*Comment:* Commenters argued that the EPA’s proposed action on the Petition, which includes simultaneous updating of its interpretations of the CAA in the SSM Policy and application of those revised interpretations to existing SIP provisions, is in violation of procedural requirements of the CAA and the APA. According to the commenters, the EPA’s combination of actions is a “subterfuge” to avoid notice and comment on the proposed actions in the February 2013 proposal. The commenters claimed that the EPA could only take these actions through two or more separate rulemaking actions. By proposing to update its interpretation of the CAA in the SSM Policy through notice-and-comment rulemaking and proposing to apply its interpretation of the CAA through notice-and-comment rulemaking to existing SIP provisions, the commenters claimed, the EPA has prejudged the outcome of this action.

*Response:* The EPA does not agree that it was required to take this action in multiple separate rulemakings as claimed by the commenters. First, the EPA notes, the fact that the commenters’ allegation—that the Agency failed to proceed by notice and comment—was raised in a comment letter submitted on the February 2013 proposal belies the commenters’ overarching procedural argument that the EPA is failing to subject its interpretations of the CAA to notice-and-comment rulemaking. Second, although the EPA could elect to undertake two or more separate notice-and-comment rulemakings in order to answer the Petition, to revise its interpretations of the CAA in the SSM Policy and to evaluate existing provisions in state SIPs against the requirements of the CAA, there is no requirement for the Agency to do so. To the contrary, the EPA believes that it is preferable to take these interrelated actions in a combined rulemaking process. This combined approach allows the EPA to explain its actions comprehensively and in their larger

context. The combined approach allows commenters to participate more meaningfully by considering together the proposed action on the Petition, the proposed interpretations of the CAA in the SSM Policy and the proposed application of the EPA’s interpretation to specific SIP provisions. By addressing the interrelated actions together and comprehensively, the EPA is striving to be efficient with the resources of both regulators and regulated parties. Most importantly, by combining these actions the EPA is being responsive to the need for prompt evaluation of the SIP provisions at issue and for correction of those found to be legally deficient in a timely fashion. Far from “prejudging” the issues, the EPA explicitly sought comment on all aspects of the February 2013 proposal and sought additional comment on issues related to affirmative defense provisions in the SNPR. Naturally, the EPA’s proposal and supplemental proposal reflected its best judgments on the proper interpretations of the CAA and application of those interpretations to the issues raised by the Petition, as of the time of the February 2013 proposal and the SNPR.

## **VI. Final Action in Response To Request That the EPA Limit SIP Approval to the Text of State Regulations and Not Rely Upon Additional Interpretive Letters From the State**

### *A. What the Petitioner Requested*

The Petitioner’s third request was that when the EPA evaluates SIP revisions submitted by a state, the EPA should require “all terms, conditions, limitations and interpretations of the various SSM provisions to be reflected in the unambiguous language of the SIPs themselves.”<sup>125</sup> The Petitioner expressed concern that the EPA has previously approved SIP submissions with provisions that “by their plain terms” do not appear to comply with the EPA’s interpretation of CAA requirements embodied in the SSM Policy and has approved those SIP submissions in reliance on separate “letters of interpretation” from the state that construe the provisions of the SIP submission itself to be consistent with the SSM Policy.<sup>126</sup> Because of this reliance on interpretive letters, the Petitioner argued that “such constructions are not necessarily apparent from the text of the provisions and their enforceability may be difficult and unnecessarily complex and

<sup>124</sup> See, e.g., *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000); *Mid-Tex Elec. Co-op, Inc. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985).

<sup>125</sup> Petition at 16.

<sup>126</sup> Petition at 14.



inefficient.”<sup>127</sup> The Petitioner cited various past rulemaking actions to illustrate how EPA approval of ambiguous SIP provisions can inject unintended confusion for regulated entities, regulators, and the public in the future, especially in the context of future enforcement actions. Accordingly, the Petitioner requested that the EPA discontinue reliance upon interpretive letters when approving state SIP submissions, regardless of the circumstances. A more detailed explanation of the Petitioner’s arguments appears in the 2013 February proposal.<sup>128</sup>

#### *B. What the EPA Proposed*

In the February 2013 proposal, the EPA proposed to deny the Petition with respect to this issue. The EPA explained the basis for this proposed disapproval in detail, including a discussion of the statutory provisions that the Agency interprets to permit this approach, an explanation of why this approach makes sense from both a practical and an efficiency perspective under some circumstances, and a careful explanation of the process by which EPA intends to rely on interpretive letters in order to assure that the concerns of the Petitioner with respect to potential future disputes about the meaning of SIP provisions should be alleviated.

#### *C. What is being finalized in this action?*

The EPA is taking final action to deny the Petition on this request. The EPA believes that it has statutory authority to rely on interpretive letters to resolve ambiguity in a SIP submission under appropriate circumstances and so long as the state and the EPA follow an appropriate process to assure that the rulemaking record properly reflects this reliance. To avoid any misunderstanding about the reasons for this denial or any misunderstandings about the circumstances under which, or the proper process by which, the EPA intends to rely interpretive letters, the Agency is repeating its views in this final action in detail.

As stated in the February 2013 proposal, the EPA agrees with the core principle advocated by the Petitioner, *i.e.*, that the language of regulations in SIPs that pertain to SSM events should be clear and unambiguous. This is necessary as a legal matter but also as a matter of fairness to all parties, including the regulated entities, the regulators, and the public. In some

cases, the lack of clarity may be so significant that amending the state’s regulation may be warranted to eliminate the potential for confusion or misunderstanding about applicable legal requirements that could interfere with compliance or enforcement. Indeed, as noted by the Petitioner, the EPA has requested that states clarify ambiguous SIP provisions when the EPA has subsequently determined that to be necessary.<sup>129</sup>

However, the EPA believes that the use of interpretive letters to clarify ambiguity or perceived ambiguity in the provisions in a SIP submission is a permissible, and sometimes necessary, approach under the CAA. Used correctly, and with adequate documentation in the **Federal Register** and the docket for the underlying rulemaking action, reliance on interpretive letters can serve a useful purpose and still meet the enforceability concerns of the Petitioner. So long as the interpretive letters and the EPA’s reliance on them is properly explained and documented, regulated entities, regulators, and the public can readily ascertain the existence of interpretive letters relied upon in the EPA’s approval that would be useful to resolve any perceived ambiguity. By virtue of being part of the stated basis for the EPA’s approval of that provision in a SIP submission, the interpretive letters necessarily establish the correct interpretation of any arguably ambiguous SIP provision. In other words, the rulemaking record should reflect the shared state and EPA understanding of the meaning of a provision at issue at the time of the approval, which can then be referenced should any question about the provision arise in a future enforcement action.

In addition, reliance on interpretive letters to address concerns about perceived ambiguity can often be the most efficient and timely way to resolve concerns about the correct meaning of regulatory provisions. Both air agencies and the EPA are required to follow time- and resource-intensive administrative processes in order to develop and evaluate SIP submissions. It is reasonable for the EPA to exercise its discretion to use interpretive letters to clarify concerns about the meaning of regulatory provisions, rather than to require air agencies to reinitiate a complete administrative process merely to resolve perceived ambiguity in a

provision in a SIP submission.<sup>130</sup> In particular, the EPA considers this an appropriate approach where reliance on such an interpretive letter allows the air agency and the EPA to put into place SIP provisions that are necessary to meet important CAA objectives and for which unnecessary delay would be counterproductive. For example, where an air agency is adopting emission limitations for purposes of attaining the NAAQS in an area, a timely letter from the air agency clarifying that an enforcement discretion provision is applicable only to air agency enforcement personnel and has no bearing on enforcement by the EPA or the public could help to assure that the provision is approved into the SIP promptly and thus allow the area to reach attainment more expeditiously than requiring the air agency to undertake a time-consuming administrative process to make a minor clarifying change in the regulatory text.

There are multiple reasons why the EPA does not agree with the Petitioner with respect to the alleged inadequacy of using interpretive letters to clarify specific ambiguities in a SIP submission and the SIP provisions that may ultimately result from approval of such a submission, provided this process is done correctly. First, under section 107(a), the CAA gives air agencies both the authority and the primary responsibility to develop SIPs that meet applicable statutory and regulatory requirements. However, the CAA generally does not specify exactly how air agencies are to meet the requirements substantively, nor does the CAA specify that air agencies must use specific regulatory terminology, phraseology, or format, in provisions submitted in a SIP submission. Air agencies each have their own requirements and practices with respect to rulemaking, making flexibility respecting terminology on the EPA’s part appropriate, so long as CAA requirements are met.

As a prime example relevant to the SSM issue, CAA section 110(a)(2)(A) requires that a state’s SIP shall include “enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights) as well as schedules and

<sup>130</sup> CAA section 110(k) directs the EPA to act on SIP submissions and to approve those that meet statutory and regulatory requirements. Implicit in this authority is the discretion, through appropriate notice-and-comment rulemaking, to determine whether a given SIP provision meets such requirements, in reliance on the information that the EPA considers relevant for this purpose.

<sup>127</sup> Petition at 15.

<sup>128</sup> See February 2013 proposal, 78 FR 12459 at 12474 (February 22, 2013).

<sup>129</sup> See, e.g., “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision,” 76 FR 21639 at 21648 (April 18, 2011).

timetables for compliance as may be necessary or appropriate to meet the applicable requirements of” the CAA. Section 302(k) of the CAA further defines the term “emission limitation” in important respects but nevertheless leaves room for variations of approach, stating that it is “a requirement established by the State or Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under [the CAA].”

Even this most basic requirement of SIPs, the inclusion of enforceable “emission limitations,” allows air agencies discretion in how to structure or word the emission limitations, so long as the provisions meet fundamental legal requirements of the CAA.<sup>131</sup> Thus, by the explicit terms of the statute and by design, air agencies generally have considerable discretion in how they elect to structure or word their state regulations submitted to meet CAA requirements in a SIP.

Second, under CAA section 110(k), the EPA has both the authority and the responsibility to assess whether a SIP submission meets applicable CAA and regulatory requirements. Given that air agencies have authority and discretion to structure or word SIP provisions as they think most appropriate, so long as the SIP provisions meet CAA and regulatory requirements, the EPA’s role is to evaluate whether those provisions in fact meet those legal requirements.<sup>132</sup> Necessarily, this process entails the exercise of judgment concerning the specific text of regulations, with regard both to content and to clarity. Because actions on SIP submissions are subject to notice-and-comment rulemaking, there is also the opportunity for other parties to identify SIP provisions that they consider problematic and to bring to the EPA’s attention any concerns

about ambiguity in the meaning of the SIP provisions under evaluation.

Third, careful review of regulatory provisions in a SIP submission can reveal areas of potential ambiguity. It is essential, however, that regulations are sufficiently clear that regulated entities, regulators and the public can all understand the SIP requirements. Where the EPA perceives ambiguity in draft SIP submissions, it endeavors to resolve those ambiguities through interactions with the relevant air agency even in advance of the SIP submission. On occasion, however, there may still remain areas of regulatory ambiguity in a SIP submission’s provisions that the EPA identifies, either independently or as a result of public comments on a proposed action, for which resolution is both appropriate and necessary as part of the rulemaking action.

In such circumstances, the ambiguity may be so significant as to require the air agency to revise the regulatory text in its SIP submission in order to resolve the concern. At other times, however, the EPA may determine that with adequate explanation from the state, the provision is sufficiently clear and complies with applicable CAA and associated regulatory requirements. In some instances, the air agency may supply the explanation necessary to resolve any potential ambiguity in a SIP submission by sending an official letter from the appropriate authority. When the EPA bases its approval of a SIP submission in reliance on the air agency’s official interpretation of the provision, that reading is explicitly incorporated into the EPA’s action and is memorialized as the proper intended reading of the provision. In other words, the state and the EPA will have a shared understanding of the proper interpretation of the provision, and that interpretation will provide the basis for the approval of that provision into the SIP. The interpretation will also be clearly identified and presented for the public and regulated entities in the **Federal Register** document approving the SIP submission.

For example, in the Knoxville redesignation action that the Petitioner noted in the Petition, the EPA took careful steps to ensure that the perceived ambiguity raised by commenters was substantively resolved and fully reflected in the rulemaking record, *i.e.*, through inclusion of the interpretive letters in the rulemaking docket, quoting relevant passages from the letters in the **Federal Register**, and carefully evaluating the areas of potential ambiguity in response to public comments on a provision-by-provision basis. By discussing the

resolution of the perceived ambiguity explicitly in the rulemaking record, the EPA assured that the correct meaning of that provision should be evident from the record, should any question concerning its meaning arise in a future dispute.

Finally, the EPA notes that while it is possible to reflect interpretive letters in the Code of Federal Regulations (CFR) or incorporate them into the regulatory text of the CFR in appropriate circumstances, there is no requirement to do so in all actions, and there are other ways for the public to have a clear understanding of the content of the SIP. First, for each SIP, the CFR contains a list or table of actions that reflects the various components of the approved SIP, including information concerning the submission of, and the EPA’s action approving, each component. With this information, interested parties can readily locate the actual **Federal Register** document in which the EPA will have explained the basis for its approval in detail, including any interpretive letters that may have been relied upon to resolve any potential ambiguity in the SIP provisions. With this information, the interested party can also locate the docket for the underlying rulemaking and obtain a copy of the interpretive letter itself. Thus, if there is any debate about the correct reading of the SIP provision, either at the time of the EPA’s approval or in the future, it will be possible to ascertain the mutual understanding of the air agency and the EPA of the correct reading of the provision in question at the time the EPA approved it into the SIP. Most importantly, regardless of whether the content of the interpretive letter is reflected in the CFR or simply described in the **Federal Register** preamble accompanying the EPA’s approval of the SIP submission, this mutual understanding of the correct reading of that provision upon which the EPA relied will be the reading that governs, should that later become an issue.

The EPA notes that the existence of, or content of, an interpretive letter that is part of the basis for the EPA’s approval of a SIP submission is in reality analogous to many other things related to that approval. Not everything that may be part of the basis for the SIP approval in the docket—including the proposal or final preambles, the technical support documents, responses to comments, technical analyses, modeling results, or docket memoranda—will be restated *verbatim*, incorporated into, or referenced in the CFR. These background materials remain part of the basis for the SIP

<sup>131</sup> The EPA notes that notwithstanding discretion in wording in regulatory provisions, many words have specific recognized legal meaning whether by statute, regulation, case law, dictionary definition, or common usage. For example, the term “continuous” has a specific meaning that must be complied with substantively, however the state may elect to word its regulatory provisions.

<sup>132</sup> See, e.g., *Luminant Generation v. EPA*, 714 F.3d 841 (5th Cir. 2013) (upholding the EPA’s disapproval in part of affirmative defense provision with unclear regulatory text); *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1170 (10th Cir. 2012) (upholding the EPA’s issuance of a SIP call to clarify a provision that could be interpreted in a way inconsistent with CAA requirements).

approval and remain available should they be needed in the future for any purpose. To the extent that there is any question about the correct interpretation of an ambiguous provision in the future, an interested party will be able to access the docket to verify the correct meaning of SIP provisions.

With regard to the Petitioner's concern that either actual or alleged ambiguity in a SIP provision could impede an effective enforcement action, the EPA believes that its current process for evaluating SIP submissions and resolving potential ambiguities, including the reliance on interpretive letters in appropriate circumstances with correct documentation in the rulemaking action, minimizes the possibility for any such ambiguity in the first instance. To the extent that there remains any perceived ambiguity, the EPA concludes that regulated entities, regulators, the public, and ultimately the courts, have recourse to use the administrative record to shed light on and resolve any such ambiguity as explained earlier in this document.

The EPA emphasizes that it is already the Agency's practice to assure that any interpretive letters are correctly and adequately reflected in the **Federal Register** and are included in the rulemaking docket for a SIP approval. Should the Petitioner or any other party have concerns about any ambiguity in a provision in a SIP submission, the EPA strongly encourages that they bring this ambiguity to the Agency's attention during the rulemaking action on the SIP submission so that it can be addressed in the rulemaking process and properly reflected in the administrative record. Should an ambiguity come to light later, the EPA encourages the Petitioner or any other party to bring that ambiguity to the attention of the relevant EPA Regional Office. If the Agency agrees that there is ambiguity in a SIP provision that requires clarification subsequent to final action on the SIP submission, then the EPA can work with the relevant air agency to resolve that ambiguity by various means.

#### *D. Response to Comments Concerning Reliance on Interpretive Letters in SIP Revisions*

The EPA received relatively few comments, both supportive and adverse, concerning the Agency's overarching decision to deny the Petition with respect to this issue. For clarity and ease of discussion, the EPA is responding to these comments, grouped by whether they were supportive or adverse, in this section of this document.

1. Comments that supported the EPA's interpretation of the CAA to

allow reliance on interpretive letters to clarify ambiguities in state SIP submissions.

*Comment:* A number of state and industry commenters agreed with the EPA that the use of interpretive letters to clarify perceived ambiguity in the provisions in a SIP is a permissible, and sometimes necessary, approach to approving SIP submissions under the CAA when done correctly. Those commenters who supported the EPA's proposed action on the Petition did not elaborate upon their reasoning, but generally supported it as an efficient and reasonable approach to resolve ambiguities.

*Response:* The EPA agrees with the commenters who expressed support of the proposal based on practical considerations such as efficiency. These commenters did not, however, base their support for the proposed action on the EPA's interpretation of the CAA in the February 2013 proposal, nor did they acknowledge the parameters that the EPA itself articulated concerning the appropriate situations for such reliance and the process by which such reliance is appropriate. Thus, the EPA reiterates that reliance on interpretive letters to resolve ambiguities or perceived ambiguities in SIP submissions must be weighed by the Agency on a case-by-case basis, and such evaluation is dependent upon the specific facts and circumstances present in a specific SIP action and would follow the process described in the proposal.

2. Comments that opposed the EPA's interpretation of the CAA to allow reliance on interpretive letters to clarify ambiguities in state SIP submissions.

*Comment:* Other commenters disagreed with the EPA's proposed response to the Petition on this issue. One commenter opposed the Agency's reliance on interpretive letters under any circumstances and did not draw any factual or procedural distinctions between situations in which this approach might or might not be appropriate or correctly processed. This commenter argued that citizens should not be required "to sift through a large and complex rulemaking docket in order to figure out the meaning and operation of state regulations." The commenter asserted that simply as a matter of "good government," all state regulations approved as SIP provisions should be clear and unambiguous on their face. This commenter also expressed concern that courts could not or would not accord legal weight to interpretive letters created after state regulations were adopted and submitted to the EPA, or after the EPA's approval of the SIP submission occurred, and

would view such letters as *post hoc* interpretations of no probative value. Another commenter added its view that reliance on interpretive letters is appropriate only when affected parties have the right to comment on the interpretive letters and the EPA's proposed use of them during the rulemaking in which the EPA relies on such letters to resolve ambiguities and before the Agency finally approves the SIP revision.

*Response:* As a general matter, the commenter opposing the EPA's reliance on interpretive letters in any circumstances because citizens would be required "to sift through" the docket did not provide specific arguments regarding the EPA's interpretation of the statute as stated in the February 2013 proposal. Consistent with the EPA's interpretation of the CAA, and as explained earlier in this document, the EPA agrees with the core principle that the language of regulations in SIPs that pertain to SSM events should be clear and unambiguous. A commenter argued that "a fundamental principle of good government is making sure that all people know what the applicable law is. Having the applicable law manifest in a letter sitting in a filing cabinet in one office clearly does not qualify as good government." The EPA generally agrees on this point as well. As explained earlier in this document, the EPA allows the use of interpretive letters to clarify perceived ambiguity in the provisions of a SIP submission only when used correctly, with adequate documentation in both the **Federal Register** and the docket for the underlying rulemaking action. Section VI.B of this document explains how interested parties can use the list or table of actions that appears in the CFR and that reflects the various components of the approved SIP, to identify the **Federal Register** document wherein the EPA has explained the basis for its decision on any individual SIP provision. As such, the EPA does not envision a scenario whereby a citizen or a court would be unable to determine how the air agency and the EPA interpreted a specific SIP provision at the time of its approval into the SIP. Assuming there is any ambiguity in the provision, the mutual understanding of the state and the EPA as to the proper interpretation of that provision would be clear at the time of the approval of the SIP revision, as reflected in the **Federal Register** document for the final rule and the docket supporting that rule, which should answer any question about the correct interpretation of the term.

The same commenter also questioned whether "courts can or will give any

legal weight to interpretative letters created after state regulations are adopted or SIP approvals occurred, in the face of industry defendant arguments that the SIP provisions do not accord with those *post hoc* interpretive letters.” This commenter asserted that by not requiring all interpretations of the SSM provisions in the “unambiguous language of the SIPs,” the EPA is accepting “great legal uncertainty” as to whether judges will consider interpretive letters in enforcement actions. As a preliminary matter, as explained earlier in this document, this action does not apply to “*post hoc*” interpretive letters, *i.e.*, to situations where a state would submit an interpretive letter after the EPA’s approval of the SIP. Through this action the EPA is confirming its view that it may use interpretive letters to clarify ambiguous SIP provisions only when those letters were submitted to the EPA during the evaluation of the SIP submission and before final approval of the SIP revision and were included in the final rulemaking docket and explicitly discussed in the **Federal Register** document announcing such final action.

In addition, as explained earlier in this document, once the EPA approves a SIP revision, it becomes part of the state’s SIP identified in the CFR and thus becomes a federally enforceable regulation. In cases where the substance of the interpretive letter is provided in the CFR itself, either by copying the interpretation *verbatim* into the regulatory text or by incorporating the letter by reference, courts need not look further for the state and the Agency’s agreed upon interpretation. The EPA’s interpretation will be clearly reflected in the CFR. The EPA recognizes that actual or perceived regulatory ambiguity may become an issue in instances where the interpretive letter is reflected in the preamble to the final rulemaking but is not copied or incorporated by reference in the CFR text itself. It is important to note, however, that once included in the preamble to the final rule, the air agency’s interpretation of the SIP provision, as reflected in the interpretive letter, becomes the EPA’s promulgated interpretation as well. While the EPA recognizes that an agency’s preamble guidance generally does not have the binding force of an agency’s regulations, courts do view it as informative in understanding an agency’s interpretation of its own regulation,<sup>133</sup> and courts accord an

agency’s interpretation of its own regulations a “‘high level of deference,’ accepting it ‘unless it is plainly wrong.’”<sup>134</sup> When reviewing a purportedly ambiguous agency regulation, courts have found that the agency’s interpretation of its own regulation is “controlling unless ‘plainly erroneous or inconsistent with the regulation.’”<sup>135</sup> Based on these settled legal principles, the EPA would expect a court in an enforcement action to look not only to the text of the regulation at issue but also to the preamble to the final rule. The preamble would contain an explanation of any interpretive letter from the state upon which the EPA relied in order to interpret any ambiguous SIP provisions.<sup>136</sup> As such, the EPA disagrees that it is “accepting an unreasonable amount of legal uncertainty” in future enforcement actions by allowing the use of interpretive letters to clarify SIP provisions where such letters are specifically discussed in the final rulemaking. The EPA reiterates that reliance on such interpretive letters is not appropriate in all circumstances, such as instances in which the state’s SIP submission is so significantly ambiguous that it is necessary to request that the state revise the regulatory text before the EPA can approve it into the SIP.

Finally, a commenter stated its view that reliance on interpretive letters may be appropriate, but only when affected parties have the right to comment on the letter and the EPA’s reliance on it during the rulemaking in which the letter is relied upon. The EPA has explained earlier in this document the proper circumstances under which such reliance may be appropriate and the proper process to be followed when reliance upon such letters is appropriate, but the EPA also notes that the process does not require that the letters always be made available for public comment. As explained earlier in this document, the EPA makes every attempt to identify ambiguities in state-

submitted SIPs and requests states to submit interpretive letters to explain any ambiguities, before putting the proposed action on the SIP submission out for public notice and comment. On occasion, however, ambiguous provisions may inadvertently remain and are not identified until the notice-and-comment period has begun. As explained earlier in this document, sometimes these ambiguities are so significant that the EPA requires the state to resubmit its SIP submission altogether, which would entail another notice-and-comment period. When the EPA does not deem the ambiguity to be so significant as to warrant a revision to the state’s regulatory text in the SIP submission, the Agency believes that resolution of the ambiguity through the submission of an interpretive letter, which then is incorporated into the EPA’s action, reflected in the administrative record and memorialized as the proper intended reading of the provision, is appropriate.

This approach comports with well-established principles applicable to notice-and-comment rulemaking generally. One purpose of giving interested parties the opportunity to comment is to provide these parties the opportunity to bring areas of potential ambiguity in the proposal to an agency’s attention so that the concerns may be addressed before the agency takes final action. If the APA did not allow the agency to consider comments and provide clarification when issuing its final action as necessary, this purpose would be defeated. Courts have held that so long as a final rule is a “logical outgrowth” of the proposed rule, adequate notice has been provided.<sup>137</sup> It is the EPA’s practice to neither require a state to resubmit a SIP submission nor repropose action on the submission, so long as the clarification provided in the interpretive letter is a logical outgrowth of the proposed SIP provision. If an interested party believes that the EPA is incorrect in not requiring the state to revise its SIP submission or that the EPA should repropose action on a submission, including the clarification provided by the interpretive letter in the plain language of the SIP submission itself, that party does have recourse. The APA gives that party the opportunity to petition the EPA for rulemaking to reconsider the decision under 5 U.S.C. 553(e). For these reasons, the EPA believes that its process for using interpretive letters to clarify SIP

*Outdoor Council v. U.S. Forest Serv.*, 165 F.3d 43, 53 (D.C. Cir. 1999) (“Although the preamble does not ‘control’ the meaning of the regulation, it may serve as a source of evidence concerning contemporaneous agency intent.”).

<sup>134</sup> *Howmet* at 549 (quoting *Gen Elec. Co. v. EPA*, 53 F.3d 1324, 1327 (D.C. Cir. 1990)).

<sup>135</sup> *Auer v. Robbins*, 519 U.S. 452, 461 (1997) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 359 (1989)).

<sup>136</sup> Indeed, the APA requires agencies to “incorporate in the rules adopted a concise general statement of their basis and purpose,” 5 U.S.C. 553(c), often referred to as the regulatory preamble. It would not make sense for a court to attempt to interpret the text of a regulation independently from its statutorily mandated statement of basis and purpose.

<sup>133</sup> See, e.g., *Howmet Corp. v. EPA*, 614 F.3d 544, 552 (D.C. Cir. 2010) (using preamble guidance to interpret an ambiguous regulatory provision); *Wyo.*

<sup>137</sup> See, e.g., *Shell Oil Co.*, 950 F.2d 741; *NRDC v. Thomas*, 838 F.2d 1224 (D.C. Cir. 1988); *South Terminal Corp. v. EPA*, 504 F.2d 646.

provisions, as articulated in this rulemaking, is appropriate.

## VII. Clarifications, Reiterations and Revisions to the EPA's SSM Policy

### A. Applicability of Emission Limitations During Periods of SSM

#### 1. What the EPA Proposed

In the February 2013 proposal, the EPA reiterated its longstanding interpretation of the CAA that SIP provisions cannot include exemptions from emission limitations for excess emissions during SSM events. This has been the EPA's explicitly stated interpretation of the CAA with respect to SIP provisions since the 1982 SSM Guidance, and the Agency has reiterated this important point in the 1983 SSM Guidance, the 1999 SSM Guidance and the 2001 SSM Guidance. In accordance with CAA section 302(k), SIPs must contain emission limitations that "limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis." Court decisions confirm that this requirement for continuous compliance prohibits exemptions for excess emissions during SSM events.<sup>138</sup>

#### 2. What Is Being Finalized in This Action

For the reasons explained in the February 2013 proposal, in the background memorandum supporting that proposal and in the EPA's responses to comments in this document, the EPA interprets the CAA to prohibit exemptions for excess emissions during SSM events in SIP provisions. This interpretation has long been reflected in the SSM Policy. The EPA acknowledges, however, that both states and the Agency have failed to adhere to the CAA consistently with respect to this issue in some instances in the past, and thus the need for this SIP call action to correct the existing deficiencies in SIPs. In order to be clear about this important point on a going-forward basis, the EPA is reiterating that emission limitations in SIP provisions cannot contain exemptions for emissions during SSM events.

Many commenters wrongly asserted that the EPA declared in the February 2013 proposal that all emission

limitations in SIPs must be established as numerical limitations, or must be set at the same numerical level at all times. The EPA did not take this position. In the case of section 110(a)(2)(A), the statute does not include an explicit requirement that all SIP emission limitations must be expressed numerically. In practice, it may be that numerical emission limitations are the most appropriate from a regulatory perspective (e.g., to be legally and practically enforceable) and thus the limitation would need to be established in this form to meet CAA requirements. The EPA did not, however, adopt the position ascribed to it by commenters, i.e., that SIP emission limitations must always be expressed only numerically and must always be set at the same numerical level during all modes of source operation.

The EPA notes that some provisions of the CAA that govern standard-setting limit the EPA's own ability to set non-numerical standards.<sup>139</sup> Section 110(a)(2)(A) does not contain comparable explicit limits on non-numerical forms of emission limitation. Presumably, however, some commenters misunderstood the explicit statutory requirement for emission limitations to be "continuous" as a requirement that states must literally establish SIP emission limitations that would apply the same precise numerical level at all times. Evidently these commenters did not consider the explicit recommendations that the EPA made in the February 2013 proposal concerning creation of alternative emission limitations in SIP provisions that states may elect to apply to sources during startup, shutdown or other specifically defined modes of source operation.<sup>140</sup> As many of the commenters acknowledged, the EPA itself has recently promulgated emission limitations in NSPS and NESHAP regulations that impose different numerical levels during different modes of source operation or impose emission limitations that are composed of a combination of a numerical limitation during some modes of operation and a specific technological control requirement or work practice requirement during other modes of operation. In light of the court's

decision in *Sierra Club v. Johnson*, the EPA has been taking steps to assure that its own regulations impose emission limitations that apply continuously, including during startup and shutdown, as required.<sup>141</sup>

Regardless of the reason for the commenters' apparent misunderstanding on this point, many of the commenters used this incorrect premise as a basis to argue that "continuous" SIP emission limitations may contain total exemptions for all emissions during SSM events. Therefore, in this final action the EPA wishes to be very clear on this important point, which is that SIP emission limitations: (i) Do not need to be numerical in format; (ii) do not have to apply the same limitation (e.g., numerical level) at all times; and (iii) may be composed of a combination of numerical limitations, specific technological control requirements and/or work practice requirements, with each component of the emission limitation applicable during a defined mode of source operation. It is important to emphasize, however, that regardless of how the air agency structures or expresses a SIP emission limitation—whether solely as one numerical limitation, as a combination of different numerical limitations or as a combination of numerical limitations, specific technological control requirements and/or work practice requirements that apply during certain modes of operation such as startup and shutdown—the emission limitation as a whole must be continuous, must meet applicable CAA stringency requirements and must be legally and practically enforceable.<sup>142</sup>

Another apparent common misconception of commenters was that SIP provisions may contain exemptions for emissions during SSM events, so long as there is some other generic regulatory requirement of some kind somewhere else in the SIP that coincidentally applies during those exempt periods. The other generic regulatory requirements most frequently referred to by commenters are "general duty" type requirements, such as a general duty to minimize emissions at all times, a general duty to use good engineering judgment at all times, or a

<sup>138</sup> See, e.g., *Sierra Club v. Johnson*, 551 F.3d 1019, 1021 (D.C. Cir. 2008) (interpreting the definition of emission limitation in section 302(k) and section 112); *Mich. Dep't of Envtl. Quality v. Browner*, 230 F.3d 181 (6th Cir. 2000) (upholding disapproval of SIP provisions because they contained exemptions applicable to SSM events); *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1170 (10th Cir. 2012) (upholding the EPA's issuance of a SIP call to a state to correct SSM-related deficiencies).

<sup>139</sup> See, e.g., CAA section 112(h)(1) (authorizing design, equipment, work practice, or other operational emission limitations under certain conditions); 40 CFR 51.308(e)(1)(iii) (regulations applicable to regional haze plans).

<sup>140</sup> See February 2013 proposal, 78 FR 12459 at 12478 (February 22, 2013) (the recommended criteria for consideration in creation of SIP provisions that apply during startup and shutdown).

<sup>141</sup> 551 F.3d 1019 (D.C. Cir. 2008).

<sup>142</sup> The EPA notes that CAA section 123 explicitly prohibits certain intermittent or supplemental controls on sources. In a situation where an emission limitation is continuous, by virtue of the fact that it has components applicable during all modes of source operation, the EPA would not interpret the components that applied only during certain modes of operation, e.g., startup and shutdown, to be prohibited intermittent or supplemental controls.

general duty not to cause a violation of the NAAQS at any time. To the extent that such other general-duty requirement is properly established and legally and practically enforceable, the EPA would agree that it may be an appropriate separate requirement to impose upon sources in addition to the (continuous) emission limitation. The EPA itself imposes separate general duties of this type in appropriate circumstances.<sup>143</sup> The existence of these generic provisions does not, however, legitimize exemptions for emissions during SSM events in a SIP provision that imposes an emission limitation.

In accordance with the definition of section 302(k), SIP emission limitations must be continuous and apply at all times. SIP provisions may be composed of a combination of numerical limitations, specific technological control requirements and/or work practice requirements, but those must be components of a continuously applicable SIP emission limitation. In addition, the SIP emission limitation must meet applicable stringency requirements during all modes of source operation (e.g., be RACT for stationary sources located in a nonattainment area) and be legally and practically enforceable. General-duty requirements that are not clearly part of or explicitly cross-referenced in a SIP emission limitation cannot be viewed as a component of a continuous emission limitation. Even if clearly part of or explicitly cross-referenced in the SIP emission limitation, however, a given general-duty requirement may not be consistent with the applicable stringency requirements for that type of SIP provision during startup and shutdown. The EPA's recommendations for developing appropriate alternative emission limitations applicable during certain modes of source operation are discussed in section VII.B.2 of this document. In general, the EPA believes that a legally and practically enforceable alternative emission limitation applicable during startup and shutdown should be expressed as a numerical limitation, a specific technological control requirement or a specific work practice requirement applicable to affected sources during specifically defined periods or modes of operation.

### 3. Response to Comments

The EPA received a substantial number of comments, both supportive

and adverse, concerning the issue of exemptions in SIP provisions for excess emissions during SSM events. Many of these comments raised the same core issues, albeit using slight variations on the arguments or variations on the combination and sequence of arguments. For clarity and ease of discussion, the EPA is responding to these comments, grouped by issue, in this section of this document.

a. Comments that the EPA's proposed action on the Petition is incorrect because some of the Agency's own regulations contain exemptions for emissions during SSM events.

*Comment:* Many commenters argued that the EPA is misinterpreting the CAA to preclude SIP provisions with exemptions for emissions during SSM events because some of the Agency's own existing NSPS and NESHAP rules contain such exemptions. Some commenters provided a list of existing NSPS or NESHAP standards that they claimed currently contain exemptions for emissions during SSM events. Commenters also noted that the NSPS general provisions at 40 CFR 60.11(d) excuse noncompliance with many NSPS during periods of startup and shutdown. Other commenters asserted that the EPA's interpretations in the February 2013 proposal are inconsistent with its longstanding interpretation of the Act because the EPA itself has a long history of adopting exceptions to numerical emission limitations for emissions during SSM events, citing to the NSPS general provisions at 40 CFR 60.8, the NSPS for Fossil-Fuel-Fired Steam Generators and for Electric Utility Steam Generating Units (40 CFR part 60, respectively subparts D and Da) and the NSPS for Industrial-Commercial-Institutional Steam Generating Units and for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR part 60, respectively subparts Db and Dc). Commenters claimed that recent revisions to 40 CFR part 60, subpart Da excluded periods of startup and shutdown from new PM standards. The commenters pointed to these facts or alleged facts as evidence that the EPA is interpreting the term "emission limitation" or other provisions of the statute inconsistently to preclude SSM exemptions in SIP provisions.

*Response:* Commenters are correct that many of the EPA's existing NSPS and NESHAP standards still contain exemptions from emission limitations during periods of SSM. The exemptions in these EPA regulations, however, predated the 2008 issuance of the D.C. Circuit decision in *Sierra Club v. Johnson*, in which the court held that emission limitations must be

continuous and thus cannot contain exemptions for emissions during SSM events. Likewise, the NSPS general provisions in 40 CFR 60.8 that commenters identified as inconsistent also predate that 2008 court decision. Although these other EPA regulations that include exemptions for emissions during SSM events were not before the court in the *Sierra Club* case, the EPA's view is that the legal reasoning of the *Sierra Club* decision applies equally to these exemptions and that the exemptions are thus inconsistent with the CAA.

Consequently, since the *Sierra Club* decision, the EPA has eliminated exemptions in many existing federal emission limitations as these standards are revised or reviewed pursuant to CAA requirements, such as CAA sections 111(b)(1)(B), 112(d)(6) and 112(f)(2).<sup>144</sup> Similarly, the EPA has established emission standards that apply at all times, including during SSM events, when promulgating new NSPS and NESHAP standards to be consistent with the *Sierra Club* decision.<sup>145</sup> The EPA recognizes that the NSPS general provisions regulations also include exemptions for emissions during SSM events, but in promulgating new NSPS since the *Sierra Club* decision, the EPA has established emission limitations in the new NSPS that apply at all times thereby superseding those general provisions. Therefore, the EPA's action in this rulemaking is consistent with other actions that the EPA has taken since the *Sierra Club* decision concerning the issue of SSM exemptions.

The fact that the EPA has not completed the process of updating its own regulations to bring them into compliance with respect to CAA requirements concerning proper treatment of emissions during SSM events does not render this SIP call action arbitrary or capricious. The existence of a deficiency in an existing EPA regulation that has not yet been corrected does not alter the legal requirements imposed by the CAA upon states with respect to SIP provisions. Thus, for example, the EPA does not agree with commenters that the continued existence of SSM exemptions

<sup>144</sup> See, e.g., "New Source Performance Standards Review for Nitric Acid Plants; Final rule," 77 FR 48433 (August 14, 2012) (example of NSPS emission limitation that no longer includes exemption for periods of startup or shutdown).

<sup>145</sup> See, e.g., "Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final rule," 77 FR 49489 (August 16, 2012) (consistent with *Sierra Club v. Johnson*, the EPA has established standards in both rules that apply at all times).

<sup>143</sup> See, e.g., "Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final rule," 77 FR 49489 at 49570, 49586 (August 16, 2012) (added general standards to apply at all times).

in the general provisions applicable to the emission limitations in the Agency's own NSPS for Fossil-Fuel-Fired Steam Generators in 40 CFR part 60, subpart D, is evidence that exemptions for emissions during SSM events are permitted by the CAA.

The EPA acknowledges that correction of longstanding regulatory deficiencies by proper rulemaking procedures requires time and resources, not only for the EPA but also for states and affected sources. Hence, the EPA has elected to proceed via its authority under section 110(k)(5) and to provide states with the full 18 months allowed by statute for compliance with this action. This SIP call is intended to help assure that state SIP provisions are brought into line with CAA requirements for emission limitations, just as the EPA is undertaking a process to update its own regulations.

The EPA also specifically disagrees with the commenters' implication that 40 CFR 60.11(d) completely excuses noncompliance during periods of startup and shutdown. Rather, that provision imposes a separate affirmative obligation to maintain and operate the affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices at all times. The existence of this separate duty to minimize emissions, however, does not justify or excuse the existence of an exemption for emissions during SSM events from the emission limitations of an EPA NSPS. It is a separate obligation that sources must also meet at all times.

The EPA also disagrees with the commenters who argued that the Agency has recently created new exemptions for PM emissions during startup and shutdown events in the NSPS for Electric Utility Steam Generating Units in 40 CFR part 60, subpart Da. The EPA has not created new exemptions for emissions during startup and shutdown. To the contrary, the EPA has taken steps to assure that these regulations are consistent with the statutory definition of emission limitation and with the logic of the *Sierra Club* decision on a going-forward basis. In accordance with that decision, the revised emission limitations in subpart Da NSPS apply continuously. In revising subpart Da to establish requirements for sources on which construction, modification or reconstruction commenced after May 3, 2011, the EPA determined that it was appropriate to provide that the exemptions for emissions during SSM events in the General Provisions do not

apply.<sup>146</sup> Although the *Sierra Club v. Johnson* decision specifically addressed the validity of SSM exemptions in NESHAP regulations, the EPA concluded that the court's focus on the definition of "emission limitation" in section 302(k) applied equally to any such SSM exemptions in NSPS regulations. Thus, for affected sources on which construction, modification or reconstruction starts after May 3, 2011, the General Provisions do not provide an exemption to compliance with the applicable emission limitations during SSM events.

For such sources, the emission limitation for PM in 40 CFR 60.42Da(a) imposes a numerical level of 0.03 lb/MMBtu that applies at all times except during startup and shutdown and specific work practices that apply during startup and shutdown.<sup>147</sup> The related emission limitation for opacity from such sources in 40 CFR 60.42Da(b) is 20 percent opacity at all times, except for one 6-minute period per hour of not more than 27 percent, and it applies at all times except during periods of startup and shutdown when the work practices for PM limit opacity. Commenters alleged that the EPA created an "exemption" from the PM emission limitations in subpart Da applicable to post-May 3, 2011, affected sources. That is simply incorrect. The revised regulations in subpart Da impose a numerical emission limitation that applies at all times except during startup and shutdown and impose specific work practice requirements that apply during startup and shutdown as a component of the emission limitation. Specifically, 40 CFR 60.42Da(e)(2) explicitly requires post-May 3, 2011, affected sources to comply with specific work practice standards in part 63, subpart UUUUU. The numerical emission limitation and the work practice requirement together comprise a continuous emission limitation and there is no exemption for emissions during startup and shutdown. The fact that the EPA has established different requirements for different periods of operation does not constitute creation of an exemption. These emission

limitations have numerical limitations that apply during most periods and specific technological control requirements or work practice requirements that apply during startup and shutdown, but all periods of operation are subject to controls and no periods of operation are exempt from regulation. States are similarly able to alter their regulations, in response to this SIP call, to provide for emission limitations with different types of controls applicable during different modes of source operation, so long as those controls apply at all times and no periods are exempt from controls. As explained in section VII.A of this document, the EPA interprets section 110(a)(2)(A) to permit SIP provisions that are composed of a combination of numerical limitations, specific technological control requirements and/or work practice requirements, so long as the resulting emission limitations are continuous, meet applicable stringency requirements (e.g., are RACT for sources in nonattainment areas) and are legally and practically enforceable.

The EPA also notes that the provisions of 40 CFR 60.42Da(b)(1) do not provide an "exemption" from the opacity standard. That section merely provides that the affected sources do not need to meet the opacity standard of the NSPS (at any time), if they have installed a PM continuous emission monitoring system (PM CEMS) to measure PM emissions continuously instead of relying on periodic stack tests to assure compliance with the PM emission limitation. One reason for the imposition of opacity standards on sources is to provide an effective means of monitoring for purposes of assuring source compliance with PM emission limitations and proper operation of PM emission controls on a continuous basis. If a source is subject to a sufficiently stringent PM limitation and has opted to install, calibrate, maintain and operate a PM CEMS to measure PM emissions, then it is reasonable for the EPA to conclude that an opacity emission limitation is not needed for that particular source for those purposes.<sup>148</sup> The direct measurement of PM, in conjunction with an appropriately stringent PM emission limitation that

<sup>146</sup> See 40 CFR 60.48Da(a). For affected facilities for which construction, modification, or reconstruction commenced after May 3, 2011, the applicable SO<sub>2</sub> emissions limit under § 60.43Da, NO<sub>x</sub> emissions limit under § 60.44Da, and NO<sub>x</sub> plus CO emissions limit under § 60.45Da apply at all times.

<sup>147</sup> The EPA notes that the emission standards for SO<sub>2</sub> in 40 CFR 60.43Da and for NO<sub>x</sub> in 40 CFR 60.44Da, applicable to sources on which construction, modification or reconstruction commenced after May 3, 2011, also apply continuously and contain no exemptions for emissions during SSM events.

<sup>148</sup> For example, for NSPS regulations under subparts D, Da, Db and Dc of 40 CFR part 60, the EPA has deemed 0.030 lb/MMBtu to be a sufficiently stringent PM limitation for certain sources operating PM CEMS to conclude that an opacity emission limitation is not needed, on the basis that the contribution of filterable PM to opacity at PM levels of 0.030 lb/MMBtu or less is generally negligible, and sources with mass limits at this level or less will operate with little or no visible emissions (i.e., less than 5 percent opacity). See 74 FR 5072 at 5073 (January 28, 2009).



applies continuously, is an appropriate means to assure adequate control of PM emissions on a continuous basis. States evaluating how best to replace impermissible SSM exemptions from opacity standards may wish to consider a similar approach, conditioned upon the use of PM CEMS and a sufficiently stringent PM emission limitation.

Finally, the EPA emphasizes that what is at issue in this action is the question of whether emission limitations in SIP provisions can include exemptions for emissions during SSM events. The EPA is reiterating its longstanding interpretation of the CAA with respect to this question, in the process of responding to the Petition, updating its SSM Policy and applying its current interpretations of the CAA to the specific SIP provisions at issue in this SIP call action. To the extent that commenters intend to point out that the EPA needs to address exemptions for emissions during SSM events in its own existing regulations, the Agency is already aware of that need due to recent judicial decisions and is proceeding to correct those regulations in due course.

b. Comments that the EPA's proposed action on the Petition is incorrect because the Agency has previously allowed the inclusion of exemptions for emissions during SSM events through approval of NSPS or NESHAP requirements into SIPs.

*Comment:* Commenters asserted that the EPA is being inconsistent because it has previously approved SIP submissions that rely on NSPS rules, including the SSM exemptions in those existing rules. The commenters argued that the EPA's current interpretation of the CAA to preclude SSM exemptions in SIP provisions is thus at odds with past guidance and practice.

*Response:* The EPA disagrees with the argument that past approval of SIP submissions that relied upon an NSPS or NESHAP with an SSM exemption is evidence that such exemptions should be permissible in SIP provisions in the future. In the 1999 SSM Guidance, the EPA addressed the related issue of whether states could create affirmative defenses in SIP provisions that would alter or add to the requirements of an existing EPA NSPS or NESHAP.<sup>149</sup> At that time, the EPA clearly stated that it would be inappropriate for a state to seek to "deviate" from the specific requirements of an NSPS or NESHAP when adopting that standard as a SIP provision, stating that "[b]ecause EPA set these standards taking into account technological limitations, additional

exemptions would be inappropriate." Thus, so long as a state did not alter the requirements of the existing NSPS or NESHAP by including additional affirmative defenses or exemptions, the EPA indicated that it would approve a SIP submission that included an NSPS or NESHAP.

The commenters' argument has brought to the EPA's attention that past guidance on this issue is in fact inconsistent with more recent legal developments. At the time of the 1999 SSM Guidance, the EPA was still of the belief that its own NSPS and NESHAP regulations could legitimately include exemptions for emissions during SSM events. In that light, recommending to states that they could rely on an EPA NSPS or NESHAP as an emission limitation in a SIP provision so long as they did not alter the NSPS or NESHAP in any fashion was logical. At that time, the reasoning was that NSPS and NESHAP standards were technology-based standards that, although neither designed nor intended to meet the separate legal requirements for SIP provisions, could be used to provide emission reductions creditable in SIPs. Since the 2008 D.C. Circuit decision in *Sierra Club v. Johnson*, however, it has been clear that NSPS and NESHAP standards themselves cannot contain such exemptions. The reasoning of the court was that exemptions for SSM events are impermissible because they contradict the requirement that emission limitations be "continuous" in accordance with the definition of that term in section 302(k). Although the court evaluated this issue in the context of EPA regulations under section 112, the EPA believes that this same logic extends to SIP provisions under section 110, which similarly must contain emission limitations as defined in the CAA. Section 110(a)(2)(A) requires states to have emission limitations in their SIPs to meet other CAA requirements, and any such emission limitations would similarly be subject to the definition of that term in section 302(k).

Accordingly, the EPA concludes that, prospectively, a state should not submit an NSPS or NESHAP for inclusion into its SIP as an emission limitation (whether through incorporation by reference or otherwise), unless that NSPS or NESHAP does not include an exemption for SSM events or unless the state otherwise takes action to exclude the SSM exemption from the standard as part of the SIP submission. Because SIP provisions must apply continuously, including during SSM events, the EPA can no longer approve SIP submissions that include any

emission limitations with such exemptions, even if those emission limitations are NSPS or NESHAP regulations that the EPA has not yet revised to make consistent with CAA requirements. Alternatively, states may elect to adopt an existing NSPS or NESHAP as a SIP provision, so long as the state provision excludes the SSM exemption.<sup>150</sup> States may also wish to replace the SSM exemption with appropriately developed alternative emission limitations that apply during startup and shutdown in lieu of the SSM exemption. Otherwise, the EPA's approval of the deficient SSM exemption provisions into the SIP would contravene CAA requirements for SIP provisions and would potentially result in misinterpretation or misapplication of the standards by regulators, regulated entities, courts and members of the public. The EPA emphasizes that the inclusion of an NSPS or NESHAP as an emission limitation in a state's SIP (which approach, as noted in section VII.B.3 of this document, would be at the state's option) is different and distinct from reliance on such standards indirectly, such as sources of emission reductions that may be taken into account for SIP planning purposes in emissions inventories or attainment demonstrations. For these uses (*i.e.*, other than as direct emission limitations), states may continue to rely on EPA NSPS and NESHAP regulations, even those that have not yet been revised to remove inappropriate exemptions, in accordance with the requirements applicable to those SIP planning functions.

c. Comments that the EPA is misinterpreting the *Sierra Club* case because it applies only to MACT regulations and not to SIP provisions.

*Comment:* Many commenters claimed that the EPA incorrectly applies the holding in the *Sierra Club* decision to preclude exemptions for emissions during SSM events in SIP provisions and that the *Sierra Club* decision does not apply in this context. The commenters argued that the *Sierra Club* decision was directly dependent on the structure of CAA section 112 and cannot be extended to the different regulatory

<sup>150</sup> Under CAA section 116, states have the explicit general authority to regulate more stringently than the EPA. Indeed, under section 116 states can regulate sources subject to EPA regulations promulgated under section 111 or section 112 so long as they do not regulate them less stringently. Accordingly, the EPA believes that states may elect to adopt EPA regulations under section 111 or section 112 as SIP provisions and expressly eliminate the exemptions for emissions during SSM events.

<sup>149</sup> See 1999 SSM Guidance at Attachment p. 3.

structure that governs SIPs under CAA section 110.

The commenters further contended that in the SIP context, the underlying air quality pollution control requirement for SIPs is to attain NAAQS and no specific level of stringency is required, unlike section 112, and Congress gave states broad discretion in the design of their SIPs. Commenters asserted that the *Sierra Club* decision held only that the general-duty requirement in the section 112 regulations did not meet the stringency requirements of CAA section 112 and that this holding does not apply in the SIP context because in the SIP context no specific level of stringency is required.

Commenters also asserted that a general-duty requirement is an appropriate alternative standard for SSM events in the SIP context because CAA sections 302(k) and 110(a)(2)(A) give states broad authority to develop the mix of controls necessary and appropriate to implement the NAAQS. Other commenters contended that the *Sierra Club* decision does not preclude states from constructing a compliance regime that uses multiple methods to limit emissions as long as the overall compliance regime to minimize emissions is enforceable.

Commenters also suggested that the decision in *Kamp v. Hernandez* relied upon in the *Sierra Club* case affirmed EPA's approval of a state emission limitation in a SIP that specifically allowed and even expected a certain number of annual exceedances of the emission limit.<sup>151</sup> Some commenters argued that the *Sierra Club* decision should not be read to impose a "continuous emissions limitation" requirement and that to the extent it does, it was incorrectly decided.

*Response:* The EPA disagrees that the court's decision in *Sierra Club v. Johnson* has no relevance to this action. Of course that decision specifically addressed the validity of exemptions for emissions during SSM events in the Agency's own regulations promulgated under section 112. Naturally, that decision turned, in part, on the specific provisions of section 112 and the specific arguments that each of the litigants raised in that case. However, the decision also turned in large part on the explicit statutory definition of the term "emission limitation" in section 302(k), which requires such limitations to be "continuous."

In that litigation, the EPA itself had argued that the exemptions from the otherwise applicable MACT standards

during SSM events were consistent with CAA requirements because the MACT standards and the separate "general duty" requirements "together form an uninterrupted, *i.e.*, continuous" emission limitation, because either the numerical limitation or the general duty applied at all times.<sup>152</sup> The *Sierra Club* court rejected this argument, in part because the general duty that EPA required sources to meet during SSM events was not itself consistent with section 112(d) and the EPA did not purport to act under section 112(h). Thus, the EPA agrees that the court in *Sierra Club* explicitly found that the SSM exemption in EPA's NESHAP general provision rules violated the CAA because the general duty to minimize emissions was not a section 112(d)-compliant standard and had not been justified by the EPA as a 112(h)-compliant standard. The court reasoned that when sections 112 and 302(k) are read together, there must be a continuous section 112-compliant standard. It is important to note that if the otherwise applicable numerical MACT standards had themselves applied at all times consistent with section 302(k), then there would have been no question that they were in fact continuous.

The EPA has concluded that the reasoning of the *Sierra Club* decision is correct and further supports the Agency's interpretations of the CAA with respect to SIP provisions. As explained in the February 2013 proposal, the EPA's longstanding SSM guidance has interpreted the CAA to prohibit exemptions for emissions during SSM events since at least 1982. The EPA has long explained that exemptions for emissions during SSM events are not permissible in SIP provisions, because they interfere with attainment and maintenance of the NAAQS, protection of PSD increments and improvement of visibility, and because they are inconsistent with the enforcement structure of the CAA. The EPA also noted that the definition of emission limitation in section 302(k) was part of the basis for its interpretation concerning SIP provisions.<sup>153</sup> In the February 2013 proposal, the EPA explained that the *Sierra Club* court's emphasis on the definition of the term emission limitation in section 302(k) further bolsters the Agency's basis for interpreting the CAA to preclude such exemptions in SIP provisions. In other

words, under the CAA and the court's decision, emission limitations in SIP provisions as well as in NSPS and NESHAP regulations must be continuous, although they can impose different levels or forms of control during different modes of source operation.

The EPA also disagrees with the argument that the *Sierra Club* decision does not apply because section 110, unlike section 112, does not impose any specific level of "stringency" for SIP provisions. In accordance with section 110(a)(1), states are required to have SIPs that provide for attainment, maintenance and enforcement of the NAAQS in general. Pursuant to section 110(a)(2), states are required to have SIP provisions that meet many specific procedural and substantive requirements, including but not limited to, the explicit requirements of section 110(a)(2)(A) for emission limitations necessary to meet other substantive CAA requirements. In addition, however, states must have SIP provisions that collectively meet a host of other statutory requirements that also impose more specific stringency requirements. Merely by way of example, section 110(a)(2)(I) requires states with nonattainment areas to have SIP provisions that collectively meet part D requirements.<sup>154</sup> In turn, the different subparts of part D applicable to each NAAQS impose many requirements that require emission limitations in SIPs that meet various levels of stringency. Again, merely by way of example, states with nonattainment areas for PM under part D subpart 4 must have SIPs that include emission limitations that meet either the RACM and RACT level of stringency (if the nonattainment area is classified Moderate) or meet the BACM and BACT level of stringency (if the area is classified Serious).<sup>155</sup> There are similar requirements for states to impose emission limitations that must meet various levels of stringency for each of the NAAQS. Likewise, states must impose SIP emission limitations that meet BART and reasonable progress levels of stringency for regional haze program purposes<sup>156</sup> and must ensure that emission limitations meet BACT or LAER levels of stringency for PSD or nonattainment NSR permitting program

<sup>154</sup> Sections 171–193 of CAA title I comprise part D.

<sup>155</sup> See CAA section 172(c)(2) (generally applicable attainment plan requirements including RACM and RACT); CAA section 189(a)(1) (requirements for areas classified Moderate); section 189(b) (requirements for areas classified Serious).

<sup>156</sup> See CAA section 169A(b)(2)(A).

<sup>152</sup> See 551 F.3d 1019, 1026 (D.C. Cir. 2008).

<sup>153</sup> See 1999 SSM Guidance at 2, footnote 1 (citing the section 302(k) definition of emission limitations and emission standards).

<sup>151</sup> 752 F.2d 1444 (9th Cir. 1985).

purposes.<sup>157</sup> The EPA agrees that states have broad discretion in how to devise SIP provisions under section 110, but states nevertheless are required to devise SIP provisions that meet applicable statutory stringency requirements. In short, the argument that the *Sierra Club* decision is not germane because there are no comparable “stringency” requirements applicable to SIP provisions is simply in error. While it is true that SIP provisions do not need to meet section 112 levels of stringency, they must still be continuous under section 302(k) and meet applicable NAAQS, PSD and visibility requirements and stringency levels. In short, they cannot contain exemptions for emissions during SSM events.

Finally, the EPA does not agree with the commenters’ view of the significance of the reference to the *Kamp v. Hernandez* decision by the court in the *Sierra Club* decision. The *Kamp* decision upheld the EPA’s approval of a SIP provision that imposed an SO<sub>2</sub> emission limitation on a specific stationary source.<sup>158</sup> To the extent that the commenters believe that the *Kamp* decision stands for the principle that SIP emission limitations can be “continuous” even if they do not restrict emissions to the same numerical limitation at all times, this point is not in dispute. As explained in section VII.A of this document, the EPA agrees with this principle. If, however, the commenters believe that the *Kamp* decision instead indicates that SIP emission limitations may contain exemptions, such that no emission standard applies during some mode of source operation, then that is simply incorrect. The EPA-approved SIP provision at issue in *Kamp* did not itself allow for a certain number of “exceedances” of the emission limitation each year. The state emission limitation rule in that case was developed to ensure attainment and maintenance of the then applicable SO<sub>2</sub> NAAQS and the approved emission limitation for the source fluctuated but was continuous. It was the specifications of the SO<sub>2</sub> NAAQS standard that allowed for a certain number of “exceedances” each year. The NAAQS themselves are not “emission limitations” governed by section 302(k) and commonly have a statistical “form” that authorizes a set number of “exceedances” of the numerical level of the NAAQS before

there is a “violation” of the NAAQS.<sup>159</sup> Thus, the EPA believes that the court in the *Sierra Club* decision properly cited the *Kamp* case as support for the fundamental proposition that emission limitations must be “continuous.” Moreover, the EPA notes that commenters did not address other reported decisions in which courts have upheld the Agency’s disapproval of SIP submissions containing SSM exemptions.<sup>160</sup>

d. Comments that the EPA’s proposed action contradicts a 2009 guidance document concerning the effect of the *Sierra Club* decision on SSM exemptions in existing standards.

*Comment:* A number of commenters suggested that the EPA’s February 2013 proposal is inconsistent with a memorandum (in fact a public letter) issued by the Agency following the *Sierra Club* decision in which the D.C. Circuit vacated two EPA provisions that exempt sources from section 112(d) emission standards during periods of SSM (Kushner letter).<sup>161</sup> The commenters noted that the Kushner letter explained that many MACT standards have SSM exemptions that were not affected by the *Sierra Club* decision. They argued that the Kushner letter should be read to mean that no emission limitations other than the ones explicitly discussed within that letter would be affected by the court’s holding that emission limitations under the CAA must be continuous.

*Response:* The EPA disagrees with these comments for several reasons. First, the commenters misinterpret the Kushner letter. The purpose of the Kushner letter was to explain the direct and immediate impact of the *Sierra Club* decision, which vacated the SSM exemption in EPA’s NESHAP general provisions regulations. The Kushner letter explained that the vacatur would “immediately and directly” affect only the subset of NESHAP source category standards that incorporated the general provisions’ exemption by reference, and that contain no other regulatory text exempting or excusing, in any way, compliance during SSM events, because

only the general provisions’ exemption was challenged and before the court in the *Sierra Club* case. However, the Kushner letter clearly stated that the legality of all NESHAP SSM exemption provisions was in question and that EPA would examine such provisions in light of the court’s decision. Therefore, the commenters’ suggestion that the Kushner letter supports a limited reading of the legal reasoning of the *Sierra Club* case is incorrect.

Second, the Kushner letter did not explicitly or implicitly address the issue of whether the CAA allows exemptions for emissions during SSM events in SIP provisions. That fact is unsurprising, in that at the time of the Kushner letter the EPA already had guidance in the SSM Policy (issued and reiterated in 1982, 1983, 1999 and 2001) that clearly stated the Agency’s view that such exemptions are not permissible in SIP provisions, consistent with CAA requirements. It would also have been unnecessary for the Kushner letter discussing the impact of the *Sierra Club* decision on NESHAP standards to have mentioned that the statutory definition of emission limitation also precludes exemptions for SSM provisions in SIPs. The EPA had already made this point explicitly in the 1999 SSM Guidance, when it explained the reasons why such provisions would be contrary to CAA requirements for SIPs.<sup>162</sup> Thus, the EPA’s guidance for SIP provisions concerning emissions during SSM events had already explicitly articulated that provisions with exemptions for SSM events could not be approved pursuant to CAA section 110(l), because that would interfere with a fundamental requirement of the CAA, *i.e.*, the definition of “emission limitation” in section 302(k).

Finally, the EPA disagrees that the Kushner letter could override the applicability of the logic of the *Sierra Club* decision to SIP provisions, even if the Agency had any such intentions. The D.C. Circuit’s evaluation of the issue with respect to the EPA’s own regulations was premised not solely upon the particular requirements of section 112 but also more broadly on the meaning and specific definition of the term “emission limitation” under the CAA. That definition applies to SIP provisions as well as to the EPA’s own regulations. Because the SSM Policy in effect at the time of the *Sierra Club* decision and the time of the Kushner letter already stated that EPA interpreted the CAA to prohibit SIP provisions that exempt emissions during SSM events, there would have

<sup>159</sup> See, e.g., 40 CFR 50.18 (24-hour PM<sub>2.5</sub> NAAQS met when 98th-percentile monitored value is less than or equal to 35 ug/m<sup>3</sup>).

<sup>160</sup> See, e.g., *Mich. Dep’t of Env’tl. Quality v. Browner*, 230 F.3d 181 (6th Cir. 2000) (upholding disapproval of SIP provisions because they contained exemptions applicable to SSM events); *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1170 (10th Cir. 2012) (upholding the EPA’s issuance of a SIP call to a state to correct SSM-related deficiencies).

<sup>161</sup> See Letter from A. Kushner, Director, Office of Civil Enforcement, EPA/OECA, regarding “*Vacatur of Startup, Shutdown, and Malfunction (SSM) Exemption* (40 CFR 63.6(f)(1) and 63.6(h)(1)),” July 22, 2009, in the rulemaking docket.

<sup>157</sup> See CAA section 165(a)(4) and CAA section 173(a)(2).

<sup>158</sup> 753 F.3d 1444, 1452–53 (9th Cir. 1985).

<sup>162</sup> See 1999 SSM Guidance at 2, footnote 1.

been no need for the Kushner letter to speak to this issue.<sup>163</sup>

e. Comments that the EPA's proposed action on the Petition is incorrect because the Agency's recent MATS rule and Area Source Boiler rule regulations contain exemptions for emissions during SSM events.

*Comment:* Many commenters asserted that the EPA's February 2013 proposed action to find SIP provisions with exemptions for emissions during SSM events to be substantially inadequate is arbitrary and capricious because recent Agency NESHAP regulations under section 112 contain similar exemptions. Commenters pointed to recently promulgated rules such as the MATS rule<sup>164</sup> and the Area Source Boiler rule<sup>165</sup> as examples of NESHAP regulations that they claim contain similar exemptions. According to commenters, the emission limitations in EPA's own MATS rule "allow excess emissions during SSM events," suggesting that the Agency created exemptions for such emissions.<sup>166</sup> Other commenters similarly argued that the EPA created emission limitations in the Area Source Boiler rule that do not apply "continuously" because the numerical limitations do not apply during startup and shutdown.<sup>167</sup> In short, these commenters argued that the EPA is being arbitrary and capricious because it is holding emission limitations in SIPs to a different and higher standard than emission limitations under its own NSPS and NESHAP regulations.

*Response:* The EPA disagrees with these commenters. The recent EPA rulemaking efforts that commenters claim are at odds with EPA's SIP call are completely consistent with the Agency's action today. First, as explained in the February 2013 proposal, the EPA has not taken the position that sources must be subject to SIP emission limitations that are set at the same numerical level at all times, or that are expressed as numerical limitations at all times. As the EPA stated, "[i]f justified, the state can develop special emission

limitations or control measures that apply during startup or shutdown if the source cannot meet the otherwise applicable emission limitation in the SIP."<sup>168</sup> The EPA's 1999 SSM Guidance articulated that SIP provisions may include alternative emission limitations applicable during startup and shutdown as part of a continuously applicable emission limitation when properly developed and otherwise consistent with CAA requirements. Moreover, the EPA recommended specific criteria relevant to the creation of such alternative emission limitations. The EPA reiterated that guidance in the February 2013 proposal and is providing a clarified version of the guidance in this final action. This issue is addressed in more detail in section VII.B.2 of this document.

The EPA also disagrees with the assertion that it is holding state SIP provisions to a different standard than its own NSPS and NESHAP regulations. The EPA notes that SIP emission limitations and NSPS and NESHAP emission limitations are, of course, designed for different purposes (e.g., to meet the NAAQS versus to reduce emissions of HAPs) and have to meet some different statutory requirements (e.g., to be RACM versus be standards that are compliant with section 112). However, the EPA understands the commenters' claim to be more specifically that the Agency is applying a different interpretation of the term "emission limitation" and taking a different approach to the treatment of emissions during SSM events in its own regulations, even in recent regulations developed subsequent to the *Sierra Club* decision. The EPA believes that this argument reflects a misunderstanding of both the February 2013 proposal and what the Agency's own new regulations contain.

The MATS rule and the Area Source Boiler rule in fact illustrate how the EPA is creating emission limitations that apply continuously, with numerical limitations or combinations of numerical limitations and other specific technological control requirements or work practice requirements applicable during startup and shutdown, depending upon what is appropriate for the source category and the pollutants at issue. For example, in the MATS rule the EPA has promulgated regulations that impose emission limitations on various subcategories of sources to address HAP emissions. To do so, the EPA developed emission limitations to address the relevant pollutants using a

combination of numerical emission limitations and work practices. The work practice requirements specifically apply to sources during startup and shutdown and are thus components of the continuously applicable emission limitations.<sup>169</sup>

Similarly, in the Area Source Boiler rule<sup>170</sup> the EPA has imposed emission limitations on affected sources for PM, mercury and CO. The specific emission limitations that apply vary depending upon the subcategory of boiler. The emission limitations include a combination of numerical emission limitations and work practice requirements that together apply during all modes of source operation. For some subcategories, the standards that apply during startup and shutdown differ from the standards that apply during other periods of operation. This illustrates what the EPA considers the correct approach to creating emission limitations: (i) The emission limitation contains no exemption for emissions during SSM events; (ii) the component of the emission limitation that applies during startup and shutdown is clearly stated and obviously is an emission limitation that applies to the source; (iii) the component of the emission limitation that applies during startup and shutdown meets the applicable stringency level for this type of emission limitation (in this case section 112); and (iv) the emission limitation contains requirements to make it legally and practically enforceable. In short, the Area Source Boiler rule established emission limitations that apply continuously, in accordance with the requirements of the CAA, and consistent with the court's decision in the *Sierra Club* decision. States with SIP provisions that are deficient because they contain automatic or discretionary exemptions for emissions during SSM events may wish to consider the Agency's own approach when they develop SIP revisions in response to this SIP call.

f. Comments that section 110(a)(2)(A) authorizes states to have SIP provisions with exemptions for emissions during SSM events because they are not "emission limitations" and are not

<sup>163</sup> See, e.g., 1999 SSM Guidance, Attachment at 1 ("any provision that allows for an automatic exemption for excess emissions is prohibited").

<sup>164</sup> The mercury and air toxics standards (MATS) rule for power plants regulates emissions from new and existing coal- and oil-fired electric utility steam generating units (EGUs) under 40 CFR part 63, subpart UUUUU.

<sup>165</sup> The Area Source Boiler rule regulates industrial, commercial and institutional boilers at area sources under 40 CFR part 63, subpart JJJJJJ.

<sup>166</sup> See MATS rule, requirements during startup, shutdown and malfunction, 77 FR 9304 at 9370 (February 16, 2012).

<sup>167</sup> See Area Source Boiler rule, notice of final action on reconsideration, periods of startup and shutdown, 78 FR 7487 at 7496 (February 1, 2013).

<sup>168</sup> See February 2013 proposal, 78 FR 12459 at 12488 (February 22, 2013).

<sup>169</sup> The EPA took final action on a petition for reconsideration concerning the MATS rule and the Utility NSPS that made certain revisions related to the emission limitations and work practices applicable during startup and shutdown. Those revisions did not, however, alter the basic structure of the emission limitations as numerical limitations, or numerical limitations with work practice components during startup and shutdown, depending upon the source category and the pollutants at issue. See 79 FR 68777 (November 19, 2014).

<sup>170</sup> 78 FR 7487 (February 1, 2013).

subject to the requirement to be “continuous.”

*Comment:* Section 110(a)(2)(A) requires states to have SIPs that include emission limitations for purposes of imposing restrictions on sources of emissions in order to attain and maintain the NAAQS and to meet other CAA requirements. Some commenters noted that, in addition to “emission limitations,” section 110(a)(2)(A) also explicitly refers to “other control measures, means, or techniques.” Unlike the term “emission limitation,” which is defined in section 302(k), commenters contended that these “other control[s]” need not be continuous. Accordingly, these commenters argued that emission controls in SIP provisions that either contain, or are subject to, SSM exemptions can be viewed merely as examples of these “other control measures, means, or techniques” that are validly included in SIPs and that do not have to limit emissions from sources on a continuous basis. Specifically, these commenters asserted that the plain text of section 110(a)(2)(A) does not require SIPs to include only emission limitations but rather requires that SIPs include “emission limitations,” “other control measures, means, or techniques,” or a mixture thereof. Furthermore, according to some of these commenters, an interpretation of section 110(a)(2)(A) that requires all SIP provisions to be “emission limitations,” and thus subject to the requirement that they be continuous, would render the “other control” language in the statute superfluous.

*Response:* The EPA agrees with the commenters that SIPs do not have to be composed solely of numerical emission limitations, that SIPs can contain other forms of controls in addition to emission limitations and that certain forms of controls other than emission limitations may not need to apply to sources continuously. However, the EPA disagrees with the commenters’ conclusion that the mere act of labeling certain SIP provisions as “control measures, means, or techniques” rather than as “emission limitations” can be a means to circumvent the requirement that emission limitations must regulate sources continuously. To the extent that there is any ambiguity in the requirements of section 110(a)(2), it is not reasonable to interpret the statute to allow the explicit requirement that emission limitations must be continuous to be negated in this fashion.

As an initial matter, the SIP provisions that contain automatic or discretionary exemptions during SSM events at issue in this SIP call excuse compliance with requirements that

presumably were submitted to the EPA as emission limitations, were intended to limit emissions on a continuous basis or were otherwise included to ensure that the SIP contained continuous emission limitations. All of the SIP provisions at issue in this action provide automatic or discretionary exemptions from emission limitations that are formulated as restrictions on the “quantity, rate, or concentration” of emissions from affected sources, just as section 302(k) describes the purpose of an emission limitation. Longstanding EPA regulations applicable to SIPs require that states have a control strategy to provide for attainment and maintenance of the NAAQS.<sup>171</sup> The required “control strategy” is defined to be the combination of measures including, but not limited to, “emission limitations,” “emission control measures applicable to in use motor vehicles” and “transportation control measures” listed in section 108(f).<sup>172</sup> The regulatory definition of “emission limitation” applicable to SIP provisions tracks the statutory definition of section 302(k) and notably also does not define the term to allow exemptions for emissions during SSM events.<sup>173</sup> To the EPA’s knowledge, none of the specific SIP provisions that contain or that are subject to the automatic or discretionary exemptions at issue in this SIP call action were developed by the states with the intention or expectation that absent the exemption they would not apply at all times when the source is in operation; *i.e.*, they impose restrictions on emissions that were intended to apply continuously when the source is emitting pollutants. Logically, the states intended the emission limitations to impose limits that apply continuously at all times when the affected sources are emitting pollutants or else there would have been no impetus to include any exemptions for emissions during SSM events.

However, even if the EPA were to accept the commenters’ premise *arguendo*—that inclusion of an SSM exemption in a given SIP provision turns “emission limitations” into “other control measures, means, or techniques,” this would not be a reasonable reading of the requirements of section 110(a)(2)(A) and section 302(k) for several reasons. To the extent that either section 110(a)(2)(A) or section 302(k) is ambiguous with respect to this point, the EPA does not interpret the CAA to allow exemptions for emissions during SSM events in SIP

provisions in the way advocated by the commenters.

First, section 110(a)(2)(A) explicitly requires that SIPs must contain emission limitations as necessary to meet various CAA requirements. Section 302(k) requires that such emission limitations must limit “the quantity, rate, or concentrations of emissions of air pollutants on a *continuous* basis.” Moreover, section 302(k) reiterates that the term “continuous emission limitation” also specifically includes “any requirement relating to the operation or maintenance of a source to assure *continuous* emission reduction.” Lest there be doubt, section 302(m) provides a definition for the related term “means of emission limitation” as “a system of continuous emissions reduction (including the use of specific technology or fuels with specified pollution characteristics).” In the *Sierra Club v. Johnson* decision, the D.C. Circuit concluded that the statutory definition of “emission limitation” in section 302(k) precludes exemptions for emissions during SSM events because such exemptions are inconsistent with the requirement for continuous controls.<sup>174</sup> Given the emphasis that the statute places on the requirement that sources be subject to continuous emission controls, and given the emphasis that courts have placed on the requirement that sources be subject to continuous controls on their emissions, the EPA believes that it is illogical that the statutory requirement for continuous controls on sources could be subverted merely by the act of labeling a given SIP provision a “control measure” rather than an “emission limitation.” The commenters’ argument that if a given SIP provision contains an SSM exemption, it is merely a “control measure[ ], mean[ ], or technique[ ]” reduces the explicit requirement for continuous controls on emissions to a semantic exercise.

Second, the EPA believes that the commenters’ reading of the statute to permit SIP provisions to contain an SSM exemption by virtue of what it is labeled is incorrect if taken to its logical extreme. The commenters’ interpretation of section 110(a)(2)(A) would theoretically allow a SIP to contain no emission limitations whatsoever, merely a collection of requirements labeled “control measures” so that sources can be excused from having to limit emissions on a continuous basis. This result is contrary to judicially approved EPA

<sup>171</sup> See, e.g., 40 CFR 51.100.

<sup>172</sup> See, e.g., 40 CFR 51.100(n).

<sup>173</sup> See 40 CFR 51.100(z).

<sup>174</sup> See *Sierra Club v. Johnson*, 551 F.3d 1019, 1027–28 (citing CAA sections 112(d)(2), 302(k)).

interpretations of prior versions of the CAA as requiring all SIPs to include continuously applicable emission limitations and only requiring “other” additional controls “as may be necessary” to satisfy the NAAQS.<sup>175</sup> Additionally, this result is contrary to legislative history of the 1990 Clean Air Act Amendments, which indicates that in slightly revising this portion of section 110(a)(2)(A), Congress intended to merely “combine and streamline” previously existing SIP requirements into a single provision, not to vitiate statutory requirements concerning emission limitations.<sup>176</sup>

Finally, the EPA’s interpretation of the requirements of section 110(a)(2) does not render the “other control” language in the statute superfluous as claimed by the commenters. In addition to emission limitations, the EPA interprets that section to allow other “control measures, means or techniques” as contemplated by the statute. For example, the EPA’s regulations implementing SIP requirements explicitly enumerate nine separate types of measures that states may include in SIPs.<sup>177</sup> This list of nine different forms of potential SIP provisions to reduce emissions varies broadly, from measures that “impose emission charges or taxes or other economic incentives or disincentives” to “changes in schedules or methods of operation of commercial or industrial facilities” to “any transportation control measure including those transportation measures listed in section 108(f).” The EPA made clear that this list is not all-inclusive. In addition, the EPA has, when appropriate, approved SIP provisions that impose various forms of emissions controls that are not, by definition, emission limitations.<sup>178</sup>

<sup>175</sup> See, e.g., *Kennecott Copper Corp. v. Train*, 526 F.2d 1149, 1153 (9th Cir. 1975). The current version of section 110(a)(2)(A) is admittedly worded differently than the 1970 version. However, for purposes of these commenters the critical distinction is not that Congress changed the location of the word “necessary” but rather that Congress changed the subject that “necessary” modifies—and thus the entire scope of 110(a)(2)(A)—from satisfying the NAAQS to meeting “applicable requirements” of the entire CAA.

<sup>176</sup> See, e.g., S. Rept. 101–228, at 20 (noting that the structure of section 110(a)(2)(A) as it appears today reflects congressional intent to “combine and streamline” previously existing SIP requirements into a single provision).

<sup>177</sup> See 40 CFR 51.100(n).

<sup>178</sup> See, e.g., 71 FR 7683 (February 14, 2006) (approving as BACM the use of “conservation management practices” to control fugitive dust emissions from agricultural sources, including techniques that limit emissions only during certain activities or times); 68 FR 56181 (September 30, 2003) (approving as BACM an “episodic wood burning curtailment” program that restricts the use

Thus, the commenters are in error in their belief that the EPA’s reading of the statute to require that SIPs contain emission limitations that apply continuously ignores the other forms of potential measures that section 110(a)(2)(A) authorizes.

Section 110(a)(2) requires SIPs to include enforceable emission limitations and other controls “as necessary or appropriate to meet the applicable requirements” of the CAA. Regardless of whether commenters’ semantic labeling arguments are valid in the abstract, they are not correct with respect to the fundamental CAA requirements for SIPs relating to continuous emission limitations. The automatic or discretionary exemptions for emissions during SSM events in the SIP provisions at issue in this SIP call authorize exemptions from statutorily required emission limitations. To the extent that such a SIP provision would functionally or legally exempt sources from regulation during SSM events, the SIP provision fails to be a continuously applicable enforceable emission limitation as required by the CAA. The fact that a SIP may also contain “other control[s]” as advocated by the commenters does not negate the statutory requirement that emission limitations must apply continuously.

g. Comments that the definition of “emission limitation” in section 302(k) does not require that all forms of emission limitations must apply continuously.

*Comment:* Section 110(a)(2)(A) requires that SIPs must contain emission limitations, and section 302(k) defines the term “emission limitation” to mean a limit on emissions from a source that applies continuously. A number of commenters disagreed that section 302(k) requires that *all* “emission limitations” have to be “continuous.” The commenters argued that section 302(k) establishes two distinct categories of emission limitations: (1) Requirements that “limit[ ] the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction,” and (2) requirements constituting a “design, equipment, work practice or operational standard promulgated under this chapter.” These commenters claimed that only the first purported category is emission limitations that must be continuous and that the second purported category is

of wood-burning stoves based on predicted particulate matter concentrations).

emission limitations that do not need to apply continuously. Accordingly, these commenters asserted that SIP provisions that are rendered noncontinuous by inclusion of exemptions for emissions during SSM events are still legally valid “emission limitations” because they fall within the second category. Other commenters separately contended that under section 302(k), SIP provisions imposing requirements “relating to the operation or maintenance of sources” do not need to be continuous, unlike those imposing requirements that limit “the quantity, rate, or concentration of emissions or air pollutants.”

*Response:* The EPA disagrees with the commenters’ view that section 302(k) establishes two discrete categories of emission limitations, only one of which must reduce continuous emissions on a continuous basis. The EPA acknowledges that the text of section 302(k) is ambiguous with respect to this point, but the Agency does not agree with the commenters’ interpretation of the statute. The statutory text of section 302(k) begins with a catch-all definition of the term “emission limitation” as “a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis . . . .”<sup>179</sup> The EPA believes that the rest of the first sentence in section 302(k), beginning with the word “including,” is best read as a list of examples of types of measures that satisfy this general definition. In other words, the remainder of the sentence provide examples of types of SIP provisions that could be used to limit emissions on a continuous basis, including any design standard, equipment standard, work practice standard or operational standard promulgated under the CAA, as well as “any requirement relating to the operation or maintenance of a source to assure continuous emission reduction.” However, each of these forms of emission limitation would be required to apply at all times, or be required to apply in combination at all times, in order to meet the fundamental requirement that the emission limitation serves to limit emissions from the affected sources continuously. Thus, the EPA interprets the term “emission limitation” to permit emission limitations that are composed of a combination of numerical limitations, technological control requirements and/or work practice requirements, so long as they are components of an emission limitation that applies continuously. This interpretation accords with

<sup>179</sup> CAA section 302(k).

statutory context,<sup>180</sup> the legislative history regarding the definition of “emission limitation,”<sup>181</sup> judicial interpretations of section 302(k)<sup>182</sup> and the EPA’s definition of “emission limitation” in its SIP regulations.<sup>183</sup> Accordingly, the EPA’s interpretation of section 302(k) is reasonable.

The EPA also disagrees with the commenters who contended that the third clause of section 302(k) authorizes exemptions for emissions during SSM events in emission limitations. The commenters argued that requirements “relating to the operation or maintenance of sources” do not have to be continuous. The EPA believes that this reading of the statute is simply in error, because section 302(k) on its face provides that these requirements must “assure continuous emission reduction.”<sup>184</sup>

h. Comments that exemptions or affirmative defenses are not only not prohibited, but are actually required by the CAA because they are necessary to make an emission limitation “reasonable” or “achievable” for sources that cannot comply during SSM events.

*Comment:* Commenters argued that some emission limitations currently in SIPs are only “reasonable” or technologically “achievable” because they include exemptions or affirmative defenses applicable to emissions during SSM events. According to these commenters, without exemptions or affirmative defenses to excuse sources from compliance with the limits during SSM events, these emission limitations would not be reasonable or achievable as required by law. To support these contentions, commenters cited case law from the early 1970s to argue that the CAA requires emission limitations in SIP provisions to include exemptions or affirmative defenses for SSM events.

*Response:* The EPA agrees that SIP provisions should impose emission

limitations that are reasonable and achievable by sources, so long as they are also consistent with the applicable legal requirements for that type of provision. The EPA acknowledges that in some cases, emission limitations may need to include alternative numerical limitations, technological controls or work practices during some modes of operation, such as startup and shutdown. As explained in detail in the February 2013 proposal and in this action, the EPA interprets the CAA to allow SIP provisions to include different numerical limitations or other control requirements as components of a continuously applicable emission limitation, so long as the SIP provision meets all other applicable requirements. However, the EPA disagrees with these commenters’ conclusions that the need for “reasonable” and “achievable” emission limitations provides a legal justification for exemptions or affirmative defenses for excess emissions during SSM events.

First, many of the commenters erroneously presupposed that an emission limitation must continuously control emissions at the *same* rate, quantity, or concentration at all times. For sources or source categories that cannot comply with otherwise applicable emission limitations during certain modes of operation, such as startup and shutdown, the state may elect to develop alternative emission limitations applicable during those events as a component of the SIP provision. The EPA has provided recommended criteria for states to use in developing appropriate alternative emission limitations. Appropriate alternative emission limitations would ensure the existence of requirements that limit the quantity, rate or concentration of pollutants from the affected sources on a continuous basis, while also providing differing limitations tailored specifically to limit emissions during specified modes of source operation. As long as those differing limitations are components of a continuously applicable emission limitation that meets other applicable substantive requirements (e.g., is RACT for stationary sources in nonattainment areas) and that is legally and practically enforceable, then such alternative emission limitations are valid. States are not required to create such alternative emission limitations, but to do so is an acceptable approach.

Second, these commenters pointed to no provision of the CAA requiring or allowing exemptions or affirmative defenses for SSM events. Instead, they contend that D.C. Circuit opinions in *Portland Cement Association v.*

*Ruckelshaus*<sup>185</sup> and *Essex Chemical Corp. v. Ruckelshaus*<sup>186</sup> require SIPs to include exemptions for emissions during SSM events. As an initial matter, these cases predate amendments to the CAA that expressly defined “emission limitation” as a requirement that continuously limits emissions. Furthermore, even accepting these commenters’ interpretations of those cases (which as explained below, EPA does not), any purported holdings to that effect have been further eroded by more recent case law from the D.C. Circuit and other courts. Most importantly, the *Sierra Club v. Johnson* decision has reiterated that emission limitations must apply continuously in order to comply with section 302(k), and the logic of *NRDC v. EPA* decision indicates that affirmative defense provisions are not appropriate because they purport to alter the jurisdiction of the courts.<sup>187</sup>

In addition to these more recent legal developments, however, the two earlier D.C. Circuit cases highlighted by commenters simply did not hold what commenters claim that they held. With respect to the *Portland Cement Association* decision, commenters selectively quoted from the case for the proposition that the D.C. Circuit had “acknowledged” that malfunctions are an inescapable aspect of industrial life and that EPA must make allowances for malfunctions when promulgating standards. The full sentence from the opinion, however, makes clear that the D.C. Circuit was merely summarizing the “concern of manufacturers,” not stating the court’s own position.<sup>188</sup> To the contrary, the EPA believes that *Portland Cement* stands for the broader proposition that a system incorporating flexibility is reasonable and consistent with the overall intent of the CAA, and the EPA merely “may” take such flexibility into account.<sup>189</sup> As relevant to this action, the flexibility provided states to ensure continuous controls by developing alternative emission limitations is fully consistent with that view of the CAA. SIP provisions that include alternative emission limitations provide the sort of “limited safety valve” contemplated by the courts that can serve to make SIP emission limitations more achievable without authorizing complete exemptions for

<sup>180</sup> See, e.g., CAA section 302(m) (defining “means of emission limitation” as a “system of continuous emission reduction”).

<sup>181</sup> See e.g., H.R. Rep. 95–294, at 92 (1977) (explaining that the definition of “emission limitation,” like the definition of “standard of performance,” was intended to “[ma]ke clear that constant or continuous means of reducing emissions must be used to meet th[ose] requirements”); S. Rep. 95–127, at 94 (explaining that the definition of “emission limitation” was intended to “clarify the committee’s view that the only acceptable basic strategy is one based on continuous emission control,” rather than “unacceptable” “[i]ntermittent controls or dispersion techniques . . .”).

<sup>182</sup> See, e.g., *Sierra Club v. Johnson*, 551 F.3d 1019, 1027–28 (D.C. Cir. 2008).

<sup>183</sup> See 40 CFR 51.100(n) (defining “emission limitation” as a requirement that limits emissions on a continuous basis).

<sup>184</sup> See CAA section 302(k).

<sup>185</sup> 486 F.2d 375 (D.C. Cir. 1973).

<sup>186</sup> 486 F.2d 427 (D.C. Cir. 1973).

<sup>187</sup> See *Sierra Club v. Johnson*, 551 F.3d 1019 (D.C. Cir. 2008); *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014).

<sup>188</sup> *Portland Cement Ass’n*, 486 F.2d at 398.

<sup>189</sup> *Id.* at 399.



emissions during SSM events in violation of statutory requirements.<sup>190</sup>

Commenters also cited *Essex Chemical Corp.* for the proposition that SSM exemptions are necessary to ensure that standards are reasonable. This court decision, however, also did not hold that emission limitations must provide exemptions or affirmative defenses for excess emissions during SSM events. To the contrary, the petitioners' complaint in *Essex Chemical Corp.* was that EPA had "fail[ed] to provide that *lesser standards*, or no standards at all, should apply when the stationary source is experiencing startup, shutdown, or mechanical malfunctions through no fault of the manufacturer."<sup>191</sup> It was these variant provisions that, in the court's opinion, "appear[ed] necessary" to ensure that the standards before it were reasonable.<sup>192</sup> Again, the EPA believes that emission limitations in SIP provisions may include alternative emission limitations that can provide those "lesser standards" that apply during startup and shutdown events consistent with the court's opinion but also ensure that emissions are continuously limited as required by the 1977 CAA Amendments defining "emission limitation."

As a legal matter, the court in *Essex Chemical* was reviewing a specific "never to be exceeded" standard for new and modified sources and addressed only whether the EPA's failure to provide some form of flexibility during SSM events was supported by the record;<sup>193</sup> the court was not interpreting whether the CAA inherently required such exemptions (rather than alternative limits) regardless of future developments in technology. Accordingly, the D.C. Circuit ultimately remanded the challenged standards to the EPA for reconsideration, not because SSM exemptions are mandatory but rather because of comments made by the EPA Acting Administrator and deficiencies identified in the administrative record with respect to "never to be exceeded" limits for those specific standards. In short, the *Essex Chemical* court did not hold that the CAA "requires" emission limitations to include exemptions for emissions during SSM events as suggested by commenters.

Furthermore, the EPA notes that the most salient legal holding of *Essex Chemical* with respect to achievability

is not what the court said about the circumstances peculiar to the EPA's development of those specific standards but rather is the court's holding that standards of performance can be "achievable" even if there is no facility "currently in operation which can at all times and under all circumstances meet the standards . . . ." <sup>194</sup> Thus, the decision supports the EPA's conclusion that the CAA requires appropriately drawn emission limitations that apply on a continuous basis. As explained in section IV of this document, SIP provisions also cannot include the affirmative defenses advocated by commenters, because those are inconsistent with CAA provisions concerning the jurisdiction of the courts.

i. Comments that the EPA is requiring that all SIP emission limitations must be "numerical" at all times and set at the same numerical level at all times.

*Comment:* Many commenters on the February 2013 proposal evidently believed that the EPA was proposing an interpretation of the term "emission limitation" under section 302(k) that would require all SIP provisions to impose numerical emission limits, and that such limits must be set at the same numerical level at all times. These commenters argued that numerical emission limitations are not required by the text of section 302(k). For example, commenters pointed to section 302(k)'s use of "work practice or operational standard[s]" as evidence that an emission limitation may be composed of more than merely numerical criteria. These commenters also reiterated their view that section 302(k) allows for or requires alternative limits during periods of SSM, including non-numerical alternative limits such as work practice or operational standards.

*Response:* At the outset, the EPA notes that it did not intend to imply that all emission limitations in SIP provisions must be expressed numerically, or that they must be set at the same numerical level for all modes of source operation. To the contrary, the EPA intended to indicate that states may elect to create emission limitations that include alternative emission limitations that apply during certain modes of source operation, such as startup and shutdown. This was the reason for inclusion of the recommended criteria for states to develop appropriate alternative emission limitations applicable during startup and shutdown in section VII.A of the February 2013 proposal. The EPA has provided similar

recommended criteria in this final action (see section VII.B.2 of this document). The EPA agrees that neither section 110(a)(2)(A) nor section 302(k) inherently requires that SIP emission limitations must be expressed numerically. Furthermore, section 302(k) does not itself require imposition of numerical limitations or foreclose the use of higher numerical levels, specific technological controls or work practices during certain modes of operation.

Although some CAA programs may require or impose a presumption that emission limitations be expressed numerically, the text of section 110(a)(2)(A) and section 302(k) does not expressly state a preference for emission limitations that are in all cases numerical in form.<sup>195</sup> Rather, as many commenters pointed out, the critical aspect of an emission limitation in general is that it be a "requirement . . . which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis . . . ." <sup>196</sup> Accordingly, although other regulatory requirements may also apply, a non-numerical design standard, equipment standard, work practice standard or operational standard could theoretically meet the definition of "emission limitation" for purposes of section 302(k) if it continuously limited the quantity, rate or concentration of air pollutants.<sup>197</sup> By contrast, if a non-numerical requirement does not itself (or in combination with other components of the emission limitation) limit the quantity, rate or concentration of air pollutants on a continuous basis, then the non-numerical standard (or overarching requirement) does not meet the statutory definition of an emission limitation under section 302(k).

Finally, the EPA does not believe that section 110(a)(2)(A) or section 302(k) mandates that an emission limitation be composed of a single, uniformly applicable numerical emission limitation. As the EPA stated in the February 2013 proposal, "[i]f sources in fact cannot meet the otherwise applicable emission limitations during planned events such as startup and shutdown, then an air agency can develop specific alternative

<sup>190</sup> *Id.* (citing *International Harvester*, 478 F.2d 615, 641 (D.C. Cir. 1973)).

<sup>191</sup> *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d at 433 (emphasis added).

<sup>192</sup> *See id.*

<sup>193</sup> *Id.* ("the record does not support the 'never to be exceeded' standard currently in force").

<sup>194</sup> *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973).

<sup>195</sup> Numerical requirements or preferences for some emission limitations flow from substantive requirements of specific CAA programs, which are incorporated into section 110(a)(2)(A) by the requirement that SIPs "include enforceable emission limitations . . . as may be necessary or appropriate to meet the applicable requirements of" the CAA. CAA section 110(a)(2)(A).

<sup>196</sup> *See, e.g., id.*, section 112(h)(4).

<sup>197</sup> For example, emission limitations must meet the requirements of various substantive provisions of the CAA and must be legally and practically enforceable.

requirements that apply during such periods, so long as they meet other applicable CAA requirements.”<sup>198</sup> As explained in the EPA’s response in section VII.A.3 of this document regarding the meaning of the statutory term “continuous,” the critical aspect for purposes of section 302(k) is not whether the emission limitation is expressed as a static versus variable numerical limitation but rather whether as a whole it constitutes a requirement that limits emissions on a continuous basis. Furthermore, any emission limitation must also meet all other applicable CAA requirements concerning stringency and enforceability.

j. Comments that an emission limitation can be “continuous” even if it has different numerical limitations applicable during some modes of source operation or has a combination of numerical emission limitations and specific control technologies or work practices applicable during other modes of operation.

*Comment:* Several commenters argued that an emission limitation can be “continuous” under section 302(k) even if it provides different substantive requirements applicable during SSM events. One commenter illustrated this position with a hypothetical:

[W]hile Section 302 requires “emission limits” to be “continuous,” it does not specify . . . that the same “emission limit” must apply at all times. That is, if a state chooses to require sources to comply with a 40% opacity limit during steady-state operations, the Act does not then require the state to apply that 40% limit at all times, including startup, shutdown and malfunction events.

Commenters pointed to a number of sources as justification for this position, including the text of section 302(k), relevant case law, legislative history of the 1977 CAA Amendments, prior EPA interpretations, and practical concerns.

*Response:* The EPA agrees with these commenters’ conclusion that an “emission limitation” under section 302(k) does not need to be expressed as a static, inflexible limit on emissions. Rather, a SIP provision qualifying as an “emission limitation” consistent with section 302(k) must merely limit “the quantity, rate, or concentration” of emissions, and must do so “on a continuous basis.” The critical aspect for purposes of section 302(k) is that the SIP provision impose limits on emissions on a continuous basis, regardless of whether the emission limitation as a whole is expressed numerically or as a combination of

numerical limitations, specific control technology requirements and/or work practice requirements, and regardless of whether the emission limitation is static or variable. For example, so long as the SIP provision meets other applicable requirements, it may impose different numerical limitations for startup and shutdown.

The EPA also agrees that the text of section 302(k) does not require states to impose emission limitations that include a static, inflexible standard. Rather, the term “emission limitation” is merely defined as a “requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis. . . .” The continuous limits imposed by emission limitations are a fundamental distinction between emission limitations and the other control measures, means or techniques that may also limit emissions.<sup>199</sup> The text of section 302(k), however, does not distinguish between a variable or static “requirement” that continuously limits emissions—all that is required is that the emissions are limited on a continuous basis.

This interpretation is consistent with prior EPA interpretations of section 302(k), as well as relevant case law. In *Kamp v. Hernandez*, the U.S. Court of Appeals for the Ninth Circuit (Ninth Circuit) upheld the EPA’s interpretation of “continuous” in section 302(k), as requiring that “some limitation on emissions, although not necessarily the same limitation, is always imposed” on the source.<sup>200</sup> More recently, the D.C. Circuit favorably cited *Kamp* when holding that section 302(k) requires emission standards to limit emissions on a continuous basis and precludes exemptions for emissions during SSM events.<sup>201</sup>

Legislative history confirms that Congress was primarily concerned that there be constant or continuous means of reducing emissions—not that the nature of those controls could not be different during different modes of operation.<sup>202</sup> For example, legislative

history from the 1977 CAA Amendments states that Congress added section 302(k)’s definition of “emission limitation” to:

. . . ma[ke] clear that constant or continuous means of reducing emissions must be used to meet these requirements. By the same token, intermittent or supplemental controls or other temporary, periodic, or limited systems of control would not be permitted as a final means of compliance.<sup>203</sup>

Although this legislative history demonstrates congressional intent that any “emission limitation” would require limits on emissions at all times, this history does not necessarily indicate that the emission limitation must consist of a single static numerical limitation. Accordingly, this legislative history is consistent with the EPA’s view that section 302(k) requires continuous limits on emissions and that variable (albeit still continuous) limits on emissions can qualify as an emission limitation for purposes of section 302(k).

Finally, although the EPA agrees with these commenters’ conclusion, the EPA does not agree with these commenters’ view that practical concerns *require* states in all cases to establish alternative emission limitations for modes of operation such as startup and shutdown within any continuously applicable emission limitation. Principles of cooperative federalism incorporated into section 110 allow states great leeway in developing SIP emission limitations, provided those limitations comply with applicable legal requirements.<sup>204</sup> States are thus not required to establish alternative emission limitations for any sources during startup and shutdown, but they may elect to do so. Neither the definition of “emission limitation” in section 302(k) nor the requirements of section 110(a)(2)(A) explicitly require states to develop emission limitations that include alternative emission limitations for periods of SSM, just as they do not explicitly preclude states from doing so.

requirements”); S. Rep. 95–127, at 94 (explaining that the definition of “emission limitation” was intended to “clarify the committee’s view that the only acceptable basic strategy is one based on continuous emission control,” rather than “unacceptable” “[i]ntermittent controls or dispersion techniques . . .”).

<sup>203</sup> H.R. Rep. 95–294, at 92 (1977), as reprinted in 1977 U.S.C.C.A.N. 1077, 1170; *Sierra Club v. Johnson*, 551 F.3d at 1027 (quoting the same); *Kamp v. Hernandez*, 752 F.2d at 1453–54 (quoting the same).

<sup>204</sup> As discussed above and elsewhere in this document, those requirements include satisfying the definition of “emission limitation” under CAA section 302(k), and being “enforceable” in accordance with section 110(a)(2)(A).

<sup>199</sup> See CAA section 110(a)(2)(A).

<sup>200</sup> *Kamp v. Hernandez*, 752 F.2d 1444, 1452–53 (9th Cir. 1985) (citing *Chevron, U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837 (1984)) (upholding EPA’s “broader definition of ‘continuous’” under section 302(k)).

<sup>201</sup> *Sierra Club v. Johnson*, 551 F.3d 1019, 1027–28 (D.C. Cir. 2008) (quoting *Kamp*, 752 F.2d at 1452).

<sup>202</sup> See, e.g., H.R. Rep. 95–294, at 92 (1977) (explaining that the definition of “emission limitation,” like the definition of “standard of performance,” was intended to “ma[ke] clear that constant or continuous means of reducing emissions must be used to meet th[ose]

<sup>198</sup> 78 FR 12459 at 12471.

k. Comments that an emission limitation can be “continuous” even if it includes periods of exemptions from the emission limitation.

*Comment:* Commenters asserted that a requirement limiting emissions can be “continuous” even if a SIP provision includes periods of exemption from that limit. For example, some commenters contended that SSM exemptions only excuse compliance with emission limitations for a “short duration,” or “brief” period of time, and that these purportedly ephemeral interruptions should not be viewed as rendering the requirement noncontinuous. Other commenters contended that the EPA misinterpreted portions of the D.C. Circuit’s opinion in *Sierra Club v. Johnson*,<sup>205</sup> interpreting section 302(k). Specifically, this group of commenters claimed that because the holding of that case was based on a combined reading of sections 112 and 302(k), the court’s interpretation of the word “continuous” in section 302(k) does not extend outside the context of section 112. This included one commenter who suggested, in a one-sentence footnote, that “[i]n the cooperative-federalism context”—presumably of section 110—“the standard of flexibility that Congress gave the States with respect to selecting the elements of their SIPs is not necessarily the same standard Congress set to govern EPA’s responsibility to establish the NAAQS or section 112 standards.” Still other commenters further argued that the EPA mischaracterized legislative history discussing “continuous” in section 302(k). According to these commenters, the context of legislative history on section 302(k) indicates that Congress did not intend for the word “continuous” to be given its plain meaning but rather intended to use “continuous” in relation only to specific types of intermittent controls.

*Response:* The EPA disagrees with these commenters. First, commenters’ interpretation would contravene the plain meaning of “continuous.” Section 302(k) defines “emission limitation” as a requirement that “limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis. . . .”<sup>206</sup> Although the word “continuous” is not separately defined in the Act, its plain and unambiguous meaning is “uninterrupted.”<sup>207</sup> Accordingly, to the extent that a SIP provision provides for any period of

time when a source is *not* subject to any requirement that limits emissions, the requirements limiting the source’s emissions by definition cannot do so “on a continuous basis.” Such a source would not be subject to an “emission limitation,” as that term is defined under section 302(k). The same principle applies even for “brief” exemptions from limits on emissions, because such exemptions nevertheless render the emission limitation noncontinuous.

Second, the EPA disagrees with commenters’ interpretation of the D.C. Circuit’s opinion in *Sierra Club*. While the court’s ultimate decision was based on “sections 112 and 302(k) . . . read together,”<sup>208</sup> the court’s analysis of what makes a standard “continuous” was based on section 302(k) alone.<sup>209</sup> Although the precise components of an emission limitation or standard may expand depending on which other provisions of the CAA are applicable, the bedrock definition for what it means to be an “emission limitation” under section 302(k) does not. Congress appeared to share the EPA’s view that section 302(k) provides a bedrock definition of “emission limitation” applicable “to all emission limitations under the act, not just to limitations under sections 110, 111, or 112 of the act.”<sup>210</sup> Accordingly, the D.C. Circuit’s interpretation of section 302(k) applies equally in the context of SIP provisions developed by states as in the context of MACT standards developed by the EPA, even if additional requirements may be different.<sup>211</sup>

Finally, the EPA rejects commenters’ contention that section 302(k)’s legislative history indicates that use of the word “continuous” in the definition of “emission limitation” was merely intended to prevent the use of

intermittent controls or, even more narrowly, only dispersion techniques. While legislative history of the 1977 Amendments discusses at length the concerns associated with these types of controls, section 302(k) was not intended to merely prevent the narrow problem of intermittent controls. To the contrary, the House Report states that under section 302(k)’s definition of emission limitation, “intermittent or supplemental controls or other temporary, periodic, or limited systems of control would not be permitted as a final means of compliance.”<sup>212</sup>

In explaining congressional intent behind adopting a statutory definition of “emission limitation,” the House Report articulated a rationale broader than would apply if Congress had merely intended to prohibit the tall stacks and dispersion techniques that commenters claim were targeted: “Each source’s prescribed emission limitation is the fundamental tool for assuring that ambient standards are attained and maintained. Without an enforceable emission limitation which will be complied with at all times, there can be no assurance that ambient standards will be attained and maintained.”<sup>213</sup> By contrast, Congress criticized limitations structured in ways that could not “provide assurances that the emission limitation will be met at all times,” or that would sometimes allow the “emission limitation [to] be exceeded, perhaps by a wide margin . . . .”<sup>214</sup> Such flaws “would defeat the remedy provision provided by section 304 of the act which allows citizens to assure compliance with emission limitations and other requirements of the act.”<sup>215</sup> Exemptions for emissions during SSM events have the same effects.<sup>216</sup>

In adopting section 302(k)’s definition of “emission limitation,” Congress did not merely intend to prohibit the use of intermittent controls as final compliance strategies—much less intermittent controls as narrowly defined by commenters to mean only dispersion techniques and certain “tall stacks.” Rather, Congress intended to eliminate the fundamental problems

<sup>208</sup> *Sierra Club*, 551 F.3d at 1027.

<sup>209</sup> See *id.* (quoting H.R. Rep. 95–294, at 92 (1977), as reprinted in 1977 U.S.C.A.N. 1077, 1170); see also *Kamp v. Hernandez*, 752 F.2d at 1453–54 (quoting the same and coming to the same conclusion).

<sup>210</sup> See H.R. 95–294, at 92 (1977); see also section 302 (stating that the definitions appearing therein apply “[w]hen used in this chapter”).

<sup>211</sup> The fact that CAA section 110 incorporates principles of cooperative federalism does not inevitably mean that the definition of “emission limitation” under section 302(k) changes depending on whether it is applied in the context of section 110 versus section 112. Accordingly, in the context of judicial interpretation of a statute, the U.S. Supreme Court has held that judges cannot “give the same statutory text different meanings in different cases.” *Clark v. Martinez*, 543 U.S. 371, 386 (2005). The EPA believes that the text and legislative history of section 302(k) evince congressional intent to consistently apply the definition of “emission limitation” under section 302(k) rather than to develop an inconsistent interpretation peculiar to section 110.

<sup>212</sup> H.R. 95–294, at 92 (emphasis added).

<sup>213</sup> *Id.* (emphasis added). The Senate Report expressed a similar sentiment. See S. Rep. No. 95–127, at 94–95 (1977) (explaining that the definition of “emission limitation” was intended “to clarify the committee’s view that the only acceptable basic strategy [for emission limitations in SIPs] is one based on continuous emission control”).

<sup>214</sup> See H.R. 95–294, at 92.

<sup>215</sup> See *id.*

<sup>216</sup> See, e.g., *NRDC v. EPA*, 749 F.3d 1055, 1064 (D.C. Cir. 2014) (holding that an affirmative defense for excess emissions during malfunctions contradicts the requirement that an emission limitation be “continuous”).

<sup>205</sup> 551 F.3d 1019 (D.C. Cir. 2008).

<sup>206</sup> CAA section 302(k).

<sup>207</sup> See *Webster’s Third New International Dictionary* 493–94 (Phillip Babcock Gove ed., Merriam-Webster 1993) (defining “continuous”).

that were illustrated by use of those controls.<sup>217</sup> SSM exemptions and affirmative defenses raise many of the same problems, and addressing those problems through this action fully accords with section 302(k)'s legislative history.

1. Comments that the “as may be necessary or appropriate” language in section 110(a)(2)(A) *per se* authorizes states to create exemptions in SIP emission limitations.

*Comment:* Some commenters contended that section 110(a)(2)(A) merely requires states to include emission limitations and other control measures in their SIPs “as may be necessary or appropriate.” These commenters interpreted that language as a broad delegation of discretion to states to develop SIP provisions that are necessary or appropriate to satisfy the particular needs of a state, as judged solely by that state. Some of the commenters argued that the EPA’s interpretation of “as may be necessary or appropriate” would, in all circumstances, improperly substitute the EPA’s judgment for that of the state concerning what emission limitations are necessary or appropriate. One commenter highlighted the EPA’s proposal to deny the Petition with respect to a specific SIP provision of the South Carolina SIP that entirely exempts a source category from regulation.<sup>218</sup> According to this commenter, if the “as may be necessary or appropriate” language grants states the authority to exempt a source category from regulation entirely, then it must allow states to exempt sources selectively during SSM events.

Some commenters further argued that regardless of what the terms “emission limitations” or “other control measures, means, or techniques” mean, section 110(a)(2)(A) only requires states to include such emission controls in SIPs “as may be necessary or appropriate” to meet the NAAQS, or some requirement germane to attainment of the NAAQS, such as various technology-based standards or general principles of enforceability. Commenters also disagreed with the EPA’s purported interpretation that the statutory phrase “as may be necessary” only qualifies what “other control[s]” are required, rather than also qualifying what

emission limitations are required. According to these commenters, that interpretation is a vestige of the 1970 CAA and was foreclosed by textual changes in the 1977 CAA Amendments or, alternatively, the 1990 CAA Amendments.

*Response:* The EPA disagrees with the commenters’ interpretation of the “as may be necessary or appropriate” language of section 110(a)(2)(A). As an initial matter, those commenters contending that section 110(a)(2)(A) is only concerned with what is “necessary or appropriate” to attain and maintain the NAAQS (or some requirement germane to the NAAQS) ignore the plain language of section 110(a)(2)(A). While the predecessor provisions to section 110(a)(2)(A) prior to the 1990 CAA Amendments did indeed speak in terms of emissions controls “necessary to insure attainment and maintenance of [the NAAQS],”<sup>219</sup> the statute in effect today requires controls “necessary or appropriate to meet the applicable requirements of this chapter,”<sup>220</sup> *i.e.*, to meet the requirements of the CAA as a whole. Thus, at a minimum, the EPA interprets the phrase “as may be necessary or appropriate” to include what is necessary or appropriate to meet legal requirements of the CAA, including the requirement that emission limitations must apply on a continuous basis.

Regardless of whether all SIPs must always contain emission limitations, the text of the CAA is clear that the EPA is at a minimum tasked with determining whether SIPs include all emission limitations that are “necessary” (*i.e.*, required) “to meet the applicable requirements of” that CAA. Broadly speaking, this requires that the EPA determine whether the SIP meets the basic legal requirements applicable to all SIPs (*e.g.*, the requirements of section 110(a)(2)(A) through (M)), whether the SIP contains emission limitations necessary to meet substantive requirements of the Act (*e.g.*, RACT-level controls in nonattainment areas) and whether all emission limitations and other controls, as well as the schedules and timetables for compliance, are legally and functionally enforceable.

In every state subject to this SIP call, the EPA has previously concluded in approving the existing SIP provisions that the emission limitations are necessary to comply with legal requirements of the CAA. The states in

question would not have developed and submitted them, and the EPA would not have approved them, unless the state and the EPA considered those emission limitations fulfilled a CAA requirement in the first instance. However, the automatic and discretionary exemptions for emissions during SSM events in the SIP provisions at issue in this action render those necessary emission limitations noncontinuous, and thus not meeting the statutory definition of “emission limitations” as defined in section 302(k). Accordingly, regardless of whether all SIPs must always include emission limitations, these specific SIP provisions fail to meet a fundamental requirement of the CAA because they do not impose the continuous emission limitations required by the Act.

The EPA also disagrees with the argument raised by commenters that its denial of the Petition with respect to a South Carolina SIP provision supports the validity of SSM exemptions in SIP emission limitations.<sup>221</sup> In that situation, the state determined that regulating the source category at issue was not a necessary or appropriate means of meeting the requirements of the CAA. The EPA’s approval of that provision indicates that the Agency agreed with that determination. This factual scenario is not the same as one in which the state has determined that regulation of the source category *is* necessary or appropriate to meet CAA requirements. Once the determination is made that the source category must or should be regulated, then the SIP provisions developed by the state to regulate the source must meet applicable requirements. These include that any limits on emissions must be consistent with CAA requirements, including the requirement that any emission limitation limit emissions on a continuous basis. The EPA agrees that a state can validly determine that regulation of a source category is not necessary, so long as this is consistent with CAA requirements. This is not the same as allowing impermissible exemptions for emissions from a source category that must be regulated.

Finally, the EPA does not agree with commenters’ allegations that that the EPA’s interpretation of section 110(a)(2)(A) eliminates the states’ discretion to take local concerns into account when developing their SIP provisions. Rather, for reasons discussed in more detail in the EPA’s response in section V.D.2 of this document regarding cooperative federalism, the EPA’s interpretation is

<sup>217</sup> See, *e.g.*, H.R. 95–294, at 94 (noting that the provision was intended to overcome “objections” to such measures, not merely the measures themselves); *id.* at 92 (indicating that the problems arise from “temporary, periodic, or limited systems of control” generally, not merely dispersion techniques or tall stacks).

<sup>218</sup> See 78 FR 12459 at 12512 (citing S.C. Code Ann. Regs. 61–62.5 St 5.2(I)(b)(14)).

<sup>219</sup> See, *e.g.*, Clean Air Act of 1970, Public Law 91–604, section 4(a), 84 Stat. 1676, 1680 (December 31, 1970).

<sup>220</sup> Section 110(a)(2)(A).

<sup>221</sup> See 78 FR 12459 at 12512 (citing S.C. Code Ann. Regs. 61–62.5 St 5.2(I)(b)(14)).

fully consistent with the principles of cooperative federalism codified in the CAA. As courts have concluded, although Congress provided states with “considerable latitude in fashioning SIPs, the CAA ‘nonetheless subjects the States to strict minimum compliance requirements’ and gives EPA the authority to determine a state’s compliance with the requirements.”<sup>222</sup> This interpretation is also consistent with congressional intent that the EPA exercise supervisory responsibility to ensure that, *inter alia*, SIPs satisfy the broad requirements that section 110(a)(2) mandates that SIPs “shall” satisfy.<sup>223</sup> Where the EPA determines that a SIP provision does not satisfy legal requirements, the EPA is not substituting its judgment for that of the state but rather is determining whether the state’s judgment falls within the wide boundaries of the CAA.

m. Comments that a “general duty” provision—or comparable generic provisions that require sources to “exercise good engineering judgment,” to “minimize emissions” or to “not cause a violation of the NAAQS”—inoculate or make up for exemptions in specific emission limitations that apply to the source.

*Comment:* Numerous commenters argued that even if some of the SIP provisions with SSM exemptions identified in this SIP call are not themselves emission limitations, they are nevertheless *components* of valid emission limitations. According to these commenters, some SIPs contain separate “general duty” provisions that are not affected by SSM exemptions and thus have the effect of limiting emissions from sources during SSM events that are explicitly exempted from the emission limitations in the SIP. These general-duty provisions vary, but most of them: (1) Instruct sources to “minimize emissions” consistent with good air pollution control practices, (2) prohibit sources from emitting pollutants that cause a violation of the NAAQS, or (3) prohibit source operators from “improperly operating or maintaining” their facilities.

Commenters contended that these general-duty provisions are requirements that—either alone or in

combination with other requirements—have the effect of limiting emissions on a continuous basis. In other words, the commenter asserted that these general-duty provisions impose limits on emissions during SSM events, when the otherwise applicable controls no longer apply. According to these commenters, SSM exemptions that excuse noncompliance with typical controls do not interrupt the continuous application of an “emission limitation,” because these general-duty provisions elsewhere in the SIP or in a separate permit are part of the emission limitation and apply even during SSM events.

Some commenters further argued that some SSM exemptions themselves demonstrate that sources remain subject to general-duty provisions during SSM events. These SSM exemptions require sources seeking to qualify for the exemption to demonstrate that, *inter alia*, they were at the time complying with certain general duties.

Accordingly, these commenters contended that the SSM exemption itself demonstrates that sources remain subject to requirements that limit their emissions during SSM events, even when the source is excused from complying with other components of the overarching emission limitation.

Finally, as evidence that these general-duty clauses must be permissible under the CAA, some commenters pointed to similar federal requirements established by the EPA under the NSPS and NESHAP programs.<sup>224</sup> These commenters argued that the D.C. Circuit’s decision in *Sierra Club v. Johnson*<sup>225</sup> was limited to circumstances unique to section 112 and does not support a *per se* prohibition on general-duty clauses operating as “emission limitations.”

*Response:* The EPA disagrees with these comments. As described elsewhere in this response to comments, all “emission limitations” must limit emissions of air pollutants on a continuous basis.<sup>226</sup> The specific requirements of a SIP emission limitation must be discernible on the face of the provision, must meet the applicable substantive and stringency requirements of the CAA and must be legally and practically enforceable. The general-duty clauses identified by these commenters are not part of the putative emission limitations contained in these SIP provisions. To the contrary, these general-duty clauses are often located in different parts of the SIP and are often not cross-referenced or otherwise

identified as part of the putative continuously applicable emission limitation.

Furthermore, the fact that a SIP provision includes prerequisites to qualifying for an SSM exemption does not mean those prerequisites are themselves an “alternative emission limitation” applicable during SSM events. The text and context of the SIP provisions at issue in this SIP call action make clear that the conditions under which sources qualify for an SSM exemption are not themselves components of an overarching emission limitation—*i.e.*, a requirement that limits emissions of air pollutants from the affected source on a continuous basis. Rather, these provisions merely identify the circumstances when sources are exempt from emission limitations.

Reviewing an example of the SIP provisions cited by commenters is illustrative of this point. For example, several commenters pointed to provisions in Alabama’s SIP that excuse a source from complying with an otherwise applicable emission limitation only when the permittee “took all reasonable steps to minimize emissions” and the “permitted facility was at the time being properly operated.” According to commenters, the general duties in this provision—to take reasonable steps to minimize emissions, and to properly operate the facility—ensure that even during SSM events, the permittee remains subject to requirements limiting emissions.

However, a review of the provisions themselves in context—not selectively quoted—reveals that these general-duty provisions were included in the SIP not as components of an emission limitation but rather as components of an *exception* to that emission limitation. In order to qualify, the SIP requires the permittee to have taken “all reasonable steps to minimize levels of emissions that exceeded the emission standard”<sup>227</sup>—an acknowledgement that the emissions to be “minimize[d]” are those that “exceed[]” (*i.e.*, go beyond) the required limits of “the emission standard.” In case there were any doubt that the general-duty provisions identified are elements of an exemption from an emission limitation, rather than components of the emission limitation itself, the provisions apply during what the Alabama SIP calls “[e]xceedances of *emission limitations*”<sup>228</sup> and are found within a

<sup>222</sup> *Michigan v. EPA*, 213 F.3d 663, 687 (D.C. Cir. 2000) (quoting *Union Elec. Co. v. EPA*, 427 U.S. 246, 256–57 (1976)).

<sup>223</sup> With respect to section 110(a)(2)(A), this means that a SIP must at least contain legitimate, enforceable emission limitations to the extent they are necessary or appropriate “to meet the applicable requirements” of the Act. Likewise, SIPs cannot have enforcement discretion provisions or affirmative defense provisions that contravene the fundamental requirements concerning the enforcement of SIP provisions.

<sup>224</sup> See, e.g., 40 CFR 63.6(e)(3).

<sup>225</sup> 551 F.3d 1019, 1027–28 (D.C. Cir. 2008).

<sup>226</sup> CAA section 302(k).

<sup>227</sup> Ala. Admin. Code Rule 335–3–14–.03(h)(2)(ii)(III) (emphasis added).

<sup>228</sup> *Id.* at 335–3–14–.03(h)(2)(ii) (emphasis added).

broader section addressing “Exceptions to violations of emission limitations.”<sup>229</sup> By exempting sources from compliance with “the emission standard,” these exemptions render the SIP emission limitation noncontinuous, contrary to section 302(k).<sup>230</sup>

The consequences for failing to satisfy the preconditions for an exemption further bolster the conclusion that these preconditions are not themselves part of an emission limitation. Failure to meet the “general duty” preconditions for an SSM exemption means that the source remains subject to the otherwise applicable emission limitation during the SSM event and is thus liable for violating the emission limitation. If those general duties were independent parts of an emission limitation (rather than merely preconditions for an exemption), then one would expect that periods of time could exist when the source was liable for violating those general duties rather than the default emission limitation.

The general-duty provisions that apply as part of the SSM exemption are not alternative emission limitations; they merely define an unlawful exemption to an emission limitation. States have discretion to fix this issue in a number of ways, including by removing the exceptions entirely, by replacing these exceptions with alternative emission limitations including specific control technologies or work practices that do ensure continuous limits on emissions or by reformulating the entire emission limitation.

In addition to the EPA’s fundamental disagreement with commenters that these general-duty provisions are actually components of emission limitations, the EPA has additional concerns about whether many of these provisions could operate as stand-alone emission limitations even if they were properly identified as portions of the overall emissions limitations in the SIP.<sup>231</sup> Furthermore, some of these general-duty provisions do not meet the level of stringency required to be an “emission limitation” compliant with specific substantive provisions of the CAA applicable to SIP provisions.<sup>232</sup> Accordingly, while states are free to include general-duty provisions in their

SIPs as separate additional requirements, for example, to ensure that owners and operators act consistent with reasonable standards of care, the EPA does not recommend using these background standards to bridge unlawful interruptions in an emission limitation.<sup>233</sup>

The NSPS and NESHAP emission standards and limitations that the EPA has issued since *Sierra Club* demonstrate the distinct roles played by emission limitations and general-duty provisions. The emission limitations themselves are clear and legally and functionally enforceable, and they are composed of obviously integrated requirements that limit emissions on a continuous basis during all modes of source operation. Crucially, the general-duty provisions in these post-*Sierra Club* regulations merely supplement the integrated emission limitation; they do not supplant the emission limitation, which independently requires continuous limits on emissions. As discussed elsewhere in this document, the fact that the EPA is in the process of updating its own regulations to comply with CAA requirements does not alter the legal requirements applicable to SIPs.

n. Comments that EPA’s action on the petition is a “change of policy.”

*Comment:* A number of commenters claimed that the EPA’s action on the Petition is illegitimate because it is based upon a “change of policy.” Some commenters claimed that the EPA’s reliance on the definition of “emission limitation” in section 302(k) and the requirements for SIP provisions in section 110(a)(2) as barring automatic exemptions are “new.” These commenters claimed that the EPA has historically relied on the fact that NAAQS are ambient-standard-based and that the EPA has relied also on the fact that SSM exemptions had potential adverse air quality impacts as the basis for interpreting the CAA to preclude exemptions. The commenters argued that this basis for the SSM Policy is evidenced by the fact that EPA itself historically included SSM exemptions in NSPS and NESHAP rules, which establish emission limitations that should be governed by section 302(k) as well.

Other commenters claimed that the EPA is changing its SSM Policy by seeking to revoke “enforcement discretion” exercised on the part of states, which the EPA specifically recognized as an acceptable approach in the 1983 SSM Guidance. A commenter asserted that “fairness principles” mean that the EPA cannot require a state to modify its SIP without substantial justification. The commenter further contended that the EPA’s claim that it has a longstanding interpretation of the CAA that automatic exemptions are not allowed in SIP provisions is false; otherwise, the commenter argued, the EPA would not have approved some of the provisions at issue in the SIP call long after 1982. As evidence for this argument, the commenter pointed to the West Virginia regulations that provide an automatic exemption.

Finally, other commenters argued that the EPA’s changed interpretation of the CAA requires an acknowledgement that the SSM Policy is being changed and a rational explanation for such change. These commenters noted that the EPA previously argued in a brief for the type of exemption provisions that it is now claiming are deficient, citing *Sierra Club v. Johnson*, No. 02–1135 (D.C. Cir. March 14, 2008). The commenters claimed that the EPA has provided no rational basis for its change in interpretation of the CAA concerning exemptions for emissions during SSM events.

*Response:* The EPA’s longstanding position, at least since issuance of the 1982 SSM Guidance, is that SIP provisions providing an exemption from emission limitations for emissions during SSM events are prohibited by the CAA. The EPA’s guidance documents issued in 1982 and 1983 expressly recognized that in place of exemptions, states should exercise enforcement discretion in determining whether to pursue a violation of an emission limitation. In the 1983 SSM Guidance, the EPA made recommendations for states that elected to adopt specific SIP provisions affecting their own exercise of enforcement discretion, so long as those provisions do not apply to enforcement discretion of the EPA or other parties under the citizen suit provision of the CAA. More than 15 years ago, in the 1999 SSM Guidance, the EPA reiterated its longstanding position that it is inappropriate for SIPs to exempt SSM emissions from compliance with emission limitations and repeated that instead of incorporating exemptions, enforcement discretion could be an appropriate tool. In addition, EPA clarified at that time that a narrowly tailored affirmative

<sup>229</sup> *Id.* at 335–3–14–.03(h) (emphasis added).

<sup>230</sup> See CAA section 302(k) (defining “emission limitation” and “emission standard”).

<sup>231</sup> See *Sierra Club*, 551 F.3d at 1026 (discussing the EPA’s prior determinations that “compliance with the general duty on its own was insufficient to prevent the SSM exemption from becoming a ‘blanket’ exemption”).

<sup>232</sup> See, e.g., *Sierra Club v. Johnson*, 551 F.3d at 1027–28 (so holding with respect to section 112).

<sup>233</sup> For example, the EPA has concerns the some of these general-duty provisions, if at any point relied upon as the sole requirement purportedly limiting emissions, could undermine the ability to ensure compliance with SIP emission limitations relied on to achieve the NAAQS and other relevant CAA requirements at all times. See section 110(a)(2)(A), (C); *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1161–62 (10th Cir. 2012).

defense might also be an appropriate tool for addressing excess emissions in a SIP provision. However, in response to recent court decisions, and as discussed in detail in section IV of this document, the EPA no longer interprets the CAA to permit affirmative defense provisions in SIPs.

Although the EPA did not expressly rely on the definition of “emission limitation” in section 302(k) as the basis for its SSM Policy in each of these guidance documents, it did rely on the purpose of the NAAQS program and the underlying statutory provisions (including section 110) governing that program. In the 1999 SSM Guidance, however, the EPA indicated that the definition of emission limitation in section 302(k) was part of the basis for its position concerning SIP provisions.<sup>234</sup> After the EPA issued the 1999 SSM Guidance, the D.C. Circuit issued a decision holding that the definition of emission limitation in section 302(k) does not allow for periods when sources are not subject to emissions standards.<sup>235</sup> While the court’s decision concerned the section 112 program addressing hazardous air pollutants, the EPA believes that the court’s ruling concerning section 302(k) applies equally in the context of SIP provisions because the definition of emission limitation also applies to SIP requirements. That court’s decision is consistent with and provides support for the EPA’s longstanding position in the SSM Policy that exemptions from compliance with SIP emission limitations are not appropriate under the CAA.

Commenters claimed that by interpreting the CAA to prohibit exemptions for emissions during SSM events the EPA is revoking “enforcement discretion” exercised by the state. This is not true. As part of state programs governing enforcement, states can include regulatory provisions or may adopt policies setting forth criteria for how they plan to exercise their own enforcement authority. Under section 110(a)(2), states must have adequate authority to enforce provisions adopted into the SIP, but states can establish criteria for how they plan to exercise that authority. Such enforcement discretion provisions cannot, however, impinge upon the enforcement authority of the EPA or of others pursuant to the citizen suit provision of the CAA. The EPA notes

that the requirement for adequate enforcement authority to enforce CAA requirements is likewise a bar to automatic exemptions from compliance during SSM events.

Commenters confused the EPA’s evolution in describing the basis for its longstanding SSM Policy as a change in the SSM Policy itself. The EPA’s interpretation of the CAA in the SSM Policy has not changed with respect to exemptions for emissions during SSM events. The EPA’s discussion of the basis for its longstanding interpretation has evolved and become more robust over time as the EPA has responded to comments in rulemakings and in response to court decisions. In support of its interpretation of the CAA that exemptions for periods of SSM are not acceptable in SIPs, the EPA has long relied on its view that NAAQS are health-based standards and that exemptions undermine the ability of SIPs to attain and maintain the NAAQS, to protect PSD increments, to improve visibility and to meet other CAA requirements. By contrast, the EPA historically took the position that SSM exemptions were acceptable for certain technology-based standards, such as NSPS and NESHAP standards, and argued that position in the *Sierra Club* case cited by commenters. However, in that case, the court explicitly ruled against the EPA’s interpretation, holding that exemptions for emissions during SSM events are precluded by the definition of “emission limitation” in CAA section 302(k). The *Sierra Club* court’s rationale thus provided additional support for the EPA’s longstanding position with respect to SSM exemptions in SIP provisions, and in more recent actions the EPA has relied on the reasoning from the court’s decision as further support for its current SSM Policy. Thus, even if the EPA were proceeding under a “change of policy” here as the commenters claimed, the EPA has adequately explained the basis for its current SSM Policy, including the basis for any actual “change” in that guidance (*e.g.*, the actual change in the SSM Policy with respect to affirmative defense provisions in SIPs). Courts have upheld an agency’s authority to revise its interpretation of a statute, so long as that change of interpretation is explained.<sup>236</sup>

o. Comments that the EPA’s proposed action on the petition is based on a “changed interpretation” of the definition of “emission limitation.”

*Comment:* Commenters claimed that the EPA’s action on the Petition is based on a changed interpretation of the term “emission limitation” and that the Agency cannot apply that changed interpretation “retroactively.” One commenter cited several cases for the proposition that retroactivity is disfavored and that the EPA is applying this new interpretation retroactively to existing SIP provisions. The commenter claimed that the EPA approved the existing SIP provisions with full knowledge of what those provisions were and “consistent with the provisions EPA itself adopted and courts required.” The commenter characterized the SIP provisions for which the EPA is issuing a SIP call as “enforcement discretion” provisions and “affirmative defense” provisions for startup and shutdown. The commenter contended that the EPA does not have authority to issue a SIP call on the premise that the CAA is less flexible than the Agency previously thought. The commenter concluded that “[t]he factors of repose, reasonable reliance, and settled expectations favor not imposing EPA’s new interpretations.”

*Response:* The EPA disagrees that this SIP call action has “retroactive” effect. As recognized by the commenter, this SIP call action does not automatically change the terms of the existing SIP or of any existing SIP provision, nor does it mean that affected sources could be held liable in an enforcement case for past emissions that occurred when the deficient SIP provisions still applied. Rather, the EPA is exercising its clear statutory authority to call for the affected states to revise specific deficient SIP provisions so that the SIP provisions will comply with the requirements of the CAA prospectively and so that affected sources will be required to comply with the revised SIP provisions prospectively.

To the extent that a SIP provision complied with previous EPA interpretations of the CAA that the Agency has since determined are flawed, or to the extent that the EPA erroneously approved a SIP provision that was inconsistent with the terms of the CAA, the EPA disagrees that it is precluded from requiring the state to modify its SIP now so that it is consistent with the Act. In fact, that is precisely the type of situation that the SIP call provision of the CAA is designed to address. Specifically, section 110(k)(5) begins, “[w]hensoever” the EPA determines that an applicable implementation plan is inadequate to attain or maintain the NAAQS, to mitigate adequately interstate pollutant transport, or “to otherwise comply with

<sup>234</sup> See 1999 SSM Guidance at 2, footnote 1. The EPA included section 302(k) among the statutory provisions that formed the basis for its interpretations of the CAA in that document.

<sup>235</sup> *Sierra Club*, 551 F.3d 1019 (D.C. Cir. 2008).

<sup>236</sup> The EPA emphasized this important point in the SNPR. See 79 FR 55919 at 55931.



any requirement” of the Act, the EPA must call for the SIP to be revised. The commenter does not question that sections 110(a)(2) and 302(k) are requirements of the Act. Thus, the EPA has authority under section 110(k)(5) to call on states to revise their SIP provisions to be consistent with those requirements.

The EPA disagrees that the doctrines of “repose,” “reasonable reliance” and “settled expectations” preclude such an action. The CAA is clear that “whenever” the EPA determines that a SIP provision is inconsistent with the statute, “the Administrator shall” notify the state of the inadequacies and establish a schedule for correction. This language does not provide the Agency with discretion to consider the factors cited by the commenter in deciding whether to call for a SIP revision once it is determined to be flawed. Here, the EPA has determined that the SIP provisions at issue are flawed and thus the Agency was required to notify the states to correct the inadequacies.

p. Comments that the EPA should not encourage states to rely on enforcement discretion because this will inevitably lead to states’ creating emission limitations that some sources cannot meet.

*Comment:* Commenters claimed that it is not appropriate for the EPA to encourage states to exercise enforcement discretion rather than to encourage them either to define periods when numerical emission limitations do not apply or to develop alternative emission limitations or other control measures. The commenters contended that inclusion of an enforcement discretion provision in a SIP is superfluous. The commenter cited to *Portland Cement*, where the D.C. Circuit court stated that “an excessively broad theory of enforcement discretion might endanger securing compliance with promulgated standards.”<sup>237</sup> The commenter also cited the *Marathon Oil* case in the Ninth Circuit in which the court rejected an approach that relied heavily on enforcement discretion. The commenter then asserted that sources are liable for violations and that “[s]ources should not be required to litigate remedy for violations they cannot avoid.”<sup>238</sup> The commenter concluded that it is “unreasonable for EPA to subject itself to claims that it must exercise its federal enforcement authority in the event a state refuses to enforce unachievable standards, or for states to put source owners and operators in jeopardy of

criminal prosecution for starting up a source with knowledge that a numerical emission limitation might be exceeded. In summary, the commenter appeared to argue that the EPA should require states to establish alternative numerical emission limitations or other control requirements during SSM events, rather than merely eliminating SSM exemptions and relying on enforcement discretion to address SSM emissions.

*Response:* The EPA disagrees with the commenter’s suggestion that the EPA should discourage states from relying on enforcement discretion. Enforcement discretion is a valid state prerogative, long recognized by courts. However, the EPA agrees with the commenter that states should not adopt overly broad enforcement discretion provisions for inclusion in their SIPs. Section 110(a)(2) requires states to have adequate enforcement authority, and overly broad enforcement discretion provisions would run afoul of this requirement if they have the effect of precluding adequate state authority to enforce SIP requirements. The EPA also agrees that states may elect to include alternative emission limitations, whether expressed numerically or otherwise, for certain periods of normal operations, including startup and shutdown.

It is unclear precisely what the commenters are advocating when they suggest that sources should not be subject to litigating a remedy for violations they cannot avoid. The likely interpretation is that the commenters believe that excess emissions during unavoidable events should be automatically exempted (*i.e.*, not considered a violation). This approach was rejected by the court in *Sierra Club v. Johnson*, because it was not consistent with the definition of emission limitation in section 302(k).<sup>239</sup> As previously explained in the February 2013 proposal and in this document, the EPA believes that definition, and thus the court’s holding in *Sierra Club*, is equally relevant for the SIP program.

With respect to a commenter’s concerns about criminal enforcement, the EPA disagrees that sources will be unable to start operations because they will automatically be subject to criminal prosecution if an emission limitation is exceeded during a malfunction. Under CAA section 113(c), criminal enforcement for violation of a SIP can occur when a person knowingly violates a requirement or prohibition of an implementation plan “during any period of federally assumed enforcement or more than 30 days after having been notified” under the

provisions governing notification that the person is violating that specific requirement of the SIP. The EPA is unaware of any jurisdictions where federally assumed enforcement is in force, and the EPA does not anticipate that this situation would arise often. Thus, in almost every case, criminal enforcement would not occur in the absence of a pending notification of a civil enforcement case and could then apply only for repeated violation of the activity at issue in that civil action. Moreover, the concern raised by the commenter is one that would exist if there is any requirement that applies during a period of malfunction beyond the owner’s control. The commenter’s preferred way to address this concern would be to exempt these periods from compliance with any requirements, an approach rejected by the *Sierra Club* court as inconsistent with the definition of “emission limitation” and an approach that the EPA’s longstanding SSM Policy has explained is inconsistent with the purpose of the NAAQS program, which is to ensure public health is protected through attainment and maintenance of the NAAQS, protection of PSD increments, improvement of visibility and compliance with other requirements of the CAA.

Finally, to the extent that the commenter was advocating that the EPA should require states to develop SIP provisions that impose alternative emission limitations during certain modes of source operation such as startup and shutdown to replace SSM exemptions, the EPA notes that to require states to do so would not be consistent with the principles of cooperative federalism and could be misconstrued as the Agency’s imposing a specific control requirement in contravention of the *Virginia* decision.<sup>240</sup> As the commenter elsewhere itself argued, states have broad discretion in how to develop SIP provisions to meet the objectives of the CAA, so long as those provisions also meet the legal requirements of the CAA. To the extent that a state would prefer to have emission limitations that apply continuously, without higher numerical levels or specific technological controls or work practice standards applicable during modes of operation such as startup and shutdown, that is the prerogative of the state, so long as the revised SIP provision otherwise meets

<sup>237</sup> 486 F.2d at 399 n.91.

<sup>238</sup> *Marathon Oil Co. v. Environmental Protection Agency*, 564 F.2d 1253 (9th Cir. 1977).

<sup>239</sup> 551 F.3d 1019 (D.C. Cir. 2008).

<sup>240</sup> See *Virginia v. EPA*, 108 F.3d 1397 (D.C. Cir. 1997) (SIP call remanded and vacated because, *inter alia*, the EPA had issued a SIP call that required states to adopt a particular control measure for mobile sources).

CAA requirements. If a state determines that it is reasonable to require a source to meet a specific emission limitation on a continuous basis and also decides to rely on its own enforcement discretion to determine whether a violation of that emission limit should be subject to enforcement, then the EPA believes that to do so is within the discretion of the state.

q. Comments that the EPA's action on the Petition is inconsistent with the Credible Evidence Rule.

*Comment:* A number of commenters raised concerns based upon how the EPA's statements in the February 2013 proposal relate to the Credible Evidence Rule issued in 1997.<sup>241</sup> For example, one commenter argued that throughout the February 2013 proposal, when the EPA stated that excess emissions during SSM events should be treated as "violations" of the applicable SIP emission limitations, the Agency was contradicting the Credible Evidence Rule and other provisions of law. The commenter emphasized that the determination of whether excess emissions during an SSM event are in fact a "violation" of the applicable SIP provisions must be made using the appropriate reference test method. In addition, the commenter asserted that whether any other form of information may be used as "credible evidence" of a violation must be evaluated by the trier of fact in a specific enforcement action. Another commenter raised a different argument based on the Credible Evidence Rule, claiming that the EPA's statements in the preamble to that rulemaking contradict the EPA's statements in the February 2013 proposal and support the need for exemptions for emissions during SSM events. The implication of the commenter is that any such EPA statements in connection with the Credible Evidence Rule would negate the Agency's interpretation of the statutory requirements for SIP provisions as interpreted in the SSM Policy since at least 1982, the decision of the court in the *Sierra Club* case or any other actions such as the recent issuance of EPA regulations with no such SSM exemptions.

*Response:* The EPA agrees, in part, with the commenters who expressed concern that the Agency's statements in the February 2013 proposal could be misconstrued as a definitive determination that the excess emissions during any and all SSM events are automatically a violation of the applicable emission limitation, without

factual proof of that violation, and without the existence and scope of that violation being decided by the appropriate trier of fact. The EPA agrees that the alleged violation of the applicable SIP emission limitation, if not conceded by the source, must be established by the party bearing the burden of proof in a legal proceeding. The degree to which evidence of an alleged violation may derive from a specific reference method or any other credible evidence must be determined based upon the facts and circumstances of the exceedance of the emission limitations at issue.<sup>242</sup> This is a basic principle of enforcement actions under the CAA, but the EPA wishes to make this point clearly in this final action to avoid any unintended confusion between the legal standard creating the enforceable obligation and the evidentiary standard for proving a violation of that obligation.

The EPA's general statements in the February 2013 proposal, the SNPR and this final action about treatment of SSM emissions as a violation pertain to another basic principle, *i.e.*, that SIP provisions cannot treat emissions during SSM events as exempt, because this is inconsistent with CAA requirements. Thus, when the EPA explains that these emissions must be treated as "violations" in SIP provisions, this is meant in the sense that states with SSM exemptions need to remove them, replace them with alternative emission limitations that apply during startup and shutdown or eliminate them by revising the emission limitation as a whole. Once impermissible SSM exemptions are removed from the SIP, then any excess emissions during such events may be the subject of an enforcement action, in which the parties may use any appropriate evidence to prove or disprove the existence and scope of the alleged violation and the appropriate remedy for an established violation. To be clear, the fact that these emissions are currently exempt through inappropriate SIP provisions is a deficiency that the EPA is addressing in this action. Thus, the EPA disagrees with the commenters' suggestion that these emissions are never to be treated as violations simply because a deficient SIP provision currently includes an

SSM exemption. Once the SIP provisions are corrected, the excess emissions may be addressed through the legal structure for establishing an enforceable violation, which then may be proven using appropriate evidence, including test method evidence or other credible evidence. This means that excess emissions that occur during an SSM event will be treated for enforcement purposes in exactly the same manner as excess emissions that occur outside of SSM events. The EPA acknowledges that the limitation that applies during a startup or shutdown event might ultimately be different (whether higher or lower) than the limitation that applies at other times, if the state elects to replace the SSM exemption with an appropriate alternative emission limitation in response to this SIP call action.

The EPA also disagrees with commenters who claimed that statements by the Agency in the Credible Evidence Rule final rule preamble support the inclusion of exemptions for SSM events in SIP provisions. The commenter is correct that at that time, the EPA held the view that emission limitations in its own NSPS could be considered "continuous," notwithstanding the fact that they contained "specifically excused periods of noncompliance" (*i.e.*, exemptions from emission limitations during SSM events).<sup>243</sup> Similarly, at that time the EPA relied on a number of reported court decisions discussed in the preamble for the Credible Evidence Rule for determining at that time that NSPS could contain such exemptions in order to make the emission limitations "reasonable." However, after the court's decision in the *Sierra Club* case interpreting the definition of emission limitation in section 302(k), these EPA statements in the preamble for the Credible Evidence Rule are no longer correct and thus do not apply to the EPA's action in this document.

First, the EPA notes that these prior statements related to the Credible Evidence Rule specifically addressed not SIP provisions but rather the provisions of the Agency's own technologically based NSPS. The statements in the document make no reference to SIP provisions, which is unsurprising given that EPA's SSM Policy at the time indicated that no such SSM exemptions are appropriate in SIP provisions. Second, the EPA's justification for exemptions from emission limitations during SSM events in NSPS was made prior to the 2008

<sup>242</sup> For example, the degree to which data from continuous opacity monitoring systems (COMS) is evidence of violations of SIP opacity or PM mass emission limitations is a factual question that must be resolved on the facts and circumstances in the context of an enforcement action. *See, e.g., Sierra Club v. Pub. Ser. v. Co. of Colorado, Inc.*, 894 F.Supp. 1455 (D. Colo. 1995) (allowing use of COMS data to prove opacity limit violations).

<sup>243</sup> *Id.*, 62 FR 8314, 8323–24.

<sup>241</sup> *See* "Credible Evidence Revisions; Final rule," 62 FR 8314 (February 24, 1997).

decision of the court in the *Sierra Club* case. The EPA's interpretation of the statute and the case law to justify exemptions for emissions during SSM events in that 1997 document is no longer correct. Finally, the EPA in its own new NESHAP and NSPS regulations is now providing no exemptions for emissions during SSM events and is imposing specific numerical limitations or other control requirements on sources that apply to affected sources at all times, including during SSM events.<sup>244</sup> Thus, the statements in the 1997 Credible Evidence Rule preamble relied upon by commenters do not render the EPA's interpretation of the CAA with respect to SSM exemptions in SIP provisions in this action incorrect.

For clarity, the EPA emphasizes that it is in no way reopening, revising or otherwise amending the Credible Evidence Rule in this action. The EPA is merely responding to commenters who characterized the relationship between Agency statements in that rulemaking action and this SIP call action. The EPA also emphasizes that no changes to the Credible Evidence Rule should be necessary as a result of this rulemaking.

r. Comments that exemptions in opacity standards should be permissible because opacity is not a NAAQS pollutant.

*Comment:* Many state and industry commenters argued that the EPA should interpret the CAA to allow SIP provisions that impose opacity emission limitations to contain exemptions for SSM events or for other modes of source operation. The reasons given by commenters ranged broadly, but they included assertions that opacity is not a criteria pollutant, that opacity limitations serve no purpose other than as a tool to monitor PM control device performance, that there is no reliable correlation between opacity and PM mass, that there are circumstances during which sources may not be capable of meeting the otherwise applicable SIP opacity standards and that opacity is not an "air pollutant." Commenters also argued that because SIP opacity standards were originally established when the NAAQS applied to "total suspended particles" (TSP), rather than the current PM<sub>10</sub> and PM<sub>2.5</sub>, this alone should be a reason to allow SSM exemptions now that the NAAQS have been revised and the indicator

species changed. Some of the commenters acknowledged that their underlying concern is that requirements for COMS on certain sources have rendered it much easier to monitor exceedances of SIP opacity limits and to bring enforcement actions for alleged violations.

*Response:* The EPA agrees with many of the points made by commenters but not with the conclusion that the commenters drew from these points, *i.e.*, that exemptions for SSM events are appropriate in SIP provisions that impose opacity emission limitations.

First, although the EPA agrees that opacity itself is not a criteria pollutant and that there is thus no NAAQS for opacity, this does not mean that SIP opacity limitations are not "emission limitations" subject to the requirements of section 110(a)(2)(A) and do not need to be continuous. As the commenters often conceded, opacity is a surrogate for PM emissions for which there are NAAQS, and opacity has served this purpose since the beginning of the SIP program in the 1970s. SIP provisions that impose opacity emission limitations often date back to the earliest phases of the SIP program. From the outset, such opacity limitations have provided an important regulatory tool for implementing the PM NAAQS and for limiting PM emissions from sources. To this day, states continue to use opacity limitations in SIP provisions and the EPA continues to use opacity limitations in its own NSPS and NESHAP regulations, as necessary, for specific source categories.<sup>245</sup> EPA regulations applicable to SIPs explicitly define the term "emission limitation" to include opacity limits.<sup>246</sup> It is also important to note that these SIP provisions impose opacity emission limitations that sources must meet independently; *i.e.*, opacity limitations are independent "emission limitations" under section 110(a)(2)(A) that must, consistent with section 302(k), "limit[ ] the quantity, rate, or concentration of emissions of air pollutants on a continuous basis." These opacity emission limitations in SIP provisions are not stated conditionally as opacity limits that sources do not need to meet if they are otherwise in compliance with

PM mass emission limitations or with any other CAA requirements. Thus, the fact that opacity is not itself a criteria pollutant is irrelevant.

Second, although the EPA agrees that SIP opacity limitations also provide an important means of monitoring control device performance and thus indirectly provide a means to monitor compliance with PM emission limitations as well, this does not mean that opacity limits do not need to meet the statutory requirements for SIP emission limitations. Historically, opacity limits have been an important tool for implementation of the PM NAAQS, and in particular for the implementation and enforcement of PM mass limitations on sources to help attain and maintain the PM NAAQS. The EPA agrees that opacity is a useful tool to indicate overall operation and maintenance of a source and its emission control devices, such as electrostatic precipitators or baghouses. SIP opacity limitations provided this tool even before modern instruments that measure PM emissions on a direct, continuous basis existed. At a minimum, elevated opacity indicates potential problems with source design, operation or maintenance, or potential problems with incorrect operation of pollution control devices, especially at the elevated levels of many existing opacity standards. Well-run sources should be in compliance with typical SIP opacity limits. Opacity exceeding the applicable limitations can be indicative of problems that justify further investigation by sources and regulators, such as conducting a stack test to determine compliance with PM mass emission limitations. Not all sources have or will have PM CEMS, or have PM CEMS at all emission points, to monitor PM emissions directly, nor do PM CEMS necessarily obviate the need for opacity standards to regulate condensables, and thus there is a continued need for opacity emission limitations in SIPs. The continued need for SIP opacity limitations for this and other purposes contradicts the commenters' arguments concerning the validity of SSM exemptions.

Third, the EPA agrees that the precise correlation between opacity and PM mass emissions is not always known for a specific source under all operating conditions, unless there is parallel testing and measurement of the opacity and the PM emissions to determine the correlation at that particular source. Similarly, parametric monitoring can be used to establish such a correlation. Nevertheless, there is commonly a positive correlation between PM and opacity and thus elevated opacity is often indicative of additional PM

<sup>244</sup> See, *e.g.*, 40 CFR 60.42Da, where paragraph (e)(1) applies a numerical PM emission limitation at all times except during periods of startup and shutdown, and paragraph (e)(2) applies work practice standards during periods of startup and shutdown.

<sup>245</sup> See, *e.g.*, 40 CFR 60.42Da(b). The EPA's revised NSPS for this category imposes an opacity limit of 20 percent at all times, except for one 6-minute period per hour when the opacity may rise to 27 percent. Notably, as an option, sources may elect to install PM CEMS and be subject only to the revised particulate matter emission limitation.

<sup>246</sup> See 40 CFR 51.100(z) (defining the term "emission limitation" as limits on "the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirements which limit the level of opacity").

emissions from a source. Even in those instances where a precise correlation is not available, however, the use of opacity as a means to assure the reduction of PM emissions and to monitor source compliance remains a valid approach to regulation of PM from sources. In any event, the absence of a precise correlation between opacity and PM does not justify the complete exemptions from SIP opacity limitations during SSM events that the commenters advocate and instead suggests that it may be appropriate to replace such exemptions with valid and enforceable alternative numerical limitations or other control requirements as a component of the SIP opacity emission limitation that applies during startup and shutdown. Opacity emission limitations in SIPs must meet the statutory requirements for emission limitations.

Fourth, the EPA agrees with commenters that for some sources some PM controls cannot operate, or operate at full effectiveness and ideal efficiency, during startup and shutdown. Accordingly, as the commenters implicitly recognized, the resulting increases in PM emissions can result in elevated opacity and thus exceedances of the applicable SIP opacity emission limitations. In those situations where it is true that no additional emissions controls are available or would function more effectively to reduce PM emissions, and hence to reduce opacity, it may be appropriate for states to consider imposing an alternative opacity emission limitation applicable during startup and shutdown. As discussed in section VII.B.2 of this document, the EPA provides recommendations to states concerning how to develop such alternative emission limitations. To the extent that sources believe that a SIP provision with a higher opacity level for startup and shutdown may be justified, they may seek these alternative limitations from the state and they can presumably advocate for opacity standards that are tailored to reflect the correlation between PM mass and opacity at a specific source. Significantly, however, even if it is appropriate to impose a somewhat higher opacity limitation for some sources during specifically defined modes of operation such as startup and shutdown, that does not justify the total exemptions from SIP opacity emission limitations during SSM events that the commenters advocated. To provide total exemptions from SIP opacity emission limitations during SSM events does not provide any incentive for sources to be better

designed, operated, maintained and controlled to reduce emissions, nor does it comply with the most basic requirement that SIP emission limitations be continuous in accordance with section 302(k). As explained in section X.B of this document, the SIP revisions in response to this SIP call action will need to be consistent with the requirements of sections 110(k)(3), 110(l) and 193 as well as any other applicable requirements.

Fifth, the EPA notes that few commenters seriously argued that SIP provisions for opacity do not fit within the plain language of section 110(a)(2)(A) or the definition of “emission limitation” in section 302(k) or in EPA regulations applicable to SIP provisions. Section 110(a)(2)(A) requires SIPs to contain such enforceable emission limitations “as may be necessary and appropriate to meet the applicable requirements of” the CAA. Opacity limitations in SIP provisions are necessary and appropriate for a variety of reasons already described, including as a means to reduce PM emissions, as a means to monitor source compliance and to provide for more effective enforcement. Opacity limitations in SIP provisions also easily fit within the concept of a limit on the “quantity, rate or concentration of air pollutants” that relates to the “operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice or operational standard” under the CAA, as provided in section 302(k). The term “air pollutant” is defined broadly in section 302(g) to mean “any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air.” Even if opacity is not itself an air pollutant, it is clearly a means of monitoring and limiting emissions of PM from sources and is thus encompassed within the definition of “emission limitation” in section 302(k).<sup>247</sup> Significantly, existing EPA regulations applicable to SIP provisions already explicitly define the term “emission limitation” to include opacity limitations.<sup>248</sup>

Finally, the EPA does not agree with commenters who argued that because SIP opacity limitations were often originally imposed when the PM NAAQS was for TSP, it is legally acceptable to have exemptions for emissions during SSM events now that

the PM NAAQS use PM<sub>10</sub> and PM<sub>2.5</sub> as the indicator species. On a factual level, it is obvious that SIP provisions for opacity limitations are expressed in terms of percentage “opacity” unrelated to the size of the particles. Opacity represents the degree to which emissions reduce the transmission of light and obscures the view of an object in the background. In general, the more particles which scatter or absorb light that passes through an emissions point, the more light will be blocked, thus increasing the opacity percentage of the emissions plume. The EPA agrees that variables such as the size, number and composition of the particles in the emissions can result in variations in the percentage of opacity. Notwithstanding the changes in the NAAQS, however, both states and the EPA have continued to rely on opacity limitations because they serve the same purposes for the current PM<sub>10</sub> and PM<sub>2.5</sub> NAAQS (and other purposes such as the regulation of HAPs under section 112) that they previously did for the TSP NAAQS. Indeed, as the PM NAAQS have been revised to provide better protection of public health, the need for such opacity limitations continues unless there is a better means to monitor source compliance, such as PM CEMS. As with other SIP emission limitations, the EPA interprets the CAA to preclude SSM exemptions in opacity standards.

s. Comments that exemptions from SIP opacity limitations for excess emissions during SSM events should be allowed because such emissions are difficult to monitor or to control.

*Comment:* Several commenters argued that the EPA’s proposal of a SIP call for SIP opacity emission limitations that include an SSM exemption is arbitrary and capricious because it is difficult or impossible to monitor or measure opacity during SSM events. According to commenters, there is no compliance methodology to determine whether opacity limitations are met during SSM events and this is the reason that the EPA’s own general provisions for NSPS and NESHAP exclude emissions during SSM events as “not representative” of source operation. In the absence of a specific methodology to demonstrate compliance, the commenters argued that expecting sources to comply with any opacity emission limitations during SSM events is arbitrary and capricious. The commenters asserted that in light of this, the EPA must interpret the CAA to allow exemptions for SSM events in SIP opacity provisions.

A number of commenters also argued that because emission controls for PM do not function, or do not function as effectively or efficiently, during certain

<sup>247</sup> See *Sierra Club v. TVA*, 430 F.3d 1337, 1340 (11th Cir. 2005).

<sup>248</sup> See 40 CFR 51.100(z).

modes of source operation, the EPA should interpret the CAA to permit exemptions for SSM events in opacity emission limitations. Many commenters explained that certain types of emission controls at certain types of sources only operate at specific temperatures or under specific conditions. For example, many commenters stated that existing pollution control devices on certain categories of stationary sources do not operate, or do not operate as effectively or efficiently, during startup and shutdown. Based upon this assertion, the commenters argued that the EPA should interpret the CAA to allow total exemptions from SIP opacity emission limitations during such periods.

Commenters also characterized the EPA's February 2013 proposal as "particularly unreasonable" with respect to SSM exemptions in SIP opacity limitations, because those limitations should be allowed to exclude elevated opacity during periods when PM emissions controls devices are "not expected to operate correctly." According to commenters, treating the higher opacity during SSM events "as a violation simply because it is indicating something that is expected is ridiculous." As an example, the commenters specifically mentioned occurrences such as when a source's electrostatic precipitator (ESP) is not functioning or is not functioning properly as periods during which there should be an exemption from SIP opacity emission limitations.

*Response:* The EPA agrees with some of the points made by commenters but does not agree with the conclusions that the commenters drew from these points, *i.e.*, that alleged difficulties in monitoring, measuring or controlling opacity during some modes of source operation in general justify complete exemptions from opacity emission limitations during SSM events.

First, the EPA does not agree with the argument that there is no "compliance methodology" available for purposes of verifying compliance with SIP opacity limitations. Since the earliest phases of the SIP program, Reference Method 9 has been available as a means of verifying a source's compliance with applicable SIP opacity emission limitations. Whatever concerns the commenters may have with this test method, it is a valid method and it continues to be used as a means of verifying source compliance with opacity limitations and a source of evidence for determining whether there are violations of such emission

limitations.<sup>249</sup> Sources routinely monitor and certify to their compliance with SIP opacity limitations based upon Method 9. In addition, COMS have been available, and in some cases are required, as another means of monitoring emissions and verifying compliance with opacity emission limitations. With respect to COMS, commenters expressed concerns that they are not always accurate, are not always properly calibrated or are not always the reference test method for SIP opacity emission limitations, and other similar arguments. In this rulemaking, the EPA is not addressing these allegations concerning COMS but merely noting that COMS are an available means of monitoring opacity from sources and in appropriate circumstances can provide data meeting the EPA's criteria as credible evidence to be used to determine compliance with emission limitations.

Second, the EPA does not agree that the fact that its regulations concerning performance tests in 40 CFR 63.7(e) for NESHAP and in 40 CFR 60.8(c) for NSPS exclude SSM emissions for purposes of evaluation of emissions under normal operating conditions provides a justification for SSM exemptions from opacity emission limitations in SIP provisions. The D.C. Circuit decision in *Sierra Club* has already indicated that such exemptions are not permissible in emission limitations and vacated the general provisions applicable to NESHAP. In the case of the exemption language in 40 CFR 60.8(c) relevant to NSPS, the EPA acknowledges that it has not yet taken action to revise the language to eliminate that exemption. However, in promulgating new NSPS regulations subsequent to the *Sierra Club* decision, the EPA is including emission limitations for newly constructed, reconstructed and modified sources that apply continuously and including provisions expressly stating that the SSM exemptions in the General Provisions do not apply. The EPA notes that the commenter is also in error because the performance tests are intended to be a means of evaluating

emissions from sources during periods that are representative of source operation.

Third, the EPA does not agree with the premise that because certain forms or types of emission controls do not work, or do not work as effectively or efficiently, during certain modes of operation at some sources, it necessarily follows that sources should be totally exempt from emission limitations during such periods. The EPA interprets the CAA to require that SIP emission limitations be continuous. As explained in section VII.A of this document, emission limitations do not necessarily need to be expressed numerically, can have higher numerical levels during certain modes of operation, and may be composed of a combination of numerical limitations, specific technological control requirements and/or work practice requirements during certain modes of operation, so long as these emission limitations meet applicable CAA stringency requirements and are legally and practically enforceable. If it is factually accurate that a given source category requires a higher opacity limit during periods such as startup and shutdown, then the state may elect to develop one consistent with other CAA requirements. The EPA has provided guidance to states with criteria to consider in revising their SIP provisions to replace exemptions with an appropriate alternative emission limitation for such purposes. The EPA emphasizes that even if it is the case that existing control measures cannot operate, or cannot operate as effectively or efficiently, during startup and shutdown at a particular source, this does not legally justify a complete exemption from SIP emission limitations and may merely indicate that additional emission controls or work practices are necessary when the existing control measures are insufficient to meet the applicable SIP emission limitation. The EPA is taking this approach with its own recent NSPS and NESHAP regulations, when appropriate, in order to ensure that its own emission limitations are consistent with CAA requirements.

Finally, the EPA also disagrees with the logic of commenters that argued in favor of exemptions from SIP opacity limitations during periods when a source is most likely to violate them, *e.g.*, when the source's control devices are not functioning. Even if exemptions from SIP opacity emission limitations were legally permissible under the CAA, which they are not, it would be illogical to excuse compliance with the standards during the precise periods when opacity standards are most

<sup>249</sup> The EPA notes that one commenter characterized SIP opacity limits as "archaic" and suggested that the Agency should issue a SIP call requiring their removal from SIPs entirely. Unless and until regulators and sources have a better means of monitoring compliance with PM emission limitations on a continuous basis, such as through installation of PM CEMS, the EPA believes that opacity limits will continue to be a necessary part of emission limitations. There will continue to be sources of emissions for which it will not be cost-effective or technologically viable to require the installation of PM CEMS or for which opacity standards will be needed as a means of regulating condensables.

needed to monitor source compliance with SIP emission limitations and provide incentives to avoid and promptly correct malfunctions; *i.e.*, it would be illogical to require no legal restriction on emissions when the sources are most likely to be emitting the most air pollutants. Inclusion of exemptions for exceedances of SIP opacity limitations during such periods would remove incentives to design, maintain and operate the source correctly, and to promptly correct malfunctions, in order to assure that it meets the applicable SIP emission limitations. By exempting excess emissions during such events, the provision would undermine the enforcement structure of the CAA in section 113 and section 304, through which the air agency, the EPA and citizens are authorized to assure that sources meet their obligations. The EPA emphasizes that while exemptions from SIP limitations are not permissible in SIP provisions, states may elect to impose appropriate alternative emission limitations. They may include alternative numerical limitations, control technologies or work practices that apply during modes of operation such as startup and shutdown, so long as all components of the SIP emission limitation meet all applicable CAA requirements.

t. Comments that exemptions in SIP opacity limitations should be permissible for "maintenance," "soot-blowing" or other normal modes of source operation.

*Comment:* A number of industry commenters argued that the EPA should interpret the CAA to allow exemptions from SIP opacity limitations for "maintenance." The commenters stated that during maintenance, sources must shut down operations and control devices while the source is cleaned or repaired. During such periods, the commenters explained, a ventilation system operated to protect workers at the source could result in monitored exceedances of a SIP opacity limitation. Commenters specifically argued that although COMS data may suggest violations of opacity standards during such periods, the fact that the source is not combusting fuel during maintenance should mean that the opacity emission limitation does not apply at such times. According to commenters, opacity limitations are only intended to reflect the performance of pollution control equipment while the source is operating and thus have no relevance during periods of maintenance. Other commenters made comparable arguments with respect to soot-blowing, asserting that the high opacity levels

during this activity are "indicative of normal ESP operation, not poor performance." In other words, the commenters argued that opacity limitations should contain complete exemptions for opacity emitted during soot-blowing on the theory that the elevated emissions during this mode of operation show that the control measure on a source is functioning properly. The commenters further argued that considering emissions during soot-blowing for purposes of PM limitations is appropriate, but not for purposes of opacity limitations, because of the way in which regulators developed the respective emission limitations.

*Response:* The EPA does not agree that exemptions from SIP opacity limitations are appropriate for any mode of source operation, whether during SSM events or during other normal, predictable modes of source operation. To the extent that there are legitimate technological reasons why sources are able to meet only a higher opacity limitation during certain modes of operation, it does not follow that this constraint justifies complete exemption from any standard or any alternative technological control or work practice in order to reduce opacity during such periods. Providing a complete exemption for opacity during these modes of source operation, and no specific alternative emission limitation during such periods, removes incentives for sources to be properly designed, maintained and operated to reduce emissions during such periods.

With respect to maintenance, the EPA does not agree with commenters that total exemptions from opacity emission limitations during such activities are consistent with CAA requirements for SIP provisions. As the EPA has stated repeatedly in its interpretation of the CAA in the SSM Policy, maintenance activities are predictable and planned activities during which sources should be expected to comply with applicable emission limitations.<sup>250</sup> The premise of the commenters advocating for such exemptions for all emissions during maintenance is evidently that nothing can be done to limit PM emissions and thus limit opacity during maintenance activities, and the EPA disagrees with that general premise. To the extent appropriate, however, states may elect

<sup>250</sup> See 1982 SSM Guidance at Attachment p. 2; 1983 SSM Guidance at Attachment p. 3. The EPA notes that it also did not interpret the CAA to permit affirmative defense provisions for planned events under its prior 1999 SSM Guidance on the grounds that sources should be expected to operate in accordance with applicable SIP emission limitations during maintenance. This interpretation was upheld in *Luminant Generation v. EPA*, 714 F.3d 841 (5th Cir. 2013).

to create alternative emission limitations applicable to opacity during maintenance periods, so long as they are consistent with CAA requirements. The EPA provides recommendations for alternative emission limitations in section VII.B.2 of this document.

With respect to soot-blowing, the EPA likewise does not agree that total exemptions from opacity limitations during such periods are consistent with CAA requirements. As with maintenance in general, soot-blowing is an intentional, predictable event within the control of the source. The commenters' implication is that nothing whatsoever could be done to limit opacity during such activities, and the EPA believes that this is both inaccurate and not a justification for sources' being subject to no standards whatsoever during soot-blowing. In addition, the EPA disagrees with the commenters' claim that exemptions from opacity emission limitations during soot-blowing are legally permissible because this allegedly shows that the control devices for opacity and PM are in fact performing correctly. This argument incorrectly presupposes that the sole reason for SIP opacity emission limitations is as a means of better evaluating control measure performance. This is but one reason for SIP opacity limitations. Moreover, the EPA notes, excusing opacity during soot-blowing has the diametrically opposite effect of the actual purpose of the control devices and can result in much higher emissions as opposed to encouraging limiting these emission with other forms of controls.

Finally, the EPA notes, the commenters' argument that whether opacity limitations should apply during soot-blowing depends upon whether the emissions were or were not accounted for in the applicable PM emissions is also based upon an incorrect premise. Even if the PM emission limitation applicable to a source was developed to include the emissions during soot-blowing specifically, it does not follow that sources should be completely exempted from opacity limitations during such periods. As the commenters themselves frequently acknowledged, when compared to other enforcement tools, SIP opacity provisions often provide a much more effective and continuous means of determining source compliance with SIP PM limitations and control measure performance. A typical SIP opacity provision imposes an emission limitation such as 20 percent opacity at all times, except for 6 minutes per hour when those emissions may rise to 40 percent opacity. Well-maintained and

well-operated sources should be able to meet such SIP opacity limitations. Given that properly designed, maintained and operated sources should typically have opacity substantially below these levels, elevated opacity at a source is a good indication that the source may not be in compliance with its applicable PM limitations.

u. Comments that elimination of exemptions from SIP opacity emission limitations during SSM events will compel states to alter the averaging period of opacity limitations so as to allow sources to have elevated emissions during SSM events.

*Comment:* Commenters argued that if exemptions for excess emissions during SSM events are not legally permissible in SIP opacity emission limitations, then states will have no option but to alter the existing opacity limitations. The commenters argued that if the SSM exemptions are removed, then the averaging time should be “greatly extended” and the numerical limits “should be significantly increased.”

*Response:* The EPA agrees that SIP provisions for opacity that contain exemptions for SSM events at issue in this action must be revised to eliminate the exemptions. States may elect to do this by merely removing the exemptions, by replacing the exemptions with appropriate alternative emission limitations that apply in place of the exemptions or, as the commenters evidently advocate, by a total overhaul of the emission limitation. The EPA disagrees, however, with the commenters’ contentions that removal of the SSM exemptions would necessarily result in extensions of the averaging time or increases of the numerical levels in the existing SIP opacity emission limitations. In some cases, extension of the averaging period and elevation of the numerical limitations may in fact be appropriate. In other cases, however, it may instead be appropriate to reduce the existing numerical opacity limitations, given improvements in control technology since the original imposition of the limits and the need for additional PM emission reductions from the affected sources due to more recent revisions to the PM NAAQS. Thus, the EPA notes, a total revision of some of the SIP opacity limitations at issue in this action may indeed be the proper course for states to consider. The implications of the commenters’ argument, however, are that existing opacity limitations will automatically need to be revised in order to allow sources to continue to emit as usual and that states and sources may ignore improvements that have been made in source design, operation,

maintenance or controls to reduce emissions. The EPA emphasizes that the removal of impermissible SSM exemptions should not be perceived as an opportunity to provide new *de facto* exemptions for these emissions by manipulation of the averaging time and the numerical level of existing opacity emission limitations.

In any event, the EPA is not in this final action deciding how states must revise SIP opacity emission limitations but is merely issuing a SIP call directing the affected states to eliminate existing automatic and discretionary exemptions for excess emissions during SSM events. The affected states will elect how best to respond to this SIP call, whether by simply removing the exemptions, by replacing the exemptions with appropriate alternative emission limitations applicable to startup and shutdown or other normal modes of operation or by a complete overhaul of the SIP provision in question. In particular, where the affected sources are located in designated nonattainment areas, there may be a need to evaluate additional controls that are needed for attainment planning purposes that were not necessary when the emission limitation was first adopted. Whichever approach a state determines to be most appropriate, the resulting SIP submission to revise the existing deficient provisions will be subject to review by the EPA pursuant to sections 110(k)(3), 110(l) and 193. Considerations relevant to this issue are discussed in section X.B of this document.

#### *B. Alternative Emission Limitations During Periods of Startup and Shutdown*

##### *1. What the EPA Proposed*

In the February 2013 proposal, the EPA reiterated its longstanding interpretation of the CAA that SIP provisions cannot include exemptions from emission limitations for emissions during SSM events but may include different requirements that apply to affected sources during startup and shutdown. Since the 1982 SSM Guidance, the EPA has clearly stated that startup and shutdown are part of the normal operation of a source and should be accounted for in the design and operation of the source. Thus, the EPA has long concluded that sources should be required to meet the applicable SIP emission limitations during normal modes of operation including startup and shutdown.<sup>251</sup> In

the 1983 SSM Guidance, the EPA explained that it may be appropriate to exercise enforcement discretion for violations that occur during startup and shutdown under proper circumstances. In the 1999 SSM Guidance, the EPA further explained that it interprets the CAA to permit SIP emission limitations that include alternative emission limitations specifically applicable during startup and shutdown. In the context of making recommendations to states for how to address emissions during startup and shutdown, the EPA provided seven criteria for states to evaluate in establishing appropriate alternative emission limitations. The specific purpose for these recommendations was to take into account technological limitations that might prevent compliance with the otherwise applicable emission limitations. As explained in detail in the February 2013 proposal, the EPA did not intend these criteria to be the basis for the creation of exemptions from SIP emission limitations during startup and shutdown, because the Agency interprets the CAA to prohibit such exemptions.

In the February 2013 proposal, the EPA also repeated its guidance concerning establishment of alternative emission limitations that apply to sources during startup and shutdown, in those situations where the sources cannot meet the otherwise applicable SIP emission limitations. As explained in section VII.A of the February 2013 proposal, the EPA interprets the CAA to require that SIP emission limitations must be continuous and thus to prohibit exemptions for emissions during startup and shutdown. This does not, however, mean that every SIP emission limitation must be expressed as a numerical limitation or that it must impose the same limitations during all modes of source operation. The EPA’s interpretation of the CAA with respect to SIP provisions is that SIP emission limitations: (i) Do not need to be numerical in format; (ii) do not have to apply the same limitation (*e.g.*, numerical level) at all times; and (iii) may be composed of a combination of numerical limitations, specific technological control requirements and/

operation. The EPA assumes that every source is designed, maintained and operated with the expectation that the source will at least occasionally start up and shut down, and thus these modes of operation are “normal” in the sense that they are to be expected. The EPA used this term in the ordinary sense of the word to distinguish between such predictable modes of source operation and genuine “malfunctions,” which are by definition supposed to be unpredictable and unforeseen events that could not have been precluded by proper source design, maintenance and operation.

<sup>251</sup> Some commenters on the February 2013 proposal focused great attention on whether startup and shutdown are modes of “normal” source



or work practice requirements, with each component of the emission limitation applicable during a defined mode of source operation. Regardless of how an air agency elects to express the emission limitation, however, the emission limitation must limit emissions from the affected sources on a continuous basis. Thus, if there are different numerical limitations or other control requirements that apply during startup and shutdown, those must be clearly stated components of the emission limitation, must meet the applicable level of control required for the type of SIP provision (e.g., be RACT for sources located in nonattainment areas) and must be legally and practicably enforceable.

## 2. What Is Being Finalized in This Action

The EPA is reiterating its interpretation of the CAA to allow SIP emission limitations to include components that apply during specific modes of source operation, such as startup and shutdown, so long as those components together create a continuously applicable emission limitation that meets the relevant substantive requirements and requisite level of stringency for the type of SIP provision at issue and is legally and practically enforceable. In addition, the EPA is updating the specific recommendations to states for developing such alternative emission limitations described in the February 2013 proposal, by providing in this document some additional explanation and revisions to the text of its recommended criteria regarding alternative emission limitations.

The EPA's longstanding position is that the CAA does not allow SIP provisions that include exemptions from emission limitations for excess emissions that occur during startup and shutdown. The EPA reiterates that exemptions from SIP emission limitations are also not permissible for excess emissions that occur during other periods of normal source operation. A number of SIP provisions identified in the Petition create automatic or discretionary exemptions from otherwise applicable emission limitations during periods such as "maintenance," "load change," "soot-blowing," "on-line operating changes" or other similar normal modes of operation. Like startup and shutdown, the EPA considers all of these to be modes of normal operation at a source, for which the source can be designed, operated and maintained in order to meet the applicable emission limitations and during which the source should be

expected to control and minimize emissions. Accordingly, exemptions for emissions during these periods of normal source operation are not consistent with CAA requirements. Excess emissions that occur during planned and predicted periods should be treated as violations of any applicable emission limitations.

However, the EPA interprets the CAA to allow SIPs to include alternative emission limitations for modes of operation during which an otherwise applicable emission limitation cannot be met, such as may be the case during startup or shutdown. The alternative emission limitation, whether a numerical limitation, technological control requirement or work practice requirement, would apply during a specific mode of operation as a component of the continuously applicable emission limitation. For example, an air agency might elect to create an emission limitation with different levels of control applicable during specifically defined periods of startup and shutdown than during other normal modes of operation. All components of the resulting emission limitation must meet the substantive requirements applicable to the type of SIP provision at issue, must meet the applicable level of stringency for that type of emission limitation and must be legally and practically enforceable. The EPA will evaluate a SIP submission that establishes a SIP emission limitation that includes alternative emission limitations applicable to sources during startup and shutdown consistent with its authority and responsibility pursuant to sections 110(k)(3), 110(l) and 193 and any other CAA provision substantively germane to the SIP revision. Absent a properly established alternative emission limitation for these modes of operation, a source should be required to comply with the otherwise applicable emission limitation.

In addition, the EPA is providing in this document some additional explanation and clarifications to its recommended criteria for developing alternative emission limitations applicable during startup and shutdown. The EPA continues to recommend that, in order to be approvable (i.e., meet CAA requirements), alternative requirements applicable to the source during startup and shutdown should be narrowly tailored and take into account considerations such as the technological limitations of the specific source category and the control technology that is feasible during startup and shutdown. Accordingly, the EPA continues to recommend the seven specific criteria

enumerated in section III.A of the Attachment to the 1999 SSM Guidance as appropriate considerations for SIP provisions that establish alternative emission limitations that apply to startup and shutdown. The EPA repeated those criteria in the February 2013 proposal as guidance to states for developing components of emission limitations that apply to sources during startup, shutdown or other specific modes of source operation to meet CAA requirements for SIP provisions.

Comments received on the February 2013 proposal suggested that the purpose of the recommended criteria may have been misunderstood by some commenters. The criteria were phrased in such a way that commenters may have misinterpreted them to be criteria to be applied by a state retrospectively (i.e., after the fact) to an individual instance of emissions from a source during an SSM period, in order to establish whether the source had exceeded the applicable emission limitation. This was not the intended purpose of the recommended criteria at the time of the 1999 SSM Guidance, nor is it the intended purpose now.

The EPA seeks to make clear in this document that the recommended criteria are intended as guidance to states developing SIP provisions that include emission limitations with alternative emission limitations applicable to specifically defined modes of source operation such as startup and shutdown. A state may choose to consider these criteria in developing such a SIP provision. The EPA will use these criteria when evaluating whether a particular alternative emission limitation component of an emission limitation meets CAA requirements for SIP provisions. Any SIP revision establishing an alternative emission limitation that applies during startup and shutdown would be subject to the same procedural and substantive review requirements as any other SIP submission.

Based on comment on the February 2013 proposal, the EPA is updating the criteria to make clear that they are recommendations relevant for development of appropriate alternative emission limitations in SIP provisions. Thus, in this document, the EPA is providing a restatement of its recommended criteria that reflects clarifying but not substantive changes to the text of those criteria. One clarifying change is removal of the word "must" from the criteria, to better convey that these are recommendations to states concerning how to develop an approvable SIP provision with alternative requirements applicable to

startup and shutdown and to make clear that other approaches might also be consistent with the CAA in particular circumstances.

The clarified criteria for developing and evaluating alternative emission limitations applicable during startup and shutdown are as follows:

(1) The revision is limited to specific, narrowly defined source categories using specific control strategies (*e.g.*, cogeneration facilities burning natural gas and using selective catalytic reduction);

(2) Use of the control strategy for this source category is technically infeasible during startup or shutdown periods;

(3) The alternative emission limitation requires that the frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable;

(4) As part of its justification of the SIP revision, the state analyzes the potential worst-case emissions that could occur during startup and shutdown based on the applicable alternative emission limitation;

(5) The alternative emission limitation requires that all possible steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality;

(6) The alternative emission limitation requires that, at all times, the facility is operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures; and

(7) The alternative emission limitation requires that the owner or operator's actions during startup and shutdown periods are documented by properly signed, contemporaneous operating logs or other relevant evidence.

It may be appropriate for an air agency to establish alternative emission limitations that apply during modes of source operation other than during startup and shutdown, but any such alternative emission limitations should be developed using the same criteria that the EPA recommends for those applicable during startup and shutdown.

### 3. Response to Comments

The EPA received a number of comments, both supportive and adverse, concerning the issue of how air agencies may replace existing exemptions for emissions during SSM events with alternative emission limitations that apply during startup, shutdown or other normal modes of source operation. The majority of these comments were critical of the EPA's position but did not base this criticism on an interpretation of

specific CAA provisions. For clarity and ease of discussion, the EPA is responding to these comments, grouped by issue, in this section of this document.

a. Comments that as a technical matter sources cannot meet emission limitations (or cannot be accurately monitored) during startup and shutdown.

*Comment:* Several commenters claimed that as a technical matter, SIP emission limitations cannot be met or that monitoring to ensure compliance with emission limitations cannot occur during startup and shutdown. Commenters raised "practical concerns" with the EPA's proposal as it applies to emissions during SSM at electric generating units (EGUs). The commenters claimed that it is incorrect to treat periods of startup and shutdown as part of "normal source operation" and claimed that it is fundamentally incorrect to characterize all periods of startup and shutdown as planned events. The commenters claimed that many air pollution control devices (APCDs) are subject to technical, operational or safety constraints that prevent use or optimization during startup and shutdown periods. The commenters requested the EPA to continue the practice of allowing states to provide "protection" from enforcement for excess emissions during startup and shutdown. The commenters claimed that the EPA's premise for this action is that startup and shutdown events are planned and sources should be able to meet limits applicable during these normal operations. The commenters asserted that the proposal does not recognize technical and operational limits and that it conflicts with the EPA's own acknowledgement in the proposal that there are sometimes technical, operational and safety limits that may prevent compliance with emission limitations during startup and shutdown. The commenters also noted that the type of equipment that a control device is attached to may affect the time it takes for a control device to reach optimization. Further, the commenters identified control technologies that cannot achieve reductions until specific temperatures are reached and other technologies that cannot be used during startup and/or shutdown because of technical limitations or safety concerns. Finally, the commenters noted that the geographical location and/or weather can have an effect on the operation of a source and control devices during startup and shutdown.

Commenters raised specific concerns regarding pollution controls for EGUs. The commenters claimed that startup

and shutdown events are unavoidable at EGUs even though they may be planned. The commenters also attached appendices providing an explanation of why emissions are higher for startup and shutdown for certain types of EGUs. The commenters claimed that the "EPA's proposal to eliminate the States' SSM provisions, and prohibit them from adopting any provisions for startups and shutdowns, could force sources to comply with emission limitations during periods when they were never meant to apply, thus rendering those emissions limitations unachievable." The commenters also noted that the permits for their sources all require that the sources minimize the magnitude and duration of emissions during SSM. The implication of this latter comment is that a general duty to minimize emissions is sufficient to justify the exemption of all emissions during SSM events in the underlying SIP provisions.

*Response:* Although intended as criticism of the EPA's proposed action, these comments in fact support the Agency's position that states should consider startup and shutdown events as they promulgate standards for specific industries or even for specific sources. The commenters seem to suggest that because some equipment or sources cannot during startup and shutdown meet the emission limits that apply during "regular" operation, no limit or standards should apply during startup and shutdown. The EPA disagrees. As the court in *Sierra Club* held, emission limitations must apply at "all times." That is not to say that the emission limitation must impose the same numerical limitation or impose the same other control requirement at all times. As explained at length in section VII.A of this document, the EPA interprets the CAA to allow SIP emission limitations that may be a combination of numerical limitations, technological control measures and/or work practice requirements, so long as the resulting emission limitations are properly developed to meet CAA requirements and are legally and practically enforceable. As the commenters noted, the EPA does recognize that some control equipment cannot be operated at all or in the same manner during every mode of normal operations.

In its 1999 SSM Guidance, the EPA expressly recognized that an appropriate way for a state to address such technological limitations is to set alternative emission limitations that apply during periods of startup and shutdown as part of the SIP emission

limitation.<sup>252</sup> In these cases the state should consider how the control equipment works in determining what standards should apply during startup and shutdown. In addition, as noted by commenters, such standards may vary based on location (e.g., standards in a hot and humid area may differ from those adopted for a cool and dry area). Some equipment during startup and shutdown may be unable to meet the same emission limitation that applies during steady-state operations and so alternative limitations for startup and shutdown may be appropriate.<sup>253</sup>

However, for many sources, it should be feasible to meet the same emission limitation that applies during steady-state operations also during startup and shutdown.<sup>254</sup> These are issues for the state to consider in developing specific regulations as they revise the deficient SIP provisions identified in this action. The EPA emphasizes that the state has discretion to determine the best means by which to revise a deficient provision to eliminate an automatic or discretionary SSM exemption, so long as that revision is consistent with CAA requirements. The EPA will work with the states as they consider possible revisions to deficient provisions.

The EPA recognizes that a malfunction may cause a source to shut down in a manner different than in a planned shutdown, and in that case, such a shutdown would typically be considered part of the malfunction event. However, as part of the normal operation of a facility, sources typically will also have periodic or otherwise scheduled startup and shutdown of equipment, and steps to limit emissions during this type of event are or can be planned for. The EPA disagrees with the suggestion of commenters that because some startup or shutdown events may be unplanned, all startup and shutdown events should be exempt from compliance with any requirements. For those events that are planned, the state

should be able to establish requirements to regulate emissions, such as a numerical limitation, technological control measure or work practice standard that will apply as a part of the revised emission limitation. When unplanned startup or shutdown events are part of a malfunction, they should be treated the same as a malfunction; however, as with malfunctions, startup and shutdown events cannot be exempted from compliance with SIP requirements. Questions of liability and remedy for violations that result from malfunctions are to be resolved in the context of an enforcement action, if such an action occurs.

b. Comments that it is impossible, unreasonable or impractical for states to develop emission limitations that apply during startup and shutdown to replace existing exemptions.

*Comment:* A number of commenters suggested that it will be difficult for states to develop emission limits that apply during startup and shutdown. One state commenter reasoned that alternative emission limits are applied to facilities in that state through individual permits on a case-by-case basis and claimed that there are 500 permitted facilities in the state. The commenter contended that “non-steady-state” limits would need to be set for startup and shutdown for all 500 permitted facilities and that such an effort would be “time, resource, and data intensive.” The state commenter further contended that it would be unreasonable to require the state to include such limits “for every source” in the SIP because “permit modifications would need to occur every time there is a new emission source, a source ceases to operate, or an emission-related regulation is changed.”

A local government commenter stated that to establish limits for startup and shutdown that also demonstrate compliance with the NSR regulations (including protection of the NAAQS and PSD increments and maintenance of BACT or LAER) would be a difficult, time-consuming task that was mostly impractical.

An industry commenter claimed that the EPA is encouraging states to adopt numerical alternative emission limitations in their SIP provisions that would apply during startup and shutdown. The commenter claimed that adequate and accurate emissions data are necessary to do so and that such information is not generally available for existing equipment or, in many cases, for new equipment. Furthermore, the commenter asserted, even if an emission limit could be established for startup and shutdown, there are no

current approved test measures to verify compliance during such modes of operation. Even where data are available, the commenter alleged, the data may not be representative of actual conditions because of limitations related to low-load conditions. If a state lacks information to conclude that a limit can be met, the commenter argued, the state should not be required to establish numerical limits but should instead be allowed “to specify that numerical standards do not apply to those conditions or that those conditions are exempt, or should be allowed to establish work practice standards.”

*Response:* The comments of the state commenter seem to be based on the premise that all sources will be unable to meet otherwise applicable SIP emission limitations during periods of startup and shutdown. The EPA anticipates that many types of sources should be able during startup and shutdown to meet the same emission limitation that applies during full operation. Additionally, even where a specific type of operation may not during startup and/or shutdown be able to meet an emission limitation that applies during full operation, the state should be able to develop appropriate limitations that would apply to those types of operations at all similar types of facilities. The EPA believes that there will be limited, if any, cases where it may be necessary to develop source-specific emission requirements for startup and/or shutdown. In any event, this is a question that is best addressed by each state in the context of the revisions to the SIP provisions at issue in this action. To the extent that there are appropriate reasons to establish an emission limitation with alternative numerical, technological control and/or work practice requirements during startup or shutdown for certain categories of sources, this SIP call action provides the state with the opportunity to do so.

As to the commenter’s concern that such alternative emission limitations should not be included in a state’s SIP, the EPA disagrees. The SIP needs to reflect the control obligations of sources, and any revision or modification of those obligations should not be occurring through a separate process, such as a permit process, which would not ensure that “alternative” compliance options do not weaken the SIP. The SIP is a combination of state statutes, regulations and other requirements that the EPA approves for demonstrating attainment and maintenance of the NAAQS, protection of PSD increments, improvement of visibility and compliance with other

<sup>252</sup> See 1999 SSM Guidance, Attachment at 4–5.

<sup>253</sup> The EPA notes that it has taken this approach in its own recent actions establishing emission limitations for sources. See, e.g., “National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final rule; notice of final action on reconsideration,” 78 FR 7137 (January 31, 2013) (example of work practice requirement for startup as a component of a continuous emission limitation).

<sup>254</sup> The EPA notes that it has taken this approach in its own recent actions establishing emission limitations for sources. See, e.g., “National Emission Standards for Hazardous Air Pollutants Residual Risk and Technology Review for Flexible Polyurethane Foam Production; Final rule,” 79 FR 48073 (August 15, 2014) (example of NESHAP emission limitation that is continuous and does not include a different component for periods of startup or shutdown).

CAA requirements. As discussed in section X.B of this document, any revisions to obligations in the SIP need to occur through the SIP revision process and must comply with sections 110(k)(3), 110(l) and 193 and any other applicable substantive requirements of the CAA.

As to concerns that a SIP revision will be necessary every time a new source comes into existence, an existing source is permanently retired or a new regulation is promulgated, the EPA does not see these as significant concerns. Unless the startup or shutdown process for an individual source is truly unique to that source, then existing SIP provisions for sources within the same industrial category should be able to apply to any new source. Moreover, assuming any new source is subject to permitting obligations, then any applicable startup and shutdown issues should already be resolved in developing the permit for such source. The state could choose to incorporate that permit by reference into the SIP at the time it next modifies its SIP. Further, assuming that there is a source-specific regulation for a source in the SIP (a circumstance that the EPA believes would occur only rarely), the state is not obligated to remove such provision when the source is retired. Rather, the state could leave the provision in its rules or remove such a provision the next time it submits another SIP revision or when it chooses to do a "cleanup" of the SIP, an activity that numerous states have taken from time to time. Finally, whenever a new regulation is promulgated is precisely the time that a state should be considering the appropriate provisions that would apply during startup and shutdown, as that is the time when the state is considering what is necessary to comply with the CAA and what is necessary to meet attainment, maintenance or other requirements of the CAA.

The local government commenter contended that establishing limits for startup and shutdown that also demonstrate compliance with the NSR regulations (including protection of the NAAQS and PSD increments and imposition of BACT- or LAER-level controls) would be a difficult, time-consuming task that was impractical. The commenter did not provide an explanation of how this would be difficult. The implication of the comment is that a SIP provision that provides an exemption or an affirmative defense for emissions during startup and shutdown would be compliant with the statutory requirements and NSR regulations (including attainment of the

NAAQS and protecting PSD increments). That is incorrect because the EPA does not interpret the CAA to allow such exemptions or affirmative defenses for purposes of NSR regulations. The suggestion that a SIP provision that does not regulate emissions during startup and shutdown would be more likely to address NAAQS attainment and to protect PSD increments than would a SIP provision that does regulate such emissions is illogical. The EPA further notes that the Agency's interpretation of the CAA, explicitly set forth in a 1993 guidance document, has been that periods of startup and shutdown must be addressed in any new source permit.<sup>255</sup> Moreover, the EPA explained in the February 2013 proposal, in the SNPR and in the background memorandum accompanying the February 2013 proposal concerning the legal basis for this action why exemptions and affirmative defenses applicable to emissions during SSM events are not consistent with CAA requirements for SIP provisions.

c. Comments that the EPA should "authorize" states to replace SSM exemptions with "work practice" standards developed by the EPA in its own recent NESHAP and NSPS rules.

*Comment:* Commenters suggested that the EPA should allow states to use work practice standards to address emissions during startup and shutdown. The NESHAP rules cited by commenters included the Industrial Boiler MACT rule<sup>256</sup> and the MATS rule, and the NSPS rules cited by the commenters included the NSPS for Electric Utility Steam Generating Units (40 CFR part 60, subpart Da) and the gas turbine NSPS as examples of where the EPA itself has established work practice standards rather than numerical emission limitations for periods of startup and shutdown. The commenters suggested that where these work practice standards are already in place, states should be able to rely on the work practice standards rather than having to create new SIP provisions.

*Response:* The EPA agrees that states may adopt work practice standards to address periods of startup and shutdown as a component of a SIP emission limitation that applies continuously. Adoption of work practice standards from a NESHAP or NSPS as a component of an emission

limitation to satisfy SIP requirements is addressed in this document not as a requirement or even as a recommendation but rather as an approach that a state may use at its option. The EPA cannot foretell the extent to which this optional approach of adopting other existing standards to satisfy SIP requirements may benefit an individual state. For a state choosing to use this approach, such work practice standards must meet the otherwise applicable CAA requirements (e.g., be a RACT-level control for the source as part of an attainment plan requirement) and the necessary parameters to make it legally and practically enforceable (e.g., have adequate recordkeeping, reporting and/or monitoring requirements to assure compliance). However, it cannot automatically be assumed that emission limitation requirements in recent NESHAP and NSPS are appropriate for all sources regulated by SIPs. The universe of sources regulated under the federal NSPS and NESHAP programs is not identical to the universe of sources regulated by states for purposes of the NAAQS. Moreover, the pollutants regulated under the NESHAP (i.e., HAPs) are in many cases different than those that would be regulated for purposes of attaining and maintaining the NAAQS, protecting PSD increments, improving visibility and meeting other CAA requirements.<sup>257</sup> Thus, the EPA cannot say as a matter of law that those federal regulations establish emission limitation requirements appropriate for all of the sources that states are regulating in their SIPs or for the purpose for which they are being regulated. The EPA believes, however, that those federal regulations and the technical materials in the public record for those rules may provide assistance for states as they develop and consider regulations for sources in their states and may be appropriate for adoption by the state in certain circumstances. In particular, the NSPS regulations should provide very relevant information for sources of the same type, size and control equipment type, even if the sources were not constructed or modified within a date range that would make them subject to the NSPS. The EPA therefore encourages states to explore these approaches, as well as any other relevant information available, in

<sup>255</sup> See Memorandum from John B. Rasnic, EPA/OAQPS, January 28, 1993, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0022.

<sup>256</sup> The Industrial Boiler MACT rule regulates industrial, commercial and institutional boilers and process heaters at major sources under 40 CFR part 63, subpart DDDDD.

<sup>257</sup> While some HAPs are also VOCs or particulate matter, many HAPs are not. Moreover, there are many VOCs and types of particulate matter that are not HAPs and thus are not regulated under the MACT standards. The MACT standards also do not address other criteria pollutants or pollutant precursors from sources that may be relevant for SIP purposes.

determining what is appropriate for revised SIP provisions.

d. Comments that if states remove existing SSM exemptions and replace them with alternative emission limitations that apply during startup and shutdown events, this would automatically be consistent with the requirements of CAA section 193.

*Comment:* Commenters stated that section 193 was included in the CAA to prohibit states from modifying regulations in place prior to November 15, 1990, unless the modification ensures equivalent or greater reductions of the pollutant. The commenters asserted that to the extent a state replaces “general excess emissions exclusions and/or affirmative defense provisions” such amendments would *per se* be more stringent than the provisions they replace. The commenters also contended that any replacement SIP provision that spells out more clearly how a source will operate ensures equivalent or greater emission reductions. The commenters urged the EPA to clarify that any revisions pursuant to a final SIP call would not be considered “backsliding.”

*Response:* The EPA agrees with the commenters that any SIP submission made by a state in response to this SIP call action will need to comply with the requirements of section 193 of the CAA, if that section applies to the SIP provision at issue. In addition, such SIP provision will also need to comply with section 110(l), which requires that SIP revisions do not interfere with attainment, reasonable progress or any other applicable requirement of the CAA. However, it is premature to draw the conclusion that any SIP revision made by a state in response to this SIP call will automatically meet the requirements of section 110(l) and section 193. Such a conclusion could only be made in the context of reviewing the actual SIP revision. The EPA will address this issue, for each SIP revision in response to this SIP call action, at the time that it proposes and finalizes action on the SIP revision, and any comments on this issue can be raised during those individual rulemaking actions. The EPA provides additional guidance to states on the analysis needed to comply with section 110(l) and section 193 in section X.B of this document.

### C. Director's Discretion Provisions Pertaining to SSM Events

#### 1. What the EPA Proposed

In the February 2013 proposal, the EPA stated and explained in detail the reasons for its belief that the CAA

prohibits unbounded director's discretion provisions in SIPs, including those provisions that purport to authorize unilateral revisions to, or exemptions from, SIP emission limitations for emissions during SSM events.<sup>258</sup>

#### 2. What Is Being Finalized in This Action

The EPA is reiterating its interpretation of the CAA with respect to unbounded director's discretion provisions applicable to emissions during SSM events, which is that SIP provisions cannot contain director's discretion to alter SIP requirements, including those that allow for variances or outright exemptions for emissions during SSM events. This interpretation has been clear with respect to emissions during SSM events in the SSM Policy since at least 1999. In the 1999 SSM Guidance, the EPA stated that it would not approve SIP revisions “that would enable a State director's decision to bar EPA's or citizens' ability to enforce applicable requirements.”<sup>259</sup> Director's discretion provisions operate to allow air agency personnel to make just such unilateral decisions on an *ad hoc* basis, up to and including the granting of complete exemptions for emissions during SSM events, thereby negating any possibility of enforcement for what would be violations of the otherwise applicable emission limitation. Given that the EPA interprets the CAA to bar exemptions from SIP emission limitations for emissions during SSM events in the first instance, the fact that director's discretion provisions operate to authorize these exemptions on an *ad hoc* basis compounds the problem. The EPA acknowledges, however, that both states and the Agency have, in some instances, failed to adhere to the requirements of the CAA with respect to this issue consistently in the past, and thus the need for this SIP call to correct existing deficiencies in SIPs.<sup>260</sup> In order to be clear about its interpretation of the CAA with respect to this point on a going-forward basis, the EPA is reiterating in this action that SIP provisions cannot contain unbounded director's discretion provisions, including those that operate to allow for variances or outright exemptions from

SIP emission limitations for excess emissions during SSM events.

Many commenters on the February 2013 proposal opposed the EPA's interpretation of the CAA with respect to director's discretion provisions simply on the grounds that states are *per se* entitled to have unfettered discretion with respect to the content of their SIP provisions. Other commenters argued that any director's discretion provision is merely a manifestation of an air agency's general “enforcement discretion.” Some commenters simply asserted that recent court decisions by the Fifth Circuit definitively establish that the CAA does not prohibit SIP provisions that include director's discretion, regardless of whether those provisions contain any limitations whatsoever on the exercise of that discretion.<sup>261</sup> The commenters did not, however, address the specific statutory interpretations that the EPA set forth in the February 2013 proposal to explain why SIP provisions that authorize unlimited director's discretion are prohibited by CAA provisions applicable to SIP revisions.

As explained in detail in the February 2013 proposal and in section VII.C of this document, the EPA interprets the CAA to prohibit SIP provisions that include unlimited director's discretion to alter the SIP emission limitations applicable to sources, including those that operate to allow exemptions for emissions from sources during SSM events. The EPA believes that such provisions that operate to authorize total exemptions from emission limitations on an *ad hoc* basis are especially problematic. Given that the EPA interprets section 110(a)(2)(A) and section 302(k) to preclude exemptions for emissions during SSM events in emission limitations in the first instance, it is also impermissible for states to have SIP provisions that authorize such exemptions on an *ad hoc* basis. These provisions functionally allow the air agency to impose its own enforcement discretion decisions on the EPA and other parties by granting exemptions for emissions that should be treated as violations of the applicable SIP emission limitations. Provisions that functionally allow such exemptions are also inconsistent with requirements of the CAA related to enforcement

<sup>258</sup> See February 2013 proposal, 78 FR 12459 at 12485–86.

<sup>259</sup> See 1999 SSM Guidance at 3.

<sup>260</sup> In this action, the EPA is addressing the specific SIP provisions with director's discretion provisions that the Petitioner listed in the Petition. In the event that there are other such impermissible director's discretion provisions in existing SIPs, the EPA will address those provisions in a later action.

<sup>261</sup> For example, commenters on the February 2013 proposal cited two decisions of the Fifth Circuit within which the court cited a prior EPA approval of a SIP revision in Georgia that contained director's discretion provisions supposedly comparable to those at issue in the Fifth Circuit cases. These provisions were not included in the Petition and the EPA is not reexamining those provisions as part of this action.

including: (i) The general requirements of section 110(a)(1) that SIPs provide for enforcement; (ii) the section 110(a)(2)(A) requirement that the specific emission limitations and other contents of SIPs be enforceable; and (iii) the section 110(a)(2)(C) requirement that SIPs contain a program to provide for enforcement. Moreover, these provisions operate to interfere with the enforcement structure of the CAA provided in section 113 and section 304, through which the EPA and other parties have authority to seek enforcement for violations of CAA requirements, including SIP emission limitations.

There are two ways in which such a provision can be consistent with CAA requirements: (1) When the exercise of director's discretion by the state agency to alter or eliminate the SIP emission limitation can have no effect for purposes of federal law unless and until the EPA ratifies that state action with a SIP revision; or (2) when the director's discretion authority is adequately bounded such that the EPA can ascertain in advance, at the time of approving the SIP provision, how the exercise of that discretion to alter the SIP emission limitations for a source could affect compliance with other CAA requirements. If the provision includes director's discretion that could result in violation of any other CAA requirement for SIPs, then the EPA cannot approve the provision consistent with the requirements of section 110(k)(3) and section 110(l). For example, a director's discretion provision that authorizes state personnel to excuse source compliance with SIP emission limitations during SSM events could not be approved because the provision would run afoul of the requirement that sources be subject to emission limitations that apply continuously, consistent with section 302(k).

### 3. Response to Comments

The EPA received a number of comments, both supportive and adverse, concerning the issue of director's discretion provisions in SIPs. The majority of these comments were critical of the EPA's position but did not base this criticism on an interpretation of specific CAA provisions. For clarity and ease of discussion, the EPA is responding to these comments, grouped by issue, in this section of this document.

a. Comments that broad state discretion in how to develop SIP provisions includes the authority to create provisions that include director's discretion variances or exemptions for excess emission during SSM events.

*Comment:* A number of state and industry commenters argued that because states have great discretion when developing SIP provisions in general, this necessarily includes the ability to create director's discretion provisions in SIPs that authorize state personnel to grant unilateral variances or exemptions for emissions during SSM events. According to commenters, the overarching principle of "cooperative federalism" and court decisions concerning the division of regulatory responsibilities between the states and the EPA support their view that states can create SIP provisions that provide authority to alter the SIP emission limitations or other requirements via director's discretion provisions without restriction.

*Response:* The EPA disagrees with the commenters' view that director's discretion provisions in SIPs are *per se* permissible because of the principles of cooperative federalism. As explained in more detail in section V.D.2 of this document, states and the EPA each have authorities and responsibilities under the CAA. With respect to SIPs, under section 107(a) the states have primary responsibility for assuring attainment of the NAAQS within their borders. Under section 110(a) the states have a statutory duty to develop and submit a SIP that provides for the attainment, maintenance and enforcement of the NAAQS, as well as meeting many other CAA requirements and objectives. The specific procedural and substantive requirements that states must meet for SIPs are set forth in section 110(a)(1) and section 110(a)(2) and in other more specific requirements throughout the CAA (e.g., the attainment plan requirements for each of the NAAQS as specified in part D). By contrast, the EPA has its own statutory authorities and responsibilities, including the obligation to review new SIP submissions for compliance with CAA procedural and substantive requirements pursuant to sections 110(k)(3), 110(l) and 193. In addition, the EPA has authority to assure that previously approved SIP provisions continue to meet CAA requirements, whether through the SIP call authority of section 110(k)(5) or the error correction authority of section 110(k)(6).

As the EPA explained in detail in the February 2013 proposal, SIP provisions that include unbounded director's discretion to alter the otherwise applicable emission limitations are inconsistent with CAA requirements. Such provisions purport to authorize air agency personnel unilaterally to change or to eliminate the applicable SIP emission limitations for a source

without meeting the requirements for a SIP revision. Pursuant to the EPA's own responsibilities under sections 110(k)(3), 110(l) and 193 and any other CAA provision substantively germane to the specific SIP provision at issue, it would be inappropriate for the Agency to approve a SIP provision that automatically preauthorized the state unilaterally to revise the SIP emission limitation without meeting the applicable procedural and substantive statutory requirements for a SIP revision. Section 110(i) prohibits modification of SIP requirements for stationary sources by either the state or the EPA, except through specified processes. The EPA's implementing regulations applicable to SIP provisions likewise impose requirements for a specific process for the approval of SIP revisions.<sup>262</sup> In addition, section 116 explicitly prohibits a state from adopting or enforcing regulations for sources that are less stringent than what is required by the emission limitations in its SIP, *i.e.*, the emission limitation previously approved by the EPA as meeting the requirements of the CAA applicable to that specific SIP provision. It is a fundamental tenet of the CAA that states cannot unilaterally change SIP provisions, including the emission limitations within SIP provisions, without the EPA's approval of the change through the appropriate process. This core principle has been recognized by multiple courts.<sup>263</sup>

b. Comments that director's discretion provisions are an exercise of "enforcement discretion."

*Comment:* Several state and industry commenters asserted that the EPA was wrong to interpret the CAA to preclude director's discretion provisions, because such provisions are merely an exercise of a state's traditional "enforcement discretion."

*Response:* The EPA disagrees that a director's discretion provision in a SIP is a valid exercise of enforcement discretion. Normally, the concept of enforcement discretion is understood to mean that a regulator has discretion to determine whether a specific violation

<sup>262</sup> See, e.g., 40 CFR 51.104(d) and 40 CFR 51.105.

<sup>263</sup> See, e.g., *Sierra Club v. TVA*, 430 F.3d 1337, 1346 (11th Cir. 2005) ("If a state wants to add, delete, or otherwise modify a SIP provision, it must submit the proposed change to EPA for approval"); *Duquesne Light Co. v. EPA*, 698 F.2d 456, 468 n.12 (D.C. Cir. 1983) ("with certain enumerated exceptions, states do not have the power to take any action modifying any requirement of their SIPs, without approval from EPA"); *Train v. NRD*, 421 U.S. 60, 92 (1975) ("[A] polluter is subject to existing requirements until such time as he obtains a variance, and variances are not available under the revision authority until they have been approved by both the State and the Agency").

of the law by a source warrants enforcement and to determine the nature of the remedy to seek for any such violation. The EPA of course agrees that states have enforcement discretion of this type and that the states may exercise such enforcement discretion as they see fit, as does the Agency itself. However, the EPA does not agree that air agencies may create SIP provisions that operate to eliminate the ability of the EPA or citizens to enforce the emission limitations of the SIP. The EPA stated clearly in the 1999 SSM Guidance that it would not approve SIP provisions that “would enable a State director’s decision to bar EPA’s or citizens’ ability to enforce applicable requirements.”<sup>264</sup> The Agency explained at that time that such an approach is inconsistent with the requirements of the CAA applicable to the enforcement of SIPs.

The commenters’ argument was that states may create SIP provisions through which they may unilaterally decide that the emissions from a source during an SSM event should be exempted, such that the emissions cannot be treated as a violation by anyone. A common formulation of such a provision provides only that the source needs to notify the state regulatory agency that an exceedance of the emission limitations occurred and to report that the emissions were the result of an SSM event. If those minimal steps occur, then such provisions commonly authorize state personnel to make an administrative decision that the emissions in question were not a “violation” of the applicable emission limitation. It may be entirely appropriate for the state agency to elect not to bring an enforcement action based on the facts and circumstances of a given SSM event, as a legitimate exercise of its own enforcement discretion. However, by creating a SIP provision that in effect authorizes the state agency to alter or suspend the otherwise applicable SIP emission limitations unilaterally through the granting of exemptions, the state agency would functionally be revising the SIP with respect to the emission limitations on the source. This revision of the applicable emission limitation would have occurred without satisfying the requirements of the CAA for a SIP revision. As a result of this *ad hoc* revision of the SIP emission limitation, the EPA and other parties would be denied the ability to exercise their own enforcement discretion. This is contrary to the fundamental enforcement structure of the CAA, as provided in

section 113 and section 304, through which the EPA and other parties are authorized to bring enforcement actions for violations of SIP emission limitations. The state’s decision not to exercise its own enforcement discretion cannot be a basis on which to eliminate the legal rights of the EPA and other parties to seek to enforce.

The commenters also suggested that the director’s discretion provisions authorizing exemptions for SSM events are nonsegregable parts of the emission limitations, *i.e.*, that states have established the numerical limitations at overly stringent levels specifically in reliance on the existence of exemptions for any emissions during SSM events. Although commenters did not provide facts to support the claims that states set more stringent emission limitations in reliance on SSM exemptions, in general or with respect to any specific emission limitation, the EPA acknowledges that this could possibly have been the case in some instances. Even if a state had taken this approach, however, it does not follow that SIP provisions containing exemptions for SSM events are legally permissible. Emission limitations in SIPs must be continuous. When a state takes action in response to this SIP call to eliminate the director’s discretion provisions or otherwise to revise them, the state may elect to overhaul the emission limitation entirely in order to address this concern. So long as the resulting revised SIP emission limitation is continuous and meets the requirements of sections 110(k)(3), 110(l) and 193 and any other sections that are germane to the type of SIP provision at issue, the state has discretion to revise the provision as it determines best.

c. Comments that the EPA’s having previously approved a SIP provision that authorizes the granting of variances or exemptions for SSM events through the exercise of director’s discretion renders the provision consistent with CAA requirements.

*Comment:* Several state and industry commenters argued that the EPA’s past approval of a SIP provision with a director’s discretion feature automatically means that the exercise of that authority (whether to revise the applicable SIP emission limitations unilaterally or to grant *ad hoc* exemptions from SIP emission limitations) is valid under the CAA. One commenter asserted that because the EPA has previously approved such a provision, “that discretion is itself part of the SIP, and the exercise of discretion in no way modifies SIP requirements.” Another commenter argued that director’s discretion provisions in SIPs

are *per se* valid because “[a]ll of the SIP provisions went through a public procedure at the time of their initial SIP approval.”

*Response:* First, the EPA disagrees with the theory that a SIP provision that includes director’s discretion authority for state personnel to modify or grant exemptions from SIP emission limitations unilaterally is valid merely by virtue of the fact that the Agency previously approved it. By definition, when the EPA makes a finding of substantial inadequacy and issues a SIP call, that signifies that the Agency previously approved a SIP provision that does not meet CAA requirements, whether that deficiency existed at the time of the original approval or arose later. The EPA has explicit authority under section 110(k)(5) to require that a state eliminate or revise a SIP provision that the Agency previously approved, whenever the EPA finds an existing SIP provision to be substantially inadequate to meet CAA requirements. The fact that the EPA previously approved it does not mean that a deficient provision may remain in the SIP forever once the Agency determines that it is deficient.

Second, the EPA disagrees that the fact that a SIP provision underwent public process at the time of its original creation by the state, or at the time of its approval by EPA as part of the SIP, means *per se* that the provision is consistent with CAA requirements. If an existing SIP provision is deficient because it in effect allows a state to revise existing SIP emission limitations without meeting the many explicit statutory requirements for a SIP revision, the fact that the revision that created the impermissible provision itself met the proper procedural requirements for a SIP revision is irrelevant. Even perfect compliance with the procedural requirements for a SIP revision at the time of its development by the state or its approval by the EPA does not override a substantive deficiency in the provision, nor does it preclude the later issuance of a SIP call to correct a substantive deficiency.

Third, the EPA disagrees with the circular logic that because a deficient provision with director’s discretion currently exists in a SIP, it means that exercise of the director’s discretion to grant variances or outright exemptions to sources for emissions during SSM events is therefore consistent with CAA requirements for SIPs. An unbounded director’s discretion provision that authorizes an air agency to alter or eliminate the otherwise applicable SIP emission limitation functionally allows the state to revise the SIP emission

<sup>264</sup> 1999 SSM Guidance at 3.



limitation without meeting the requirements for a SIP revision. In particular, when such provisions authorize state personnel to grant outright exemptions from the SIP emission limitations, this is tantamount to a revision of the SIP emission limitation without complying with the procedural and substantive requirements of the CAA applicable to SIP revisions, including section 110(l), section 193 and any other substantive requirements applicable to the particular SIP emission limitation in question.

d. Comments that director's discretion provisions in SIPs are not prohibited by the CAA, based on recent judicial decisions.

*Comment:* A number of state and industry commenters argued that nothing in the CAA explicitly prohibits states from having SIP provisions that include director's discretion authorization for state personnel to modify or eliminate existing SIP provisions unilaterally, with or without any process or within any limiting parameters. In support of this proposition, the commenters cited recent decisions of the Fifth Circuit in two cases concerning the EPA's disapproval of SIP submissions from the state of Texas. Commenters argued that the EPA's interpretation of the CAA to prohibit director's discretion provisions in SIPs is incorrect in light of the decision of the court in *Texas v. EPA*.<sup>265</sup> According to commenters, the court's decision establishes that no provision of the CAA bars such provisions. To support this contention, one commenter quoted the court's decision extensively, highlighting the statement, ". . . the EPA has invoked the term 'director discretion' as if that term were an independent and authoritative standard, and has not linked the term to the language of the CAA." Similarly, the commenters cited another decision of that court in the *Luminant* director's discretion case.<sup>266</sup> From that decision, commenters quoted the court's statement that the "EPA had no legal basis to demand 'replicable' limitations on the Director's discretion" and the succeeding sentence, "[n]ot once in its proposed or final disapproval, or in its argument before this court, has the EPA pointed to any applicable provision of the Act or its regulations that includes a 'replicability' standard." These

commenters did not, however, address the specific statutory provisions identified by the EPA in the February 2013 proposal and the explanation that the Agency provided with respect to this issue.

*Response:* The EPA disagrees that either decision cited by commenters stands for the definitive proposition they assert, *i.e.*, that director's discretion provisions in SIPs are not precluded by the CAA. In *Luminant Generation Co. v. EPA* (the *Luminant* director's discretion case), the court evaluated the EPA's disapproval of a SIP submission from the state of Texas that created SIP provisions to implement minor source permitting requirements. The EPA disapproved the SIP submission for several reasons, one of which was based on the director's discretion provision prohibiting use of the standard permit for a pollution control project that the director determines raises health concerns or threatens the NAAQS. The EPA was concerned that this provision gave the director of the state agency discretion to make case-by-case decisions about what the specific permit terms would be for each source, without sufficient parameters or limitations on the exercise of that authority. Thus, the EPA reasoned that without any boundaries on the exercise of this authority for director's discretion, it would be impossible for the Agency to know in advance (*i.e.*, at the time of acting on the SIP submission) whether the state agency would only use that discretion in a way that would result in permits with terms consistent with meeting CAA requirements.<sup>267</sup> As the EPA explained in the rulemaking at issue in the *Luminant* director's discretion case, "[t]here are no replicable conditions in the PCP Standard Permit that specify how the [TCEQ] Director's discretion is to be implemented" for the individual case-by-case determinations.<sup>268</sup> In other

words, the EPA was being asked to approve a SIP provision without knowing how the SIP provision would actually be implemented and thus without knowing whether the results would be consistent with applicable CAA requirements.

As the commenters stated, the court in the *Luminant* director's discretion case vacated the EPA's disapproval of the SIP submission for several reasons, including the rejection of the Agency's argument that it could not approve the SIP submission due to the director's discretion feature of the SIP provisions and the resulting lack of "replicability."<sup>269</sup> The court found that the EPA "failed to identify a single provision of the Act that Texas's program violated, let alone explain its reasons for reaching its conclusion."<sup>270</sup> With respect to the director's discretion issue, phrased in terms of "replicability," the court found that "[n]ot once in its proposed or final disapproval, or in its argument before this court, has the EPA pointed to any applicable provision of the Act or its regulations that include a 'replicability' standard."

The EPA believes that the court's decision in the *Luminant* director's discretion case is distinguishable on several important grounds. Most importantly, the court rejected the EPA's disapproval of the SIP submission because the Agency had not provided an adequate explanation of why the director's discretion provision at issue was inconsistent with the requirements of the CAA for SIP provisions. The court emphasized the absence of any explanation in the administrative record for the proposed or final actions that

Nonattainment NSR (NNSR) for the 1997 8-Hour Ozone Standard, NSR Reform, and a Standard Permit; Proposed rule," 74 FR 48467 at 48476 (September 23, 2009).

<sup>269</sup> The term "replicable" was taken from EPA guidance concerning SIP provisions for attainment plans. As a "fundamental principle" for SIP provisions and permits, the EPA explained that the requirements imposed upon sources should be "replicable"; *i.e.*, if they contain "procedures for changing the rule, interpreting the rule, or determining compliance with the rule, the procedures are sufficiently specific and nonsubjective so that two independent entities applying the same procedures would obtain the same result." See General Preamble, 57 FR 13498 at 13568 (April 16, 1992). The EPA's intent in using this term, although not clearly expressed in the rulemaking record, has been to indicate that a properly constructed SIP provision with an appropriate degree of discretion and flexibility would contain sufficient specifications and limits on the exercise of that discretion such that the Agency could adequately evaluate the provision at the time of its submission. Absent sufficient limits on the discretion, the EPA could not properly evaluate how exercise of the discretion could affect compliance with CAA requirements.

<sup>270</sup> 675 F.3d 917, 924 (5th Cir. 2012).

<sup>267</sup> The EPA notes that the court in the *Luminant* director's discretion case focused on the fact that the director's discretion provision included the discretion to require more of sources, if there "are health effects concerns or the potential to exceed the [NAAQS]," and the court expressed that it did not understand why that requirement was not alone adequate to allay the Agency's concerns. *Luminant Generation Co. v. EPA*, 675 F.3d 917, 929 n.11. The EPA's primary concern, although not clearly articulated in the rulemaking record, was that at the time of acting on the SIP submission, there was no way for the Agency to know in advance what the state would require of any source in the first instance, let alone what additional things the state might require in situations where it unilaterally decided that more might be necessary in any given permit.

<sup>268</sup> See "Approval and Promulgation of Implementation Plans; Texas; Revisions to the New Source Review (NSR) State Implementation Plan (SIP); Prevention of Significant Deterioration (PSD),

<sup>265</sup> 690 F.3d 670 (5th Cir. 2012).

<sup>266</sup> *Luminant Generation Co. v. EPA*, 675 F.3d 917 (5th Cir. 2012). Throughout this document, the EPA refers to this as the *Luminant* director's discretion case, to distinguish it from another *Luminant* case cited in this document, *Luminant Generation v. EPA*, 714 F.3d 841 (5th Cir. 2013).

explained which specific provisions of the CAA preclude such a provision and why. In the February 2013 proposal and in this document, the EPA has identified and explained the specific CAA provisions that operate to preclude unbounded director's discretion provisions in SIPs.

Second, the court in the *Luminant* director's discretion case based its decision in part on the view that the specific director's discretion provision at issue in that case would always result in more stringent regulation of affected sources and always entail exercise of the discretion in a way that would protect the NAAQS.<sup>271</sup> Although its view was not articulated clearly in the record, the EPA did not agree with that assessment because it was not possible to evaluate in advance how the director's discretion authority would in fact be exercised. By contrast, the SIP provisions at issue in this action are not structured in such a way as to allow the exercise of discretion only to make the emission limitations *more stringent*. To the contrary, the director's discretion provisions at issue in this action authorize the state agencies to excuse sources from compliance with the otherwise applicable SIP emission limitation during SSM events. Were the sources seeking these discretionary exemptions meeting the applicable SIP emission limitations, they would not need an exemption. It logically follows that sources are seeking these exemptions because their emissions during such events are higher than the otherwise applicable emission limitation allows. Unlike the specific director's discretion provision at issue in the *Luminant* director's discretion case, which the court said "can only serve to protect the NAAQS," the exercise of the director's discretion authority in the SIP provisions at issue in this action can operate to make the emission limitations less stringent and can thereby undermine attainment and maintenance of the NAAQS, protection of PSD increments, improvement of visibility and achievement of other CAA objectives.

In the *Texas* decision, the court evaluated the EPA's disapproval of another SIP submission from the state of Texas that pertained to requirements for the permitting program for minor sources. The EPA had disapproved the submission for several different reasons,

including that the Agency believed the specific provisions at issue provided the state agency with too much director's discretion authority to decide what, if any, monitoring, recordkeeping and reporting requirements should be imposed on any individual affected source in its permit. The EPA concluded that if at the time it was evaluating the SIP provision for approval it could not reasonably anticipate how the state agency would exercise the discretion authorized in the provision, this made the submission unapprovable "for being too vague and not replicable."<sup>272</sup> The *Texas* court disagreed. The court concluded that the "degree of discretion conferred on the TCEQ director cannot sustain the EPA's rejection of the MRR requirements" and that the EPA insisted on "some undefined limit on a director's discretion . . . based on a standard that the CAA does not empower the EPA to enforce."<sup>273</sup>

The EPA believes that the decision of the court in *Texas v. EPA* is also distinguishable with respect to the issue of whether director's discretion provisions are consistent with CAA requirements. First, the *Texas* court based its decision primarily on the conclusion that the EPA had failed to identify and explain the provisions of the CAA that (i) preclude approval of SIP provisions that include unbounded director's discretion or (ii) impose a requirement for "replicability" in the exercise of director's discretion. The *Texas* court emphasized that although the EPA disapproved the SIP submission for failure to meet CAA requirements, the court found that the EPA "is yet to explain why."<sup>274</sup> The court further reasoned that "the EPA has invoked the term 'director discretion' as if that term were an independent and authoritative standard, and has not linked the term to language of the CAA."<sup>275</sup> Later in the opinion the court explicitly emphasized that because it was reviewing the EPA's decisionmaking process in the disapproval action, the court could not consider any basis for the disapproval that was not articulated by the EPA in the rulemaking record.<sup>276</sup> The EPA is explaining its interpretation of the relevant CAA provisions in this action.

Second, the *Texas* court also asserted its own conclusion that there is nothing in the CAA that pertains to director's discretion in SIP provisions or to any

limitations on the exercise of such discretion. As the court stated it:

There is, in fact, no independent and authoritative standard in the CAA or its implementing regulations requiring that a state director's discretion be cabined in the way that the EPA suggests. Therefore, the EPA's insistence on some undefined limit on a director's discretion is . . . based on a standard that the CAA does not empower the EPA to enforce.

However, the court reached this conclusion based upon the administrative record before it and reiterated that it could not consider any basis for the disapproval not articulated by the EPA in the rulemaking record: "We are reviewing an agency's decisionmaking process, so the agency's action must be upheld, if at all, on the basis articulated by the agency itself."<sup>277</sup> Given the court's conclusion that the EPA had failed to provide any explanation as to why the CAA precludes director's discretion provisions in the challenged rulemaking, the EPA believes that the court did not have the opportunity to consider the Agency's rationale that is provided in this action. In the February 2013 proposal and in this document, the EPA is heeding the court's admonishment to explain in the rulemaking record the statutory basis for the Agency's interpretation of the CAA to prohibit director's discretion provisions that are inadequately bounded. As explained in this action, SIP provisions that functionally authorize a state agency to amend existing SIP emission limitations applicable to a source unilaterally without a SIP revision are contrary to multiple specific provisions of the CAA that pertain to SIP revisions.

Third, the *Texas* court emphasized that, notwithstanding the apparent flexibility that the director's discretion provision provided to the state agency with respect to deciding on the level of monitoring, recordkeeping and reporting to be imposed on each source by permit, the state's regulations explicitly prohibited relaxations of the level of control. The court gave weight to the explicit wording of the specific provision at issue in the case which provided that "[t]he existing level of control may not be lessened for any facility."<sup>278</sup> The EPA does not agree that the specific requirements for monitoring, recordkeeping and reporting for a given source are unrelated to the level of control. In any event, the director's discretion provisions of the type at issue in this

<sup>271</sup> *Luminant Generation Co. v. EPA*, 675 F.3d 917, 929 n.11 ("The provision at issues states: 'This standard permit must not be used [if] the executive director determines there are health effects concerns or the potential to exceed a [NAAQS] . . . until those concerns are addressed to the satisfaction of the executive director.'").

<sup>272</sup> *Id.*, 690 F.3d 670, 680.

<sup>273</sup> *Id.*, 690 F.3d 670, 682.

<sup>274</sup> *Id.*, 690 F.3d 670, 681.

<sup>275</sup> *Id.*

<sup>276</sup> *Id.*, 690 F.3d 670, 682.

<sup>277</sup> *Id.*, 690 F.3d 670, 682.

<sup>278</sup> *Id.*, 690 F.3d 670, 681.

action are not limited to those that would not “lessen” the level of control. To the contrary, the provisions at issue in this SIP call action authorize state agency personnel to grant outright exemptions from otherwise applicable SIP emission limitations during SSM events. Thus, the EPA concludes that this portion of the reasoning of the *Texas* decision would not apply to the current action.

Finally, the *Texas* court viewed the fact that the EPA had previously approved similar director’s discretion provisions in Texas and in Georgia as evidence that such provisions must be consistent with CAA requirements. The EPA acknowledges that it has, from time to time, approved SIP submissions that it should not have, whether through failure to recognize an issue, through a misunderstanding of the facts, through a mistaken interpretation of the law or as a result of other such circumstances. Congress itself clearly recognized that the EPA may occasionally take incorrect action on SIP submissions, whether incorrect at the time of the action or as a result of later events. Section 110(k)(5) and section 110(k)(6) both provide the EPA with explicit authority to address past approvals of SIP submissions that turn out to have been mistakes, whether at the time of the original approval or as a result of later developments. The fact that the EPA has explicit authority to issue a SIP call establishes that Congress anticipated that the Agency may at some point approve a SIP provision that it should not have approved because the provision is substantially inadequate to meet CAA requirements. The EPA does not agree, however, that its approval of a comparable SIP provision at some time in the past negates the Agency’s authority to disapprove a current SIP submission that fails to meet applicable procedural or substantive requirements. A challenger of the disapproval can always argue that the inconvincibility between the prior approval and the later disapproval is evidence that the EPA is being arbitrary and capricious in its interpretation of the statute—but at bottom the correct question is whether the Agency is correctly interpreting the CAA in the disapproval action currently being challenged. The fact that the EPA may have approved another SIP submission with a comparable defect in the past does not override the requirements of the CAA.

Significantly, the commenters apparently make the same mistake as the EPA did in the rulemakings at issue in the cited court decisions, by not adequately addressing the relevant statutory provisions that apply to SIP provisions in general and apply to

revisions of existing EPA-approved SIP provisions in particular. The commenters failed to consider the core problem with unbounded director’s discretion provisions (*i.e.*, that such provisions allow for unilateral revision, relaxation or exemption from SIP emission limitations, without adequate evaluation by the EPA and the public). As a result, the commenters do not address the proper application of CAA provisions that govern SIP revisions and the rationale for requiring that such SIP revisions be reviewed by the EPA in accordance with the explicit requirements of sections 110(k)(3), 110(l) and 193 and the other requirements germane to the SIP provision at issue (*e.g.*, RACT-level controls for sources located in nonattainment areas). Indeed, the commenters did not acknowledge the inherent problem with director’s discretion provisions, which is that such provisions have the potential to undermine SIP emission limitations dramatically through *ad hoc* exemptions for excess emissions during SSM events. By allowing for exemptions for emissions during SSM events, these provisions also remove the incentives for sources to be properly designed, maintained and operated so that they will comply continuously with SIP emission limitations during all modes of source operation.

The EPA notes that the commenters did not acknowledge or address the specific explanation that the Agency provided in the February 2013 proposal, including the EPA’s identification of the specific statutory provisions applicable to the revision of SIP provisions. Because these commenters did not address the EPA’s explanation of the CAA provisions that it interprets to preclude director’s discretion provisions in SIPs, the commenters have not provided substantive comment concerning the EPA’s interpretation of the CAA on this issue. The commenters did not dispute the EPA’s interpretation of the CAA on this particular point on statutory grounds. Rather, the commenters argued based on their own policy preferences for an approach to director’s discretion provisions that would allow sources to receive *ad hoc* exemptions for excess emissions during SSM events without the need for imposition of an appropriate alternative SIP emission limitation, for adequate public process for development of such an alternative SIP emission limitation or for oversight by the EPA of any revision to the applicable SIP emission limitations as required by the CAA.

e. Comments opposed to the EPA’s approach on the premise that there is no

“director’s discretion” concern if the SIP provision creates a permit program through which state officials grant sources variances or exemptions from otherwise applicable SIP provisions.

*Comment:* State commenters argued that they have imposed sufficient boundaries on the exercise of director’s discretion provisions in their SIPs, by virtue of the fact that they grant sources variances or exemptions from SIP emission limitations through a permitting program. Commenters stated that their permitting program provides a more structured process and an opportunity for public input into the decisions concerning variances or exemptions. Moreover, they argued that state law does provide preconditions to the granting of variances or exemptions and thus these are not granted automatically. Based upon these procedural requirements, the commenters contended that their exercise of director’s discretion is not “unbounded” as the EPA suggested in the February 2013 proposal.

*Response:* The EPA acknowledges that a permitting program can provide a more structured and consistent process than may be provided in a SIP for granting variances and exemptions from SIP emission limitations and related requirements and may provide more opportunity for public participation in those decisions. However, to the extent that the end result of this permitting process is that a given source is given a less stringent emission limitation than the otherwise applicable SIP emission limitation or is given an outright exemption from the SIP emission limitation, this result still functionally constitutes a revision of the SIP emission limitation without meeting the statutory requirements for a SIP revision. The EPA is not authorized to approve a program that in essence allows a SIP revision without compliance with the applicable statutory requirements in sections 110(k)(3), 110(l) and 193 and any other provision that is germane to the particular SIP emission limitation at issue.

The EPA emphasizes that air agencies always retain the ability to regulate sources more stringently than required by the provisions in its SIP. Section 116 explicitly provides, with certain limited exceptions, that states retain the authority to regulate emissions from sources. Unless preempted from controlling a particular source, nothing precludes states from regulating sources more stringently than otherwise required to meet CAA requirements, so long as they meet CAA requirements. However, if there is an applicable

emission limitation in a SIP provision (or an EPA regulation promulgated pursuant to sections 111 or 112), section 116 explicitly stipulates, “such State or political subdivision may not adopt or enforce any emission standard or emission limitation which is less stringent than the standard or limitation under such plan or limitation.” Thus, a state could elect to regulate a source more stringently than required by a specific SIP emission limitation (e.g., by imposing a more stringent numerical emission limitation on a particular source or by imposing additional recordkeeping, reporting and monitoring requirements in addition to those of the SIP provision), but the state cannot weaken or eliminate the SIP emission limitation (e.g., by granting exemptions from applicable SIP emission limitations for emissions during SSM events). If a state elects to alter an emission limitation in a SIP provision, the state must do so in accordance with the statutory provisions applicable to SIP revisions.

Finally, the EPA notes, if a state elects to use a permitting process as a source-by-source means of imposing more stringent emission limitations or additional requirements on sources, doing so can be an acceptable approach. So long as the underlying SIP provisions are adequate to provide the requisite level of control or requirements to assure enforceability, a state is free to use a permitting program to impose additional requirements above and beyond those provided in the SIP.

#### *D. Enforcement Discretion Provisions Pertaining to SSM Events*

##### 1. What the EPA Proposed

In the February 2013 proposal, the EPA explained in detail that it believes that the CAA allows states to adopt SIP provisions that impose reasonable limits upon the exercise of enforcement discretion by air agency personnel, so long as those provisions do not apply to the EPA or other parties. The EPA believes that its interpretation of the CAA with respect to enforcement discretion provisions applicable to emissions during SSM events has been clear in the SSM Policy. In the 1982 SSM Guidance and the 1983 SSM Guidance, the EPA indicated that states could elect to adopt SIP provisions that include criteria that apply to the exercise of enforcement discretion by state personnel. In the 1999 SSM Guidance, the EPA emphasized that it would not approve such provisions if they would operate to impose the state’s enforcement discretion decisions upon the EPA or other parties because this

would be inconsistent with requirements of title I of the CAA.<sup>279</sup> The EPA acknowledged, however, that both the states and the Agency have failed to adhere to the CAA with respect to this issue in the past, and thus the need for this SIP call action to correct the existing deficiencies in SIPs.

##### 2. What Is Being Finalized in This Action

In order to be clear about this important point on a going-forward basis, the EPA is reiterating that SIP provisions cannot contain enforcement discretion provisions that would bar enforcement by the EPA or citizens for any violation of SIP requirements if the state elects not to enforce.

The EPA has previously issued a SIP call to a state specifically for purposes of clarifying an existing SIP provision to assure that regulated entities, regulators and courts will not misunderstand the correct interpretation of the provision.<sup>280</sup> As the EPA stated in that action:

... SIP provisions that give exclusive authority to a state to determine whether an enforcement action can be pursued for an exceedance of an emission limit are inconsistent with the CAA’s regulatory scheme. EPA and citizens, and any court in which they seek to file an enforcement claim, must retain the authority to independently evaluate whether a source’s exceedance of an emission limit warrants enforcement action.<sup>281</sup>

The EPA has explained in previous iterations of its SSM Policy that a fundamental principle of the CAA with respect to SIP provisions is that the provisions must be enforceable not only by the state but also by the EPA and others pursuant to the citizen suit authority of section 304. Accordingly, the EPA has long stated that SIP provisions cannot be structured such that a decision by the state not to enforce may bar enforcement by the EPA or other parties.

##### 3. Response to Comments

The EPA received a small number of comments concerning the issue of ambiguous enforcement discretion provisions in SIPs. For clarity and ease of discussion, the EPA is responding to these comments, grouped by issue, in this section of this document.

<sup>279</sup> See 1999 SSM Guidance at 3.

<sup>280</sup> See “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision,” 75 FR 70888 at 70892–93 (November 19, 2010) (proposed SIP call, *inter alia*, to rectify an enforcement discretion provision that in fact appeared to bar enforcement by the EPA or citizens if the state decided not to enforce).

<sup>281</sup> See *id.*

a. Comments that supported the clarification of ambiguous enforcement discretion provisions in general but opposed the EPA’s views with respect to specific SIP provisions.

*Comment:* Environmental group commenters disagreed with the EPA’s proposed denial of the Petition with respect to specific enforcement discretion provisions in the SIPs of several states. The commenters contended that the SIP provisions are too ambiguous for courts to recognize that the exercise of enforcement discretion by state personnel did not preclude enforcement by the EPA or others.

*Response:* The EPA disagrees with these comments. In the February 2013 proposal, the EPA explained how it reads the specific enforcement discretion provisions in the SIPs of each of these states. The EPA explained its evaluation of these provisions in detail. In comments submitted on the February 2013 proposal, the states in question agreed with the EPA’s reading of the provisions. Each state agreed that these provisions only applied to air agency personnel and not to the EPA or any other party. Thus, the EPA believes that there should be no dispute about the proper interpretation of these SIP provisions in any potential future enforcement action.

b. Comments that opposed the EPA’s issuing SIP calls to obtain state agency clarification of ambiguous enforcement discretion provisions in SIPs.

*Comment:* One commenter asserted that requiring states to correct an ambiguous “enforcement discretion” provision in its SIP in order to eliminate “perceived ambiguity” is a “waste of resources.” Although agreeing that a state’s exercise of enforcement discretion cannot affect enforcement by the EPA or other parties under the citizen suit provision, the commenter believed that the existence of ambiguous provisions that could be misconstrued by a court to bar enforcement by the EPA or others if the state elects not to enforce is not a significant concern.

*Response:* The EPA agrees with the commenter that a state’s legitimate exercise of enforcement discretion not to enforce in the event of violations of SIP provisions should have no bearing whatsoever on whether the EPA or others may seek to enforce for the same violations. However, the Agency disagrees with the commenter concerning whether some SIP provisions need to be clarified in order to assure that this principle is adhered to in practice in enforcement actions. For example, if on the face of an approved SIP provision the state

appears to have the unilateral authority to decide that a specific event is not a “violation” or if it otherwise appears that if the state elects not to pursue enforcement for such violation then no other party may do so, then that SIP provision fails to meet fundamental legal requirements for enforcement under the CAA. If the SIP provision appears to provide that the decision of the state not to enforce for an exceedance of the SIP emission limit bars the EPA or others from bringing an enforcement action, then that is an impermissible imposition of the state’s enforcement discretion decisions on other parties. The EPA has previously issued a SIP call to resolve just such an ambiguity, and its authority to do so has been upheld.<sup>282</sup> Given that the commenter agrees with the underlying principle that a state’s exercise of enforcement discretion should have no bearing on the exercise of enforcement authority of the EPA or citizens, the Agency presumes that the commenter would not in fact oppose a SIP revision to clarify that point. Moreover, the commenter would not be harmed by such a SIP revision and would have no basis upon which to challenge it. As the clarification of the ambiguous SIP provision should be in the interest of all involved, including the regulated entities, the regulators and the public, the EPA does not believe that resources used to eliminate such ambiguities would be wasted.

#### *E. Affirmative Defense Provisions in SIPs During Any Period of Operation*

As explained in detail in the SNPR, the EPA believes that the CAA prohibits affirmative defense provisions in SIPs. The EPA acknowledges that since the 1999 SSM Guidance, the Agency had interpreted the CAA to allow narrowly tailored affirmative defense provisions. However, the EPA’s interpretation of the statute was based on arguments that have since been rejected by the DC Circuit in the *NRDC v. EPA* decision. The EPA received a substantial number of comments, both supportive and adverse, concerning the issue of affirmative defense provisions in SIPs. These comments and the EPA’s responses to them are discussed in section IV.D of this document.

#### *F. Relationship Between SIP Provisions and Title V Regulations*

As the EPA explained in the February 2013 proposal, the SIP provisions

identified in the Petition highlighted an area of potential ambiguity or conflict between the SSM Policy applicable to SIP provisions and the EPA’s regulations applicable to CAA title V operating permit provisions. The EPA has promulgated regulations in 40 CFR part 70 applicable to state operating permit programs and in 40 CFR part 71 applicable to federal operating permit programs.<sup>283</sup> Under each set of regulations, the EPA has provided that permits may contain, at the permitting authority’s discretion, an “emergency provision.”<sup>284</sup>

The regulatory parameters applicable to such emergency provisions in operating permits are the same for state operating permit program regulations and the federal operating permit program regulations. The definition of emergency is identical in the regulations for each program.<sup>285</sup>

Thus, if there is an emergency event meeting the regulatory definition, then the EPA’s regulations for operating permit programs provide for an “affirmative defense” to enforcement for noncompliance with technology-based standards during the emergency event, provided the source can demonstrate through specified forms of evidence that the event and the permittee’s actions during and after the event met a number of specific requirements.<sup>286</sup>

The Petitioner did not directly request that the EPA evaluate the existing regulatory provisions applicable to operating permits in 40 CFR part 70 and 40 CFR part 71, and the EPA is not revising those provisions in this action. In its February 2013 proposal, the EPA explained that while it was proposing to allow narrowly drawn affirmative defense provisions for malfunctions in SIPs, SIP provisions that were modeled after the regulations in 40 CFR part 70 and 40 CFR part 71 were still in conflict with the EPA’s interpretation of the CAA for SIP provisions and thus could not be allowed.<sup>287</sup> However, as explained in the SNPR, the reasoning in the subsequent *NRDC v. EPA* court decision is that even narrowly defined affirmative defense provisions in SIPs are no longer consistent with the

CAA.<sup>288</sup> Accordingly, regardless of whether affirmative defense provisions in SIPs were defined more narrowly than were the provisions applicable to operating permits under 40 CFR part 70 and 40 CFR part 71, they cannot be included in SIPs. For these reasons, the EPA has evaluated the specific SIP provisions identified in the Petition and is taking final action to find substantial inadequacy and to issue a SIP call for those SIP provisions that include features that are inappropriate for SIPs, regardless of whether those provisions contain terms found in other regulations.

Additionally, we are not taking action in this rulemaking to alter the emergency provisions found in 40 CFR part 70 and 40 CFR part 71. Those regulations, which are applicable to title V operating permits, may only be changed through appropriate rulemaking to revise parts 70 and 71. Further, any existing permits that contain such emergency provisions may only be changed through established permitting procedures. The EPA is considering whether to make changes to 40 CFR part 70 and 40 CFR part 71, and if so, how best to make those changes. In any such action, EPA would also intend to address the timing of any changes to existing title V operating permits. Until that time, as part of normal permitting process, the EPA encourages permitting authorities to consider the discretionary nature of the emergency provisions when determining whether to continue to include permit terms modeled on those provisions in operating permits that the permitting authorities are issuing in the first instance or renewing.

#### *G. Intended Effect of the EPA’s Action on the Petition*

As in the 2001 SSM Guidance, the EPA is endeavoring to be particularly clear about the intended effect of its final action on the Petition, of its clarifications and revisions to the SSM Policy and of its application of the updated SSM Policy to the specific existing SIP provisions discussed in section IX of this document.

First, the EPA only intends its actions on the larger policy or legal issues raised by the Petitioner to inform the public of the EPA’s current views on the requirements of the CAA with respect to SIP provisions related to SSM events. Thus, for example, the EPA’s proposed grant of the Petitioner’s request that the EPA interpret the CAA to disallow all affirmative defense provisions is intended to convey that the EPA has

<sup>283</sup> See 40 CFR 70.1–70.12; 40 CFR 71.1–71.27.

<sup>284</sup> See 40 CFR 70.6(g); 40 CFR 71.6(g). The EPA also notes that states are not required to adopt the “emergency provision” contained in 40 CFR 70.6(g) into their state operating permit programs, and many states have chosen not to do so. See, e.g., “Clean Air Act Full Approval of Partial Operating Permit Program; Allegheny County; Pennsylvania; Direct final rule,” 66 FR 55112 at 55113 (November 1, 2001).

<sup>285</sup> See 40 CFR 70.6(g)(1); 40 CFR 71.6(g)(1).

<sup>286</sup> 40 CFR 70.6(g)(3); 40 CFR 71.6(g)(3).

<sup>287</sup> See February 2013 proposal, 78 FR 12459 at 12481–82.

<sup>288</sup> See SNPR, 79 FR 55919 at 55929–30.

<sup>282</sup> See “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision; Proposed rule,” 76 FR 21639 (April 18, 2011).

changed its views about such provisions and that its prior views expressed in the 1999 SSM Guidance and related rulemakings on SIP submissions were incorrect. In this fashion, the EPA's action on the Petition provides updated guidance relevant to future SIP actions.

Second, the EPA only intends its actions on the specific existing SIP provisions identified in the Petition to be applicable to those provisions. The EPA does not intend its action on those specific provisions to alter the current status of any other existing SIP provisions relating to SSM events. The EPA must take later rulemaking actions, if necessary, in order to evaluate any comparable deficiencies in other existing SIP provisions that may be inconsistent with the requirements of the CAA. Again, however, the EPA's actions on the Petition provide updated guidance on the types of SIP provisions that it believes would be consistent with CAA requirements in future rulemaking actions.

Third, the EPA does not intend its action on the Petition to affect immediately any existing permit terms or conditions regarding excess emissions during SSM events that reflect previously approved SIP provisions. The EPA's finding of substantial inadequacy and a SIP call for a given state provides the state time to revise its SIP in response to the SIP call through the necessary state and federal administrative process. Thereafter, any needed revisions to existing permits will be accomplished in the ordinary course as the state issues new permits or reviews and revises existing permits. The EPA does not intend the issuance of a SIP call to have automatic impacts on the terms of any existing permit.

Fourth, the EPA does not intend its action on the Petition to alter the emergency defense provisions at 40 CFR 70.6(g) and 40 CFR 71.6(g), *i.e.*, the title V regulations pertaining to "emergency provisions" permissible in title V operating permits. The EPA's regulations applicable to title V operating permits may only be changed through appropriate rulemaking procedures and existing permit terms may only be changed through established permitting processes.

Fifth, the EPA does not intend its interpretations of the requirements of the CAA in this action on the Petition to be legally dispositive with respect to any particular current enforcement proceedings in which a violation of SIP emission limitations is alleged to have occurred. The EPA handles enforcement matters by assessing each situation, on a case-by-case basis, to determine the appropriate response and resolution.

For purposes of alleged violations of SIP provisions, however, the terms of the applicable SIP provision will continue to govern until that provision is revised following the appropriate process for SIP revisions, as required by the CAA.

Finally, the EPA does intend this final action, developed through notice and comment, to be the statement of its most current SSM Policy, reflecting the EPA's interpretation of CAA requirements applicable to SIP provisions related to excess emissions during SSM events. In this regard, the EPA is adding to and clarifying its prior statements in the 1999 SSM Guidance and making the specific changes to that guidance as discussed in this action. Thus, this final notice for this action will constitute the EPA's SSM Policy on a going-forward basis.

### VIII. Legal Authority, Process and Timing for SIP Calls

#### A. SIP Call Authority Under Section 110(k)(5)

##### 1. General Statutory Authority

The CAA provides a mechanism for the correction of flawed SIPs, under CAA section 110(k)(5), which provides that "[w]henver the Administrator finds that the applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant national ambient air quality standards, to mitigate adequately the interstate pollutant transport described in section [176A] of this title or section [184] of this title, or to otherwise comply with any requirement of [the Act], the Administrator shall require the State to revise the plan as necessary to correct such inadequacies. The Administrator shall notify the State of the inadequacies and may establish reasonable deadlines (not to exceed 18 months after the date of such notice) for the submission of such plan revisions."

By its explicit terms, this provision authorizes the EPA to find that a state's existing SIP is "substantially inadequate" to meet CAA requirements and, based on that finding, to "require the State to revise the [SIP] as necessary to correct such inadequacies." This type of action is commonly referred to as a "SIP call."<sup>289</sup>

<sup>289</sup> The EPA also has other discretionary authority to address incorrect SIP provisions, such as the authority in CAA section 110(k)(6) for the EPA to correct errors in prior SIP approvals. The authority in CAA section 110(k)(5) and CAA section 110(k)(6) can sometimes overlap and offer alternative mechanisms to address problematic SIP provisions. In this instance, the EPA believes that the mechanism provided by CAA section 110(k)(5) is the better approach, because using the mechanism of the CAA section 110(k)(6) error correction would

Significantly, CAA section 110(k)(5) explicitly authorizes the EPA to issue a SIP call "whenever" the EPA makes a finding that the existing SIP is substantially inadequate, thus providing authority for the EPA to take action to correct existing inadequate SIP provisions even long after their initial approval, or even if the provisions only become inadequate due to subsequent events.<sup>290</sup> The statutory provision is worded in the present tense, giving the EPA authority to rectify any deficiency in a SIP that currently exists, regardless of the fact that the EPA previously approved that particular provision in the SIP and regardless of when that approval occurred.

It is also important to emphasize that CAA section 110(k)(5) expressly directs the EPA to take action if the SIP provision is substantially inadequate, not just for purposes of attainment or maintenance of the NAAQS but also for purposes of "any requirement" of the CAA. The EPA interprets this reference to "any requirement" of the CAA on its face to authorize reevaluation of an existing SIP provision for compliance with those statutory and regulatory requirements that are germane to the SIP provision at issue. Thus, for example, a SIP provision that is intended to be an "emission limitation" for purposes of a nonattainment plan for purposes of the 1997 PM<sub>2.5</sub> NAAQS must meet various applicable statutory and regulatory requirements, including requirements of CAA section 110(a)(2)(A) such as enforceability, the definition of the term "emission limitation" in CAA section 302(k), the level of emissions control

eliminate the affected emission limitations from the SIP potentially leaving no emission limitation in place, whereas the mechanism of the CAA section 110(k)(5) SIP call will keep the provisions in place during the pendency of the state's revision of the SIP and the EPA's action on that revision. In the case of provisions that include impermissible automatic exemptions or discretionary exemptions, the EPA believes that retention of the existing SIP provision is preferable to the absence of the provision in the interim.

<sup>290</sup> See, e.g., *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (upholding the "NO<sub>x</sub> SIP Call" to states requiring revisions to previously approved SIPs with respect to ozone transport and section 110(a)(2)(D)(i)(I)); "Action to Ensure Authority To Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Substantial Inadequacy and SIP Call; Final rule," 75 FR 77698 (December 13, 2010) (the EPA issued a SIP call to 13 states because the endangerment finding for GHGs meant that these previously approved SIPs were substantially inadequate because they did not provide for the regulation of GHGs in the PSD permitting programs of these states as required by CAA section 110(a)(2)(C) and section 110(a)(2)(I)); "Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision," 74 FR 21639 (April 18, 2011) (the EPA issued a SIP call to rectify SIP provisions dating back to 1980).

required to constitute a “reasonably available control measure” in CAA section 172(c)(1) and the other applicable statutory requirements for the implementation of the 1997 PM<sub>2.5</sub> NAAQS. Failure to meet any of those applicable requirements could constitute a substantial inadequacy suitable for a SIP call, depending upon the facts and circumstances. By contrast, that same SIP provision should not be expected to meet specifications of the CAA that are completely irrelevant for its intended purpose, such as the unrelated requirement of CAA section 110(a)(2)(G) that the state have general legal authority comparable to CAA section 303 for emergencies.

Use of the term “any requirement” in CAA section 110(k)(5) also reflects the fact that SIP provisions could be substantially inadequate for widely differing reasons. One provision might be substantially inadequate because it fails to prohibit emissions that contribute to violations of the NAAQS in downwind areas many states away. Another provision, or even the same provision, could be substantially inadequate because it also infringes on the legal right of members of the public who live adjacent to the source to enforce the SIP. Thus, the EPA has previously interpreted CAA section 110(k)(5) to authorize a SIP call to rectify SIP inadequacies of various kinds, both broad and narrow in terms of the scope of the SIP revisions required.<sup>291</sup> On its face, CAA section 110(k)(5) authorizes the EPA to take action with respect to SIP provisions that are substantially inadequate to meet any CAA requirements, including requirements relevant to the proper treatment of excess emissions during SSM events.

An important baseline question is whether a given deficiency renders the SIP provision “substantially inadequate.” The EPA notes that the term “substantially inadequate” is not defined in the CAA. Moreover, CAA section 110(k)(5) does not specify a particular form of analysis or methodology that the EPA must use to evaluate SIP provisions for substantial inadequacy. Thus, under *Chevron* step

2, the EPA is authorized to interpret this provision reasonably, consistent with the provisions of the CAA. In addition, the EPA is authorized to exercise its discretion in applying this provision to determine whether a given SIP provision is substantially inadequate. To the extent that the term “substantially inadequate” is ambiguous, the EPA believes that it is reasonable to interpret the term in light of the specific purposes for which the SIP provision at issue is required, and thus whether the provision meets the fundamental CAA requirements applicable to such a provision.

The EPA does not interpret CAA section 110(k)(5) to require a showing that the effect of a SIP provision that is facially inconsistent with CAA requirements is causally connected to a particular adverse impact. For example, the plain language of CAA section 110(k)(5) does not require direct causal evidence that excess emissions have occurred during a specific malfunction at a specific source and have literally caused a violation of the NAAQS in order to conclude that the SIP provision is substantially inadequate.<sup>292</sup> A SIP provision that purports to exempt a source from compliance with applicable emission limitations during SSM events, contrary to the requirements of the CAA for continuous emission limitations, does not become legally permissible merely because there is not definitive evidence that any excess emissions have resulted from the exemption and have literally caused a specific NAAQS violation.<sup>293</sup>

Similarly, the EPA does not interpret CAA section 110(k)(5) to require direct causal evidence that a SIP provision that improperly undermines enforceability of the SIP has resulted in a specific failed enforcement attempt by any party. A SIP provision that has the practical effect of barring enforcement by the EPA or through a citizen suit, either because it would bar enforcement if an air agency elects to grant a discretionary exemption or to exercise its own enforcement discretion, is inconsistent

with fundamental requirements of the CAA.<sup>294</sup> Such a provision also does not become legally permissible merely because there is not definitive evidence that the state’s action literally undermined a specific attempted enforcement action by other parties. Indeed, the EPA notes that these impediments to effective enforcement likely have a chilling effect on potential enforcement in general. The possibility for effective enforcement of emission limitations in SIPs is itself an important principle of the CAA, as embodied in CAA sections 113 and 304.

The EPA’s interpretation of CAA section 110(k)(5) is that the fundamental integrity of the CAA’s SIP process and structure are undermined if emission limitations relied upon to meet CAA requirements related to protection of public health and the environment can be violated without potential recourse. For example, the EPA does not believe that it is authorized to issue a SIP call to rectify an impermissible automatic exemption provision only after a violation of the NAAQS has occurred, or only if that NAAQS violation can be directly linked to the excess emissions that resulted from the impermissible automatic exemption by a particular source on a particular day. If the SIP contains a provision that is inconsistent with fundamental requirements of the CAA, that renders the SIP provision substantially inadequate.

The EPA notes that CAA section 110(k)(5) can also be an appropriate tool to address ambiguous SIP provisions that could be read by a court in a way that would violate the requirements of the CAA. For example, if an existing SIP provision concerning the state’s exercise of enforcement discretion is sufficiently ambiguous that it could be construed to preclude enforcement by the EPA or through a citizen suit if the state elects to deem a given SSM event not a violation, then that could render the provision substantially inadequate by interfering with the enforcement structure of the CAA.<sup>295</sup> If a court could

<sup>291</sup> See, e.g., “Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone,” 63 FR 57356 (October 27, 1998) (the EPA issued a SIP call to 23 states requiring them to rectify the failure to address interstate transport of pollutants as required by section 110(a)(2)(D); “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision,” 74 FR 21639 (April 18, 2011) (the EPA issued a SIP call to one state requiring it to rectify several very specific SIP provisions).

<sup>292</sup> See *US Magnesium, LLC v. EPA*, 690 F.3d 1157 (10th Cir. 2012) (upholding the EPA’s interpretation of section 110(k)(5) to authorize a SIP call when the SIP provisions are inconsistent with CAA requirements).

<sup>293</sup> The EPA notes that the GHG SIP call did not require “proof” that the failure of a state to address GHGs in a given PSD permit “caused” particularized environmental impacts; it was sufficient that the state’s SIP failed to meet the current fundamental legal requirements for regulation of GHGs in accordance with the CAA. See “Action to Ensure Authority To Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Substantial Inadequacy and SIP Call; Final rule,” 75 FR 77698 (December 13, 2010).

<sup>294</sup> See “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision,” 74 FR 21639 at 21641 (April 18, 2011); see also *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1168 (10th Cir. 2012) (upholding the EPA’s interpretation of section 110(k)(5) to authorize a SIP call when the state’s SIP provision worded so that state decisions whether a given excess emissions event constituted a violation interfered with enforcement by the EPA or citizens for such event).

<sup>295</sup> Courts have on occasion interpreted SIP provisions to limit the EPA’s enforcement authority as a result of ambiguous SIP provisions. See, e.g., *U.S. v. Ford Motor Co.*, 736 F.Supp. 1539 (W.D. Mo. 1990) and *U.S. v. General Motors Corp.*, 702 F.Supp. 133 (N.D. Texas 1988) (the EPA could not pursue enforcement of SIP emission limitations



construe the ambiguous SIP provision to bar enforcement, then the EPA believes that it may be appropriate to take action to eliminate that uncertainty by requiring the state to revise the ambiguous SIP provision. Under such circumstances, it may be appropriate for the EPA to issue a SIP call to assure that the SIP provisions are sufficiently clear and consistent with CAA requirements on their face.<sup>296</sup>

In this instance, the Petition raised questions concerning the adequacy of existing SIP provisions that pertain to the treatment of excess emissions during SSM events. The SIP provisions identified by the Petitioner generally fall into four major categories: (i) Automatic exemptions; (ii) exemptions as a result of director's discretion; (iii) provisions that appear to bar enforcement by the EPA or through a citizen suit if the state decides not to enforce through exercise of enforcement discretion; and (iv) affirmative defense provisions that purport to limit or eliminate a court's jurisdiction to assess liability and impose remedies for exceedances of SIP emission limitations. The EPA believes that each of these types of SIP deficiency potentially justifies a SIP call pursuant to CAA section 110(k)(5), if the Agency determines that a SIP call is the proper means to rectify an existing deficiency in a SIP.

## 2. Substantial Inadequacy of Automatic Exemptions

The EPA believes that SIP provisions that provide an automatic exemption from otherwise applicable emission limitations are substantially inadequate to meet CAA requirements. A typical SIP provision that includes an impermissible automatic exemption would provide that a source has to meet a specific emission limitation, except during startup, shutdown and malfunction, and by definition any excess emissions during such events would not be violations and thus there could be no enforcement based on those excess emissions. The EPA's interpretation of CAA requirements for

SIP provisions has been reiterated multiple times through the SSM Policy and actions on SIP submissions that pertain to this issue. The EPA's longstanding view is that SIP provisions that include automatic exemptions for excess emissions during SSM events, such that the excess emissions during those events are not considered violations of the applicable emission limitations, do not meet CAA requirements. Such exemptions undermine the attainment and maintenance of the NAAQS, protection of PSD increments and improvement of visibility, and SIP provisions that include such exemptions fail to meet these and other fundamental requirements of the CAA.

The EPA interprets CAA sections 110(a)(2)(A) and 110(a)(2)(C) to require that SIPs contain "emission limitations" to meet CAA requirements. Pursuant to CAA section 302(k), those emission limitations must be "continuous." Automatic exemptions from otherwise applicable emission limitations thus render those limits less than continuous as required by CAA sections 302(k), 110(a)(2)(A) and 110(a)(2)(C), thereby inconsistent with a fundamental requirement of the CAA and thus substantially inadequate as contemplated in CAA section 110(k)(5).

This inadequacy has far-reaching impacts. For example, air agencies rely on emission limitations in SIPs in order to provide for attainment and maintenance of the NAAQS. These emission limitations are often used by air agencies to meet various requirements including: (i) In the estimates of emissions for emissions inventories; (ii) in the determination of what level of emissions meets various statutory requirements such as "reasonably available control measures" in nonattainment SIPs or "best available retrofit technology" in regional haze SIPs; and (iii) in critical modeling exercises such as attainment demonstration modeling for nonattainment areas or increment use for PSD permitting purposes.

Because the NAAQS are not directly enforceable against individual sources, air agencies rely on the adoption and enforcement of these generic and specific emission limitations in SIPs in order to provide for attainment and maintenance of the NAAQS, protection of PSD increments and improvement of visibility, and to meet other CAA requirements. Automatic exemption provisions for excess emissions eliminate the possibility of enforcement for what would otherwise be clear violations of the relied-upon emission limitations and thus eliminate any

opportunity to obtain injunctive relief that may be needed to protect the NAAQS or meet other CAA requirements. Likewise, the elimination of any possibility for penalties for what would otherwise be clear violations of the emission limitations, regardless of the conduct of the source, eliminates any opportunity for penalties to encourage appropriate design, operation and maintenance of sources and to encourage efforts by source operators to prevent and to minimize excess emissions in order to protect the NAAQS or to meet other CAA requirements. Removal of this monetary incentive to comply with the SIP reduces a source's incentive to design, operate, and maintain its facility to meet emission limitations at all times.

## 3. Substantial Inadequacy of Director's Discretion Exemptions

The EPA believes that SIP provisions that allow discretionary exemptions from otherwise applicable emission limitations are substantially inadequate to meet CAA requirements for the same reasons as automatic exemptions, but for additional reasons as well. A typical SIP provision that includes an impermissible "director's discretion" component would purport to authorize air agency personnel to modify existing SIP requirements under certain conditions, e.g., to grant a variance from an otherwise applicable emission limitation if the source could not meet the requirement in certain circumstances.<sup>297</sup> If such provisions are sufficiently specific, provide for sufficient public process and are sufficiently bounded, so that it is possible to anticipate at the time of the EPA's approval of the SIP provision how that provision will actually be applied and the potential adverse impacts thereof, then such a provision might meet basic CAA requirements. In essence, if it is possible to anticipate and evaluate in advance how the exercise of enforcement discretion could impact compliance with other CAA requirements, then it may be possible to determine in advance that the preauthorized exercise of director's discretion will not interfere with other CAA requirements, such as providing for attainment and maintenance of the

<sup>297</sup> The EPA notes that problematic "director's discretion" provisions are not limited only to those that purport to authorize alternative emission limitations from those required in a SIP. Other problematic director's discretion provisions could include those that purport to provide for discretionary changes to other substantive requirements of the SIP, such as applicability, operating requirements, recordkeeping requirements, monitoring requirements, test methods, and alternative compliance methods.

where states had approved alternative emission limitations under procedures the EPA had approved in the SIP); *Florida Power & Light Co. v. Costle*, 650 F.2d 579, 588 (5th Cir. 1981) (the EPA to be accorded no discretion in interpreting state law). The EPA does not agree with the holdings of these cases, but they illustrate why it is reasonable to eliminate any uncertainty about enforcement authority by requiring a state to remove or revise a SIP provision that could be read in a way inconsistent with the requirements of the CAA.

<sup>296</sup> See *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1170 (10th Cir. 2012) (upholding the EPA's use of SIP call authority in order to clarify language in the SIP that could be read to violate the CAA, even if a court has not yet interpreted the language in that way).

NAAQS. Most director's discretion-type provisions cannot meet this basic test.

Unless it is possible at the time of the approval of the SIP provision to anticipate and analyze the impacts of the potential exercise of the director's discretion, such provisions functionally could allow *de facto* revisions of the approved emission limitations required by the SIP without complying with the process for SIP revisions required by the CAA. Sections 110(a)(1) and (2) of the CAA impose procedural requirements on states that seek to amend SIP provisions. The elements of CAA section 110(a)(2) and other sections of the CAA, depending upon the subject of the SIP provision at issue, impose substantive requirements that states must meet in a SIP revision. Section 110(i) of the CAA prohibits modification of SIP requirements for stationary sources by either the state or the EPA, except through specified processes.<sup>298</sup> Section 110(k) of the CAA imposes procedural and substantive requirements on the EPA for action upon any SIP revision. Sections 110(l) and 193 of the CAA both impose additional procedural and substantive requirements on the state and the EPA in the event of a SIP revision. Chief among these many requirements for a SIP revision would be the necessary demonstration that the SIP revision in question would not interfere with any requirement concerning attainment and reasonable further progress or "any other applicable requirement of" the CAA to meet the requirements of CAA section 110(l).

<sup>298</sup> Section 110(i) of the Act states that "no order, suspension, plan revision or other action modifying any requirement of an applicable implementation plan may be taken with respect to any stationary source by the State or by the Administrator" except in compliance with the CAA's requirements for promulgation or revision of a plan, with limited exceptions. *See, e.g.*, "Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Colorado; Revisions to Regulation 1; Notice of proposed rulemaking," 75 FR 42342 at 42344 (July 21, 2010) (proposing to disapprove "director discretion" provisions as inconsistent with CAA requirements and noting that "[s]ection 110(i) specifically prohibits States, except in certain limited circumstances, from taking any action to modify any requirement of a SIP with respect to any stationary source, except through a SIP revision"), finalized as proposed at 76 FR 4540 (January 26, 2011); "Corrections to the California State Implementation Plan," 69 FR 67062 at 67063 (November 16, 2004) (noting that "a state-issued variance, though binding as a matter of State law, does not prevent EPA from enforcing the underlying SIP provisions unless and until EPA approves that variance as a SIP revision"); *Industrial Environmental Association v. Browner*, No. 97-71117 at n.2 (9th Cir. May 26, 2000) (noting that the EPA has consistently treated individual variances granted under state variance provisions as "modifications of the SIP requiring independent EPA approval").

Congress presumably imposed these many explicit requirements in order to assure that there is adequate public process at both the air agency and federal level for any SIP revision and to assure that any SIP revision meets the applicable substantive requirements of the CAA. Although no provision of the CAA explicitly addresses whether a "director's discretion" provision by that term is acceptable, the EPA interprets the statute to prohibit such provisions unless they would be consistent with the statutory and regulatory requirements that apply to SIP revisions.<sup>299</sup> A SIP provision that purports to give broad and unbounded director's discretion to alter the existing legal requirements of the SIP with respect to meeting emission limitations would be tantamount to allowing a revision of the SIP without meeting the applicable procedural and substantive requirements for such a SIP revision. The EPA's approval of a SIP provision that purported to allow unilateral revisions of the emission limitations in the SIP by the state, without complying with the statutory requirements for a SIP revision, would itself be contrary to fundamental procedural and substantive requirements of the CAA.

For this reason, the EPA has long discouraged the creation of new SIP provisions containing an impermissible director's discretion feature and has also taken actions to remove existing SIP provisions that it had previously approved in error.<sup>300</sup> In recent years, the EPA has also recommended that if an air agency elects to have SIP provisions that contain a director's discretion feature, then to be consistent with CAA

<sup>299</sup> *See, e.g.*, EPA's implementing regulations at 40 CFR 51.104(d) ("In order for a variance to be considered for approval as a revision to the [SIP], the State must submit it in accordance with the requirements of this section") and 51.105 ("Revisions of a plan, or any portion thereof, will not be considered part of an applicable plan until such revisions have been approved by the Administrator in accordance with this part.").

<sup>300</sup> *See, e.g.*, "Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Colorado; Revisions to Regulation 1," 76 FR 4540 (January 26, 2011) (partial disapproval of SIP submission based on inclusion of impermissible director's discretion provisions); "Correction of Implementation Plans; American Samoa, Arizona, California, Hawaii, and Nevada State Implementation Plans; Notice of proposed rulemaking," 61 FR 38664 (July 25, 1996) (proposed SIP correction to remove, pursuant to CAA section 110(k)(6), several variance provisions from American Samoa, Arizona, California, Hawaii, and Nevada SIPs), finalized at 62 FR 34641 (June 27, 1997); "Approval and Promulgation of Implementation Plans; Corrections to the Arizona and Nevada State Implementation Plans; Direct final rule," 74 FR 57051 (November 3, 2009) (rulemaking to remove, pursuant to CAA section 110(k)(6), variance provisions from Arizona and Nevada SIPs).

requirements the provisions must be structured so that any resulting variances or other deviations from the emission limitation or other SIP requirements have no federal law validity, unless and until the EPA specifically approves that exercise of the director's discretion as a SIP revision. Barring such a later ratification by the EPA through a SIP revision, the exercise of director's discretion is only valid for state (or tribal) law purposes and would have no bearing in the event of an action to enforce the provision of the SIP as it was originally approved by the EPA.

The EPA's evaluation of the specific SIP provisions of this type identified in the Petition indicates that none of them provides sufficient process or sufficient bounds on the exercise of director's discretion to be permissible. Most on their face would allow potentially limitless exemptions from SIP requirements with potentially dramatic adverse impacts inconsistent with the objectives of the CAA. More importantly, however, each of the identified SIP provisions goes far beyond the limits of what might theoretically be a permissible director's discretion provision, by authorizing state personnel to create case-by-case exemptions from the applicable emission limitations or other requirements of the SIP for excess emissions during SSM events. Given that the EPA interprets the CAA not to allow exemptions from SIP emission limitations for excess emissions during SSM events in the first instance, it follows that providing such exemptions through the *ad hoc* mechanism of a director's discretion provision is also not permissible and compounds the problem.

As with automatic exemptions for excess emissions during SSM events, a provision that allows discretionary exemptions would not meet the statutory requirements of CAA sections 110(a)(2)(A) and 110(a)(2)(C) that require SIPs to contain "emission limitations" to meet CAA requirements. Pursuant to CAA section 302(k), those emission limitations must be "continuous." Discretionary exemptions from otherwise applicable emission limitations render those limits less than continuous, as is required by CAA sections 110(a)(2)(A) and 110(a)(2)(C), and thereby inconsistent with a fundamental requirement of the CAA and thus substantially inadequate as contemplated in section CAA 110(k)(5). Such exemptions undermine the objectives of the CAA such as protection of the NAAQS and PSD increments, and they fail to meet other fundamental requirements of the CAA.

In addition, discretionary exemptions undermine effective enforcement of the SIP by the EPA or through a citizen suit, because often there may have been little or no public process concerning the exercise of director's discretion to grant the exemptions, or easily accessible documentation of those exemptions, and thus even ascertaining the possible existence of such *ad hoc* exemptions will further burden parties who seek to evaluate whether a given source is in compliance or to pursue enforcement if it appears that the source is not. Where there is little or no public process concerning such *ad hoc* exemptions, or there is inadequate access to relevant documentation of those exemptions, enforcement by the EPA or through a citizen suit may be severely compromised. As explained in the 1999 SSM Guidance, the EPA does not interpret the CAA to allow SIP provisions that would allow the exercise of director's discretion concerning violations to bar enforcement by the EPA or through a citizen suit. The exercise of director's discretion to exempt conduct that would otherwise constitute a violation of the SIP would interfere with effective enforcement of the SIP. Such provisions are inconsistent with and undermine the enforcement structure of the CAA provided in CAA sections 113 and 304, which provide independent authority to the EPA and citizens to enforce SIP provisions, including emission limitations. Thus, SIP provisions that allow discretionary exemptions from applicable SIP emission limitations through the exercise of director's discretion are substantially inadequate to comply with CAA requirements as contemplated in CAA section 110(k)(5).

#### 4. Substantial Inadequacy of Improper Enforcement Discretion Provisions

The EPA believes that SIP provisions that pertain to enforcement discretion but could be construed to bar enforcement by the EPA or through a citizen suit if the air agency declines to enforce are substantially inadequate to meet CAA requirements. A typical SIP provision that includes an impermissible enforcement discretion provision specifies certain parameters for when air agency personnel should pursue enforcement action, but is worded in such a way that the air director's decision defines what constitutes a "violation" of the emission limitation for purposes of the SIP, *i.e.*, by defining what constitutes a violation, the air agency's own enforcement

discretion decisions are imposed on the EPA or citizens.<sup>301</sup>

The EPA's longstanding view is that SIP provisions cannot enable an air agency's decision concerning whether or not to pursue enforcement to bar the ability of the EPA or the public to enforce applicable requirements.<sup>302</sup> Such enforcement discretion provisions in a SIP would be inconsistent with the enforcement structure provided in the CAA. Specifically, the statute provides explicit independent enforcement authority to the EPA under CAA section 113 and to citizens under CAA section 304. Thus, the CAA contemplates that the EPA and citizens have authority to pursue enforcement for a violation even if the air agency elects not to do so. The EPA and citizens, and any court in which they seek to pursue an enforcement claim for violation of SIP requirements, must retain the authority to evaluate independently whether a source's violation of an emission limitation warrants enforcement action. Potential for enforcement by the EPA or through a citizen suit provides an important safeguard in the event that the air agency lacks resources or ability to enforce violations and provides additional deterrence. Accordingly, a SIP provision that operates at the air agency's election to eliminate the authority of the EPA or the public to pursue enforcement actions would undermine the enforcement structure of the CAA and would thus be substantially inadequate to meet fundamental requirements in CAA sections 113 and 304.

#### 5. Substantial Inadequacy of Affirmative Defense Provisions

The EPA believes that SIP provisions that provide an affirmative defense for excess emissions during SSM events are substantially inadequate to meet CAA requirements. A typical SIP provision that includes an impermissible affirmative defense operates to limit or eliminate the jurisdiction of federal courts to assess liability or to impose remedies in an enforcement proceeding for exceedances of SIP emission limitations. Some affirmative defense provisions apply broadly, whereas others are components of specific

emission limitations. Some provisions use the explicit term "affirmative defense," whereas others are structured as such provisions but do not use this specific terminology. All of these provisions, however, share the same legal deficiency in that they purport to alter the statutory jurisdiction of federal courts under section 113 and section 304 to determine liability and to impose remedies for violations of CAA requirements, including SIP emission limitations. Accordingly, an affirmative defense provision that operates to limit or to eliminate the jurisdiction of the federal courts would undermine the enforcement structure of the CAA and would thus be substantially inadequate to meet fundamental requirements in CAA sections 113 and 304. By undermining enforcement, such provisions also are inconsistent with fundamental CAA requirements such as attainment and maintenance of the NAAQS, protection of PSD increments and improvement of visibility.

#### B. SIP Call Process Under Section 110(k)(5)

Section 110(k)(5) of the CAA provides the EPA with authority to determine whether a SIP is substantially inadequate to attain or maintain the NAAQS or otherwise comply with any requirement of the CAA. Where the EPA makes such a determination, the EPA then has a duty to issue a SIP call.

In addition to providing general authority for a SIP call, CAA section 110(k)(5) sets forth the process and timing for such an action. First, the statute requires the EPA to notify the state of the final finding of substantial inadequacy. The EPA typically provides notice to states by a letter from the Assistant Administrator for the Office of Air and Radiation to the appropriate state officials in addition to publication of the final action in the **Federal Register**.

Second, the statute requires the EPA to establish "reasonable deadlines (not to exceed 18 months after the date of such notice)" for states to submit corrective SIP submissions to eliminate the inadequacy in response to the SIP call. The EPA proposes and takes comment on the schedule for the submission of corrective SIP revisions in order to ascertain the appropriate timeframe, depending on the nature of the SIP inadequacy.

Third, the statute requires that any finding of substantial inadequacy and notice to the state be made public. By undertaking a notice-and-comment rulemaking, the EPA assures that the air agencies, affected sources and members of the public all are adequately

<sup>301</sup> See, e.g., "Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision," 75 FR 70888 at 70892 (November 19, 2010). The SIP provision at issue provided that information concerning a malfunction "shall be used by the executive secretary in determining whether a violation has occurred and/or the need of further enforcement action." This SIP language appeared to give the state official exclusive authority to determine whether excess emissions constitute a violation.

<sup>302</sup> See 1999 SSM Guidance at 3.

informed and afforded the opportunity to participate in the process. Through the February 2013 proposal, the SNPR and this final notice, the EPA is providing a full evaluation of the issues raised by the Petition and has used this process as a means of giving clear and up-to-date guidance concerning SIP provisions relevant to the treatment of excess emissions during SSM events that is consistent with CAA requirements.

If the state fails to submit the corrective SIP revision by the deadline established in this final notice, CAA section 110(c) authorizes the EPA to “find[ ] that [the] State has failed to make a required submission.”<sup>303</sup> Once the EPA makes such a finding of failure to submit, CAA section 110(c)(1) requires the EPA to “promulgate a Federal implementation plan at any time within 2 years after the [finding] . . . unless the State corrects the deficiency, and [the EPA] approves the plan or plan revision, before [the EPA] promulgates such [FIP].” Thus, if the EPA finds that the air agency failed to submit a complete SIP revision that responds to this SIP call, or if the EPA disapproves such SIP revision, then the EPA will have an obligation under CAA section 110(c)(1) to promulgate a FIP no later than 2 years from the date of the finding or the disapproval, if the deficiency has not been corrected before that time.<sup>304</sup>

The finding of failure to submit a revision in response to a SIP call or the EPA’s disapproval of that corrective SIP revision can also trigger sanctions under CAA section 179. If a state fails to submit a complete SIP revision that responds to a SIP call, CAA section 179(a) provides for the EPA to issue a finding of state failure. Such a finding starts mandatory 18-month and 24-month sanctions clocks. The two sanctions that apply under CAA section 179(b) are the 2-to-1 emission offset requirement for all new and modified major sources subject to the nonattainment NSR program and restrictions on highway funding. However, section 179 leaves it to the EPA to decide the order in which these sanctions apply. The EPA issued an order of sanctions rule in 1994 but did not specify the order of sanctions where a state fails to submit or submits a deficient SIP revision in response to a SIP call.<sup>305</sup> In the February 2013

proposal, as the EPA has done in other SIP calls, the EPA proposed that the 2-to-1 emission offset requirement will apply for all new sources subject to the nonattainment NSR program beginning 18 months following such finding or disapproval unless the state corrects the deficiency before that date. The EPA proposed that the highway funding restrictions sanction will also apply beginning 24 months following such finding or disapproval unless the state corrects the deficiency before that date. Finally, the EPA proposed that the provisions in 40 CFR 52.31 regarding staying the sanctions clock and deferring the imposition of sanctions would also apply. In this action, the EPA is finalizing the order of sanctions as proposed in the February 2013 proposal and finalizing its decision concerning the application of 40 CFR 52.31.

Mandatory sanctions under CAA section 179 generally apply only in nonattainment areas. By its definition, the emission offset sanction applies only in areas required to have a part D NSR program, *i.e.*, areas designated nonattainment. Section 179(b)(1) expressly limits the highway funding restriction to nonattainment areas. Additionally, the EPA interprets the section 179 sanctions to apply only in the area or areas of the state that are subject to or required to have in place the deficient SIP and for the pollutant or pollutants that the specific SIP element addresses. For example, if the deficient provision applies statewide and applies for all NAAQS pollutants, then the mandatory sanctions would apply in all areas designated nonattainment for any NAAQS within the state. In this case, the EPA will evaluate the geographic scope of potential sanctions at the time it makes a determination that the air agency has failed to make a complete SIP submission in response to this SIP call, or at the time it disapproves such a SIP submission. The appropriate geographic scope for sanctions may vary depending upon the SIP provisions at issue.

#### *C. SIP Call Timing Under Section 110(k)(5)*

When the EPA finalizes a finding of substantial inadequacy and a SIP call for any state, CAA section 110(k)(5) requires the EPA to establish a SIP submission deadline by which the state must make a SIP submission to rectify the identified deficiency. Pursuant to CAA section 110(k)(5), the EPA has authority to set a SIP submission

deadline that is up to 18 months from the date of the final finding of inadequacy.

The EPA proposed to establish a date 18 months from the date of promulgation of the final finding for the state to respond to the SIP call. After further evaluation of this issue and consideration of comments on the proposed SIP call, the EPA has decided to finalize the proposed schedule. Thus, the SIP submission deadline for each of the states subject to this SIP call will be November 22, 2016. Thereafter, the EPA will review the adequacy of that new SIP submission in accordance with the CAA requirements of sections 110(a), 110(k), 110(l) and 193, including the EPA’s interpretation of the CAA reflected in the SSM Policy as clarified and updated through this rulemaking.

The EPA is providing the maximum time permissible under the CAA for a state to respond to a SIP call. The EPA believes that it is appropriate to provide states with the full 18 months authorized under CAA section 110(k)(5) in order to allow states sufficient time to make SIP revisions following their own SIP development process. During this time, the EPA recognizes, an affected state will need to revise its state regulations, provide for public input, process the SIP revision through the state’s own procedures and submit the SIP revision to the EPA. Such a schedule will allow for the necessary SIP development process to correct the deficiencies, yet still achieve the necessary SIP improvements as expeditiously as practicable. There may be exceptions, particularly in states that have adopted especially time-consuming procedures for adoption and submission of SIP revisions. The EPA acknowledges that the longstanding existence of many of the provisions at issue, such as automatic exemptions for SSM events, may have resulted in undue reliance on them as a compliance mechanism by some sources. As a result, development of appropriate SIP revisions may entail reexamination of the applicable emission limitations themselves, and this process may require the maximum time allowed by the CAA. For example, if circumstances do not allow the state to develop alternative emission limitations within that time, the state may find it necessary to remove the automatic exemptions in an initial responsive SIP revision and establish alternative emission limitations in a later SIP revision. Nevertheless, the EPA encourages the affected states to make the necessary revisions in as timely a fashion as possible and encourages the states to work with the respective EPA Regional

<sup>303</sup> CAA section 110(c)(1)(A).

<sup>304</sup> The 2-year deadline does not necessarily apply to FIPs following disapproval of a tribal implementation plan.

<sup>305</sup> See “Selection of Sequence of Mandatory Sanctions for Findings Made Pursuant to Section

179 of the Clean Air Act,” 59 FR 39832 (August 4, 1994), codified at 40 CFR 52.31.

Office as they develop the SIP revisions. The EPA intends to review and act upon the SIP submissions as promptly as resources will allow, in order to correct these deficiencies in as timely a manner as possible. Recent experience with several states that elected to correct the deficiencies identified in the February 2013 proposal in advance of this final action suggests that these SIP revisions can be addressed efficiently through cooperation between the air agencies and the EPA.

The EPA notes that the SIP call for affected states finalized in this action is narrow and applies only to the specific SIP provisions determined to be inconsistent with the requirements of the CAA. To the extent that a state is concerned that elimination of a particular aspect of an existing emission limitation, such as an impermissible exemption, will render that emission limitation more stringent than the state originally intended and more stringent than needed to meet the CAA requirements it was intended to address, the EPA anticipates that the state will revise the emission limitation accordingly, but without the impermissible exemption or other feature that necessitated the SIP call. With adequate justification, this SIP revision might, *e.g.*, replace a numerical emission limitation with an alternative control method (design, equipment, work practice or operational standard) as a component of the emission limitation applicable during startup and/or shutdown periods.

The EPA emphasizes that its authority under CAA section 110(k)(5) does not extend to requiring a state to adopt a particular control measure in its SIP revision in response to the SIP call. Under principles of cooperative federalism, the CAA vests air agencies with substantial discretion in how to develop SIP provisions, so long as the provisions meet the legal requirements and objectives of the CAA.<sup>306</sup> Thus, the inclusion of a SIP call to a state in this action should not be misconstrued as a directive to the state to adopt a particular control measure. The EPA is merely requiring that affected states make SIP revisions to remove or revise existing SIP provisions that fail to comply with fundamental requirements of the CAA. The states retain discretion to remove or revise those provisions as they determine best, so long as they bring their SIPs into compliance with

the requirements of the CAA.<sup>307</sup> Through this rulemaking action, the EPA is reiterating, clarifying and updating its interpretations of the CAA with respect to SIP provisions that apply to emissions from sources during SSM events in order to provide states with comprehensive guidance concerning such provisions.

Finally, the EPA notes that under section 553 of the Administrative Procedure Act, 5 U.S.C. 553(d), an agency rule should not be “effective” less than 30 days after its publication, unless certain exceptions apply including an exception for “good cause.” In this action, the EPA is simultaneously taking final action on the Petition, issuing its revised SSM Policy guidance to states for SIP provisions applicable to emissions during SSM events and issuing a SIP call to 36 states for specific existing SIP provisions that it has determined to be substantially inadequate to meet CAA requirements. Section 110(k)(5) provides that the EPA must notify states affected by a SIP call and must establish a deadline for SIP submissions by affected states in response to a SIP call not to exceed 18 months after the date of such notification. The EPA is notifying affected states of this final SIP call action on May 22, 2015. Thus, regardless of the effective date of this action, the deadline for submission of SIP revisions to address the specific SIP provisions that the EPA has identified as substantially inadequate will be November 22, 2016. In addition, the EPA concludes that there is good cause for this final action to be effective on May 22, 2015, the day upon which the EPA provided notice to the states, because any delayed effective date would be unnecessary given that CAA section 110(k)(5) explicitly provides that the deadline for submission of the required SIP revisions runs from the date of notification to the affected states, not from some other date, and shall not exceed 18 months.

#### *D. Response to Comments Concerning SIP Call Authority, Process and Timing*

The EPA received a wide range of comments on the February 2013 proposal and the SNPR questioning the scope of the Agency’s authority to issue this SIP call action under section

110(k)(5), the process followed by EPA for this SIP call action, or the timing that the EPA provided for response to this SIP call action. Although there were numerous comments on these general topics, the majority of the comments raised the same questions and made similar arguments (*e.g.*, that the EPA has an obligation under section 110(k)(5) to “prove” not only that an exemption for SSM events in a SIP emission limitation is contrary to the explicit legal requirements of the CAA but also that this illegal exemption “caused” a specific violation of the NAAQS at a particular monitor on a particular day). For clarity and ease of discussion, the EPA is responding to these overarching comments, grouped by topic, in this section of this document.

1. Comments that section 110(k)(5) requires the EPA to “prove causation” to have authority to issue a SIP call.

*Comment:* Numerous state and industry commenters argued that the EPA has no authority to issue a SIP call with respect to a given SIP provision unless and until the Agency first proves definitively that the provision has caused a specific harm, such as a specific violation of the NAAQS in a specific area. These commenters generally focused upon the “attainment and maintenance” clause of section 110(k)(5) and did not address the “comply with any requirement of” the CAA clause.

For example, many industry commenters opposed the EPA’s interpretation of section 110(k)(5) on the grounds that the Agency had failed to provide a specific technical analysis “proving” how the SIP provisions failed to provide for attainment or maintenance of the NAAQS. For areas attaining the NAAQS, commenters asserted that there should be a presumption that existing SIP provisions are adequate if they have resulted in attainment of the NAAQS. For areas violating the NAAQS, commenters claimed that the EPA is required to conduct a technical analysis to determine if there is a “nexus between the provisions that are the subject of its SSM SIP Call Proposal and the specific pollutants for which attainment has not been achieved.” Other industry commenters argued that in order to have authority to issue a SIP call, the EPA must prove through a technical analysis that a given SIP provision “is” substantially inadequate, not that it “may be.” These commenters claimed that the EPA has not shown how any of the SIP provisions at issue in this action “threatens the NAAQS, fails to sufficiently mitigate interstate transport, or comply with any other

<sup>306</sup> See *Virginia v. EPA*, 108 F.3d 1397 (D.C. Cir. 1997) (SIP call remanded and vacated because, *inter alia*, the EPA had issued a SIP call that required states to adopt a particular control measure for mobile sources).

<sup>307</sup> Notwithstanding the latitude states have in developing SIP provisions, the EPA is required to assure that states meet the basic legal criteria for SIPs. See *Michigan v. EPA*, 213 F.3d 663, 686 (D.C. Cir. 2000) (upholding NO<sub>x</sub> SIP call because, *inter alia*, the EPA was requiring states to meet basic legal requirement that SIPs comply with section 110(a)(2)(D), not dictating the adoption of a particular control measure).

CAA requirement.” Many industry commenters questioned whether exempt emissions during SSM events pose any attainment-related concerns, making assertions such as: “[i]nfrequent malfunction, startup and shutdown events at a limited number of stationary sources are likely to have no effect on attainment.”

Many state commenters made similar arguments, based on the specific attainment or nonattainment status of areas in their respective states. For example, one state commenter claimed that the EPA failed to make required technical findings that the specific provisions the Agency identified as legally deficient “are so substantially inadequate that the State cannot attain or maintain the NAAQS or otherwise comply with the CAA.” The commenter claimed that the EPA should have evaluated all of the state’s emission limitations, emission inventories and attainment and maintenance demonstrations for the NAAQS, rather than focusing on these individual SIP provisions. In order to demonstrate substantial inadequacy under section 110(k)(5), the state claimed, the EPA “must point to facts” that show “the State cannot attain or maintain the NAAQS or comply with the CAA” if the provisions remain in the SIP. Other states made comparable arguments with respect to the SIP provisions at issue in their SIPs and claimed that the EPA is required to establish how the provisions caused or contributed to a specific violation of a NAAQS in those states.

By contrast, many environmental group commenters and individual commenters took the opposite position concerning what is necessary to support a finding of substantial inadequacy under section 110(k)(5). These commenters argued that the EPA may issue a SIP call not only where it determines that a SIP is substantially inadequate to attain or maintain a NAAQS with a technical analysis but also where the Agency determines that the SIP is substantially inadequate “to comply with any requirement of the Act.” The commenters noted that the EPA identified specific statutory provisions of the CAA with which the SIP provisions at issue in this action do not comply. For example, these commenters agreed with the EPA’s view that SIP provisions with automatic or discretionary exemptions for emissions during SSM events do not meet the fundamental requirements that SIP emission limitations must apply to limit emissions from sources on a continuous basis, in accordance with sections 110(a)(2)(A), 110(a)(2)(C) and 302(k). In addition to arguing that failure to meet

legal requirements of the CAA is a sufficient basis for a SIP call, some commenters provided additional support to illustrate how SIP provisions with deficiencies such as automatic or discretionary exemptions for emissions during SSM events result in large amounts of excess emissions that would otherwise be violations of the applicable emission limitations.

*Response:* The EPA disagrees with the argument that it has no authority to issue a SIP call under section 110(k)(5) unless the Agency provides a factual or technical analysis to demonstrate that the SIP provision at issue caused a specific environmental harm or undermined a specific enforcement case. As explained in the February 2013 proposal, in the SNPR and in this final action, the EPA interprets its authority under section 110(k)(5) to authorize a SIP call for not only provisions that are substantially inadequate for purposes of attainment or maintenance of the NAAQS but also those provisions that are substantially inadequate for purposes of “any requirement” of the CAA.<sup>308</sup> To be clear, the EPA can also issue a SIP call whenever it determines that a SIP as a whole, or a specific SIP provision, is deficient because the SIP did not prevent specific violations of a NAAQS, at a specific monitor, on a specific date. However, that is not the extent of the EPA’s authority under section 110(k)(5).

On its face, section 110(k)(5) does not impose any explicit requirements with respect to what specific form of factual or analytical basis is necessary for issuance of a SIP call. Because the statute does not prescribe the basis on which the EPA is to make a finding of substantial inadequacy, the Agency interprets section 110(k)(5) to provide discretion concerning what is necessary to support such a finding. The Agency believes that the nature of the factual or analytical basis necessary to make a finding is dependent upon the specific nature of the substantial inadequacy in a given SIP provision.

For example, when the EPA issued the NO<sub>x</sub> SIP Call to multiple states because their SIPs failed to address interstate transport adequately in accordance with section 110(a)(2)(D)(i)(I), the Agency did base that SIP call on a detailed factual analysis including ambient air impacts.<sup>309</sup> In that situation, the specific

requirement of the CAA at issue was the statutory obligation of each state to have a SIP that contains adequate provisions to prohibit emissions from sources “in amounts” that “contribute significantly to nonattainment in, or interfere with maintenance by, any other State” with respect to the NAAQS. Because of the phrase “in amounts,” the EPA considered it appropriate to evaluate whether each state’s SIP was substantially inadequate to comply with section 110(a)(2)(D)(i)(I) through a detailed analysis of the emissions from the state and their impacts on other states. Moreover, given the use of ambiguous terms in section 110(a)(2)(D)(i)(I) such as “contribute significantly,” the EPA concluded that it was appropriate to conduct a detailed analysis to quantify the amount of emissions that each of the affected states needed to eliminate in order to comply with section 110(a)(2)(D)(i)(I) for the specific NAAQS in question. However, the EPA’s decision to determine these facts and to conduct these analyses as a basis for that particular SIP call action was due to the nature of the SIP deficiency at issue and the wording of section 110(a)(2)(D)(i)(I). The EPA has similarly issued other SIP calls for which the Agency determined that a specific factual or technical analysis was appropriate to support the finding of substantial inadequacy.<sup>310</sup>

Not all situations, however, require the same type of detailed factual analysis to support the finding of substantial inadequacy. For example, when the EPA issued the PSD GHG SIP call to 13 states for failure to have a PSD permitting program that properly addresses GHG emissions, the Agency did not need to base that SIP call action on a detailed factual analysis of ambient air impacts.<sup>311</sup> In that situation, the statutory requirement of the CAA in question was the obligation of each state SIP under section 110(a)(2)(C) to

Reducing Regional Transport of Ozone,” 63 FR 57356 (October 27, 1998).

<sup>310</sup> See, e.g., “Finding of Substantial Inadequacy of Implementation Plan; Call for Iowa State Implementation Plan Revision,” 76 FR 41424 (July 14, 2011) (SIP call to Iowa due to PM<sub>2.5</sub> NAAQS violations in Muscatine area); “Approval and Promulgation of State Implementation Plans; Call for Sulfur Dioxide SIP Revisions for Billings/Laurel, MT [Montana],” 58 FR 41430 (August 4, 1993) (SIP call to Montana due to modeled violations of the SO<sub>2</sub> NAAQS).

<sup>311</sup> See “Action to Ensure Authority to Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions; Finding of Substantial Inadequacy and SIP Call,” 75 FR 77698 (December 13, 2010). The EPA notes that a number of petitioners challenged this SIP call on various grounds, but the court ultimately determined that they did not have standing. *Texas v. EPA*, 726 F.3d 180 (D.C. Cir. 2013).

<sup>308</sup> See February 2013 proposal, 78 FR 12459 at 12483–89 (February 22, 2013); SNPR, 79 FR 55919 at 55935.

<sup>309</sup> See “Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of

include a PSD permitting program that addresses all federally regulated air pollutants, including GHGs. In that action, the EPA made a finding that the SIPs of 13 states were substantially inadequate to “comply with any requirement” of the CAA because the PSD permitting programs in their EPA-approved SIPs did not apply to GHG emissions from new and modified sources. Accordingly, the EPA issued a SIP call to the 13 states because their SIPs failed to comply with specific legal requirements of the CAA. This failure to meet an explicit CAA legal requirement to address GHG emissions in permits for sources as required by statute did not require the EPA to provide a technical analysis of the specific environmental impacts that this substantial inadequacy would cause. For this type of SIP deficiency, it was sufficient for the EPA to make a factual finding that the affected states had SIPs that failed to meet this fundamental legal requirement.<sup>312</sup> The EPA has issued other SIP calls for which the Agency made a finding that a state’s failure to meet specific legal requirement of the CAA for SIPs was a substantial inadequacy without the need to provide a technical air quality analysis relating to NAAQS violations.<sup>313</sup>

The EPA believes that the most relevant precedent for what is necessary to support a finding of substantial inadequacy in this action is the SIP call that the Agency previously issued to the state of Utah for deficient SIP provisions related to the treatment of excess emissions during SSM events.<sup>314</sup> In that SIP call action, the EPA made a finding that two specific provisions in the state’s SIP were substantially inadequate because they were inconsistent with legal requirements of the CAA. For one of the provisions that included an exemption for emissions during “upsets” (i.e., malfunctions), the EPA explained:

Contrary to CAA section 302(k)’s definition of emission limitation, the exemption [in the provision] renders emission limitations in

the Utah SIP less than continuous and, contrary to the requirements of CAA sections 110(a)(2)(A) and (C), undermines the ability to ensure compliance with SIP emissions limitations relied on to achieve the NAAQS and other relevant CAA requirements at all times. Therefore, the [provision] renders the Utah SIP substantially inadequate to attain or maintain the NAAQS or to comply with other CAA requirements such as CAA sections 110(a)(2)(A) and (C) and 302(k), CAA provisions related to prevention of significant deterioration (PSD) and nonattainment NSR permits (sections 165 and 173), and provisions related to protection of visibility (section 169A).<sup>315</sup>

For a second provision, the EPA made a finding of substantial inadequacy because the provision interfered with the enforcement structure of the CAA. The EPA explained:

This provision appears to give the executive secretary exclusive authority to determine whether excess emissions constitute a violation and thus to preclude independent enforcement action by EPA and citizens when the executive secretary makes a non-violation determination. This is inconsistent with the enforcement structure under the CAA, which provides enforcement authority not only to the States, but also to EPA and citizens. . . . Because it undermines the envisioned enforcement structure, it also undermines the ability of the State to attain and maintain the NAAQS and to comply with other CAA requirements related to PSD, visibility, NSPS, and NESHAPS.<sup>316</sup>

In the Utah SIP call rulemaking, the EPA received similar adverse comments arguing that the Agency has no authority under section 110(k)(5) to issue a SIP call without a factual analysis that proves that the deficient SIP provisions caused a specific environmental harm, such as a NAAQS violation. Commenters in that rulemaking likewise argued that the EPA was required to prove a causal connection between the excess emissions that occurred during a specific exempt malfunction and a specific violation of the NAAQS. In response to those comments, the EPA explained:

[W]e need not show a direct causal link between any specific unavoidable breakdown excess emissions and violations of the NAAQS to conclude that the SIP is substantially inadequate. It is our interpretation that the fundamental integrity of the CAA’s SIP process and structure is undermined if emission limits relied on to

meet CAA requirements can be exceeded without potential recourse by any entity granted enforcement authority by the CAA. We are not restricted to issuing SIP calls only after a violation of the NAAQS has occurred or only where a specific violation can be linked to a specific excess emissions event.<sup>317</sup>

The EPA’s interpretation of section 110(k)(5) in the Utah action was directly challenged in *US Magnesium, LLC v. EPA*.<sup>318</sup> Among other claims, the petitioners argued that the EPA did not have authority for the SIP call because the Agency had not “set out facts showing that the [SIP provision] has prevented Utah from attaining or maintaining the NAAQS or otherwise complying with the CAA.” Thus, the same arguments raised by commenters in this action have previously been advanced and rejected by the EPA and the courts. The court expressly upheld the EPA’s interpretation of section 110(k)(5), concluding:

Certainly, a SIP could be deemed substantially inadequate because air-quality records showed that actions permitted under the SIP resulted in NAAQS violations, but the statute can likewise apply to a situation like this, where the EPA determines that a SIP is no longer consistent with the EPA’s understanding of the CAA. In such a case, the CAA permits the EPA to find that a SIP is substantially inadequate to comply with the CAA, which would allow the EPA to issue a SIP call under CAA section 110(k)(5).<sup>319</sup>

Finally, the EPA disagrees with the commenters on this specific point because it is not a logical construction of section 110(k)(5). The implication of the commenters’ argument is that if a given area is in attainment, then the question of whether the SIP provisions meet applicable legal requirements is irrelevant. If a given area is not in attainment, then the implication of the commenter’s argument is that the EPA must prove that the legally deficient SIP provision factually caused the violation of the NAAQS or else the legal deficiency is irrelevant. In the latter case, the logical extension of the commenter’s argument is that no matter how deficient a SIP provision is to meet applicable legal requirements, the EPA is foreclosed from directing the state to correct that deficiency unless and until there is proof of a specific environmental harm caused, or specific enforcement case thwarted, by that deficiency. Such a reading is inconsistent with both the letter and the intent of section 110(k)(5).

2. Comments that the EPA must make specific factual findings to meet the

<sup>312</sup> *Id.*, 75 FR 77698 at 77705–07.

<sup>313</sup> See, e.g., “Finding of Substantial Inadequacy of Implementation Plan; Call for California State Implementation Plan Revision,” 68 FR 37746 (June 25, 2003) (SIP call to California for failure to meet legal requirements of section 110(a)(2)(C), section 110(a)(2)(I), and section 110(a)(2)(E) because of exemptions for agricultural sources from NSR and PSD permitting requirements); “Credible Evidence Revisions,” 62 FR 8314 at 8327 (February 24, 1997) (discussing SIP calls requiring states to revise their SIPs to meet CAA requirements with respect to the use of any credible evidence in enforcement actions for SIP violations).

<sup>314</sup> See “Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revision; Proposed rule,” 76 FR 21639 (April 18, 2011).

<sup>315</sup> *Id.*, 76 FR 21639 at 21641. The EPA also found the first provision substantially inadequate because it operated to create an additional exemption for emissions during malfunctions that modified the existing emission limitations in some federal NSPS and NESHAP that the state had incorporated by reference into its SIP. The EPA’s 1999 SSM Guidance had indicated that state SIP provisions could not validly alter NSPS or NESHAP.

<sup>316</sup> *Id.*

<sup>317</sup> *Id.*, 76 FR 21639 at 21643.

<sup>318</sup> 690 F.3d 1157 (10th Cir. 2012).

<sup>319</sup> *Id.* 690 F.3d at 1168.



requirements of section 110(a)(2)(H)(ii) to have authority to issue a SIP call.

*Comment:* A number of commenters argued that even if section 110(k)(5) does not require the EPA to provide a technical analysis to support a finding of substantial inadequacy, section 110(a)(2)(H)(ii) does impose this obligation. The commenters noted that section 110(a)(2)(H)(ii) requires states to revise their SIPs “whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate.” The commenters claimed that this statutory language imposes a requirement for the EPA to “find” the SIP inadequate and “clearly indicates that a SIP Call must be justified by factual findings supported by record evidence.”

One commenter argued that the use of the word “finds” should be read in light of the dictionary definition of “find”—“to discover by study or experiment.” The commenter noted that courts commonly hold that agencies must draw a link between the facts and a challenged agency decision. To support this basic principle of administrative law, the commenter cited a litany of cases including: *Motor Vehicle Mfrs Ass’n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983); *Appalachian Power Co. v. EPA*, 251 F.3d 1026, 1034 (D.C. Cir. 2001); *Tex. Tin Corp. v. EPA*, 992 F.2d 353, 356 (D.C. Cir. 1993); *Nat’l Gypsum v. EPA*, 968 F.2d 40, 43–44 (D.C. Cir. 1992); *Michigan v. EPA*, 213 F.3d 663, 681 (D.C. Cir. 2000). Thus, the commenter suggested that the statutory language of section 110(a)(2)(H)(ii) requires a specific factual or technical demonstration concerning the ambient air impacts of an inadequate SIP provision, even if the language of section 110(k)(5) does not.

Another commenter argued that the phrase “on the basis of information available to the Administrator” in section 110(a)(2)(H)(ii) means that the EPA must not only consider the specific terms of the SIP provisions relative to the legal requirements of the statute but must also consider other information that is “available,” including how the provisions have been affecting air quality or enforcement since approval. In support of this proposition, the commenter cited 1970 legislative history for section 110(a)(2)(H):

Whenever the Secretary or his representative finds from new information developed after the plan is approved that the plan is not or will not be adequate to achieve promulgated ambient air quality standards he must notify the appropriate States and give

them an opportunity to respond to the new information.<sup>320</sup>

Thus, the commenter concluded that the EPA must not only find that the SIP is facially inconsistent with the legal requirements of the CAA but also find it “substantially inadequate” to achieve the goals of the requirements as a factual matter before issuing a SIP call. The implication of the commenter’s argument is that section 110(a)(2)(H)(ii) imposes additional limitations upon the EPA’s authority to issue a SIP call.

*Response:* The EPA disagrees that it has not made the findings necessary to support the present SIP call action. The thrust of the commenters’ argument is that the facts that the EPA “finds” or the “information” upon which the EPA bases such a finding can *only* be technical or scientific facts proving that a given SIP provision resulted in emissions that caused a specific violation of the NAAQS. As with section 110(k)(5), however, nothing in section 110(a)(2)(H)(ii) compels such a narrow reading. The plain language of section 110(a)(2)(H)(ii) does not support the commenters’ arguments. To the extent that section 110(a)(2)(H)(ii) is ambiguous, however, the EPA does not interpret it to require the types of technical findings claimed by the commenters in the case of SIP provisions that do not meet legal requirements of the CAA. To the contrary, the EPA interprets the statutory language to leave to the Agency’s discretion what facts or information are necessary to find that a given SIP provision is substantially inadequate. In short, the EPA’s “finding” may be a finding that a SIP provision does not meet applicable legal requirements without definitive proof that this legal deficiency caused a specific outcome, such as a specific impact on the NAAQS or a specific enforcement action.

First, section 110(a)(2)(H)(ii) does not on its face directly address the scope of the EPA’s authority, unlike section 110(k)(5). Section 110(a)(2)(H)(ii) appears in section 110(a)(2), which contains a listing of specific structural or program requirements that each state’s SIP must include. In the case of section 110(a)(2)(H)(ii), the CAA requires each state to have provisions in its SIP that “provide for revision of such plan” in the event that the EPA issues a SIP call. Given that section 110(k)(5) is the provision that directly addresses the EPA’s authority to issue a SIP call, section 110(a)(2)(H)(ii) should not be interpreted in a way that contradicts or curtails the broad authority provided in

section 110(k)(5). The EPA does not interpret section 110(k)(5) to require proof that a given SIP provision caused a specific environmental harm or undermined a specific enforcement action in order to find the provision substantially inadequate. If the provision fails to meet fundamental legal requirements of the CAA for SIP provisions, that alone is sufficient.

Second, even if read in isolation, section 110(a)(2)(H)(ii) does not specify what type of finding the EPA is required to make or specify the way in which the Agency should make such a finding. The EPA agrees that this section of the CAA describes findings that the EPA makes “on the basis of information available to the Administrator that the plan is substantially inadequate to attain” the NAAQS. This section does not, however, expressly state that the “information” in question must be a particular form of information, nor does it expressly require any specified form of technical analysis such as modeling that demonstrates that a particular SIP deficiency caused a violation of the NAAQS. Because the term “information” is not limited in this way, the EPA interprets it to mean whatever form of information is relevant to the finding in question. For certain types of deficiencies, the EPA may determine that such a technical analysis is appropriate, but that does not mean that it is required as a basis for all findings of substantial inadequacy.<sup>321</sup>

Third, section 110(a)(2)(H)(ii), like section 110(k)(5), is not limited to findings related exclusively to attainment of the NAAQS. Section 110(a)(2)(H)(ii) also expressly refers to findings by the EPA that a SIP is substantially inadequate “to otherwise comply with any additional requirements established under” the CAA. The EPA interprets this explicit reference to “any additional requirements” to include any legal requirements applicable to SIP provisions, such as the requirement that emission limitations must apply continuously. The commenters misconstrue section 110(a)(2)(H)(ii) to

<sup>321</sup> See, e.g., “Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone; Final rule,” 63 FR 57355 (October 27, 1998) (EPA found that the SIPs of multiple states did not adequately control emissions that resulted in significant contribution to nonattainment in other states); “Action To Ensure Authority To Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Substantial Inadequacy and SIP Call; Final rule,” 75 FR 77697 (December 13, 2010) (EPA found that the SIPs of multiple states did not meet the legal requirements for PSD permitting for GHG emissions).

<sup>320</sup> See S. Rep. No. 91–1196 at 55–56 (1970).

refer exclusively to provisions that are literally found to cause a specific violation of the NAAQS. The EPA acknowledges that the legislative history quoted by the commenters discusses findings related to a failure of a SIP to attain the NAAQS, but the passage quoted does not explain the meaning of “new information” any more specifically than the statute, nor does the passage explain why the actual statutory text of section 110(a)(2)(H)(ii) now refers to findings related to failures to meet “any additional requirements” of the CAA.<sup>322</sup> Moreover, the commenters did not address the changes to the CAA in 1977 that added to the statutory language to refer to other requirements, nor did they address the changes to the CAA in 1990 that added section 110(k)(5), which refers to all other requirements of the CAA. The EPA believes that the more recent changes to the statute in fact support its view that section 110(a)(2)(H)(ii) entails compliance with the legal requirements of the CAA, not the narrow reading advocated by the commenters.

Fourth, the EPA disagrees with the commenters’ arguments that it did not make factual “findings” to support this SIP call. To the contrary, the EPA has made numerous factual determinations with regard to the specific SIP provisions at issue. For example, for those SIP provisions that include automatic exemptions for emissions during SSM events, the EPA has found that the provisions are inconsistent with the definition of “emission limitation” in section 302(k) and that SIP provisions that allow sources to exceed otherwise applicable emission limitations during SSM events may interfere with attainment and maintenance of the NAAQS. The EPA has also made the factual determination that other SIP provisions that authorize director’s discretion exemptions during SSM events are inconsistent with the statutory provisions applicable to the approval and revision of SIP provisions. The EPA has found that overbroad enforcement discretion provisions are inconsistent with the enforcement structure of the CAA in that they could be interpreted to allow the state to make the final decision whether such emissions are violations, thus impeding the ability of the EPA and citizens to enforce the emission limitations of the

SIP. Similarly, the EPA has found, consistent with the court’s decision in *NRDC v. EPA*, that affirmative defenses in SIP provisions are inconsistent with CAA requirements because they operate to alter or eliminate the jurisdiction of the courts to determine liability and impose penalties. In short, the EPA has made the factual findings that specific provisions are substantially inadequate to meet requirements of the CAA, as contemplated in both section 110(a)(2)(H)(ii) and section 110(k)(5).

Finally, the EPA notes that the cases cited by the commenters to support their contentions concerning the factual basis for agency decisions are not relevant to the specific question at hand. The correct question is whether section 110(a)(2)(H)(ii) requires the type of factual or technical analysis that they claim. None of the cases they cited address this specific issue. By contrast, the decision of the Tenth Circuit in *US Magnesium, LLC v. EPA* is much more relevant. In that decision, the court concluded that the EPA’s authority under section 110(k)(5) is not restricted to situations where a deficient SIP provision caused a specific violation of the NAAQS and the exercise of that authority does not require specific factual findings that the provision caused such impacts.<sup>323</sup>

3. Comments that the EPA lacks authority to issue a SIP call because it is interpreting the term “substantial inadequacy” incorrectly.

*Comment:* Some commenters claimed that although the term “substantially inadequate” is not defined in the statute, the EPA made no effort to interpret the term. Citing *Qwest Corp. v. FCC*, 258 F.3d 1191, 1201–02 (10th Cir. 2001), the commenters argued that the EPA is not entitled to any deference to its interpretation of the term “substantial inadequacy.”

Other commenters acknowledged that the EPA took the position that the term “substantially inadequate” is not defined in the CAA and that the Agency can establish an interpretation of that provision under *Chevron* step 2. However, these commenters disagreed that the EPA’s interpretation of the term in the February 2013 proposal was reasonable. In particular, the commenters disagreed with the EPA’s view that once a SIP provision is found to be “facially inconsistent” with a specific legal requirement of the CAA, nothing more is required to find the provision “substantially inadequate” to “comply with” that requirement. Commenters claimed that the EPA’s interpretation conflicts with the statute

because it ignores the statutory requirement that a SIP call be based on inadequacies that are “substantial” and that the interpretation does not meet the “high bar” Congress established before states could be required to undertake the difficult task of revising a SIP.

State commenters claimed that the requirement that the EPA must determine that the SIP is “substantially” inadequate establishes a heavy burden for the EPA. The commenters relied on a dictionary definition of “substantially” as meaning “considerable in importance, value, degree, amount, or extent.” The commenters argued that when modifying the word “inadequate,” the use of the modifier “substantially” in section 110(k)(5) enhances the degree of proof required. Thus, the commenters argued that the EPA cannot just assume that the provisions may prevent attainment of the NAAQS.

Other industry commenters disagreed that the term “substantially inadequate” is ambiguous but claimed that even if it were, the EPA’s own interpretation is vague and ambiguous. The commenters asserted that the EPA’s statement that it must evaluate the adequacy of specific SIP provision “in light of the specific purposes for which the SIP provision at issue is required” and with respect to whether the provision meets “fundamental legal requirements applicable to such a provision” is not a reasonable interpretation of the statutory language. Furthermore, the commenters argued, the EPA’s interpretation of section 110(k)(5) to authorize a SIP call in the absence of any causal evidence that the SIP provision at issue causes a particular environmental impact reads out of the statute “the explicit requirement that a SIP call related to NAAQS be made only where the state plan is substantially inadequate to attain or maintain the relevant standard.”

*Response:* The EPA disagrees with commenters who claimed that the Agency did not explain its interpretation of section 110(k)(5) in general, or the term “substantially inadequate” in particular, in the February 2013 proposal. To the contrary, the EPA provided an explanation of why it considers section 110(k)(5) to be ambiguous and provided a detailed explanation of how the Agency is interpreting and applying that statutory language to the specific SIP provisions at issue in this action.<sup>324</sup> Moreover, the EPA explained why it believes that the four major types of

<sup>322</sup> The EPA notes that the significance of this 1970 legislative history was raised in *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1166 (10th Cir. 2012). That court found the legislative history “inapposite” simply because it did not pertain to section 110(k)(5) which Congress added to the CAA in 1990. This legislative history passage is of limited significance in this action as well.

<sup>323</sup> *Id.*, 690 F.3d 1157, 1166.

<sup>324</sup> See February 2013 proposal, 78 FR 12459 at 12483–88.

provisions at issue are inconsistent with applicable legal requirements of the CAA and thus substantially inadequate. In the SNPR, the EPA reiterated its interpretation of section 110(k)(5) with respect to affirmative defense provisions in SIPs but updated that interpretation in response to the logic of the more recent court decision in *NRDC v. EPA*. Thus, the commenters' reliance on the *Qwest* decision is not appropriate, because the EPA did explain its interpretation of the statute and it is not one that is contrary to the statute. A more appropriate precedent is the decision in *US Magnesium, LLC v. EPA*, in which the same court upheld the EPA's interpretation of its authority under section 110(k)(5). In short, the EPA believes that section 110(k)(5) provides the EPA with discretion to determine what constitutes a substantial inadequacy and to determine the appropriate basis for such a finding in light of the relevant CAA requirements at issue. Thus, the commenters are in error that the EPA did not articulate its interpretation of section 110(k)(5).

The EPA also disagrees with those commenters who argued that the Agency has ignored or misinterpreted the term "substantial" in this action. As many commenters acknowledged, this term is not defined in the statute. Their reliance on a dictionary definition, however, is based on the incorrect premise that a failure to comply with the legal requirements of the CAA for SIP provisions is not "considerable in importance, value, degree, amount, or extent."

First, the commenters' argument ignores the full statutory language of section 110(k)(5) in which the EPA is authorized to issue a SIP call whenever it determines that a given SIP provision is inadequate, not only because of impacts on attainment of the NAAQS but also upon a failure to meet "any other requirement" of the CAA. As explained in the February 2013 proposal and in the SNPR, the EPA interprets its authority under section 110(k)(5) to encompass any type of deficiency, including failure to meet specific legal requirements of the CAA for SIP provisions. Failure to comply with these legal requirements can have the effect of interfering with attainment and maintenance of the NAAQS (e.g., by allowing unlimited emissions from sources during SSM events), but the failure to comply with the legal requirements is in and of itself a basis for a SIP call.

Second, the commenters' argument implies that failure of a SIP provision to meet a legal requirement of the CAA is not a "substantial" inadequacy. The

EPA strongly disagrees with the view that complying with applicable legal requirements is not an important consideration in general, and not important with respect to the specific legal defects at issue here. For example, the EPA considers a SIP provision that does not apply continuously because it contains SSM exemptions to be substantially inadequate because it fails to meet legal requirements of sections 110(a)(2)(A), 110(a)(2)(C) and 302(k). In particular, failure to meet the legal requirements for an emission limitation as contemplated in section 302(k) is a "substantial" inadequacy. The EPA is not alone in this view; the D.C. Circuit in the *Sierra Club v. Johnson* case held that emission limitations must be continuous and cannot contain SSM exemptions. If inclusion of SSM exemptions in emission limitations were not a "substantial" deficiency from the court's perspective, presumably the court would have ruled differently. As another example, the EPA considers the inclusion of affirmative defenses in SIP provisions that operate to alter the jurisdiction of the courts to be a substantial inadequacy. Again, the EPA's view that SIP provisions cannot interfere with the enforcement structure of the CAA set forth in section 113 and section 304 is not unreasonable. The court's decision in *NRDC v. EPA* held that EPA regulations cannot alter or eliminate the jurisdiction of courts to determine liability and impose remedies in judicial enforcement cases and this same logic extends to the states in SIP provisions. Contrary to the arguments of the commenters, the EPA reasonably interprets the term "substantial" in section 110(k)(5) to include compliance with the legal requirements of the CAA applicable to SIP provisions.

Third, the EPA notes that its reading of section 110(k)(5) does not "read out of the statute" the statutory language that SIP provisions can be substantially inadequate "to attain or maintain the relevant NAAQS" as claimed by the commenters. The EPA agrees that SIP provisions can be found substantially inadequate for this specific reason, but it is the commenters who read words out of section 110(k)(5) by disregarding the portion of the statute that also authorizes a SIP call whenever a SIP provision does not "comply with any requirement of" the CAA. Indeed, the EPA believes that SIP provisions that fail to meet the specific legal requirements of the CAA are very likely to have these impacts as well; e.g., the unlimited emissions authorized by SSM exemptions can interfere with attainment and maintenance of the

NAAQS. The EPA believes that Congress consciously included these fundamental legal requirements in order to assure that SIP provisions will achieve the objectives of the CAA, such as attainment and maintenance of the NAAQS. For example, legislative history for section 302(k) indicates that Congress intentionally required that emission limitations apply continuously in order to assure that they would achieve these goals as well as be consistent with the enforcement structure of the CAA.<sup>325</sup>

4. Comments that the EPA lacks authority to issue a SIP call because it is required to "quantify" the magnitude of any alleged SIP deficiency in order to establish that it is substantial.

*Comment:* A number of commenters argued that, in addition to failing to provide a required technical analysis to support a SIP call, the EPA was also failing to quantify in advance the degree of inadequacy that is necessary for a given SIP provision to be substantially inadequate. The commenters asserted that the EPA has a burden to define in advance what amount of inadequacy is "substantial," before the Agency can require states to comply with a SIP call. Some commenters made this argument based upon their experience with prior SIP call rulemakings, such as the NO<sub>x</sub> SIP call in which the Agency performed such an analysis. Other commenters, however, evidently based this argument upon their reading of the D.C. Circuit's decision in *EME Homer City Generation, L.P. v. EPA*.<sup>326</sup> Some commenters also argued that "all" past EPA SIP calls have been based upon a specific technical analysis concerning the sufficiency of a SIP to provide for attainment and maintenance of a NAAQS and that this establishes that such an analysis is always required.

*Response:* The EPA disagrees that section 110(k)(5) requires the Agency to "quantify" the degree of inadequacy in a given SIP provision before issuing a SIP call. As explained in detail in the February 2013 proposal and this document, the EPA interprets section 110(k)(5) to authorize the Agency to determine the nature of the analysis necessary to make a finding that a SIP provision is substantially inadequate. The EPA agrees that for certain SIP call actions, such as the NO<sub>x</sub> SIP call, the

<sup>325</sup> See, e.g., H.R. 95-294, at 92 (1977) (referring to emission limitations as a fundamental tool for assuring attainment and maintenance of the NAAQS and stating that unless they are "complied with at all times, there can be no assurance that ambient standards will be attainment and maintained.")

<sup>326</sup> 696 F.3d 7, 29 (D.C. Cir. 2012) *rev'd*, 134 S. Ct. 1584 (2014).

specific nature of the SIP call in question for section 110(a)(2)(D)(i) did warrant a technical evaluation of whether the emissions from sources in particular states were significantly contributing to violations of a NAAQS in other states. Thus, the EPA elected to perform a specific form of analysis to determine whether emissions from sources in certain states significantly contributed to violations of the NAAQS in other states, and if so, what degree of reductions were necessary to remedy that interstate transport.

The nature of the SIP deficiencies at issue in this action does not require that type of technical analysis and does not require a "quantification" of the extent of the deficiency. In this action, the EPA is promulgating a SIP call action that directs the affected states to revise existing SIP provisions with specific legal deficiencies that make the provisions inconsistent with fundamental legal requirements of the CAA for SIPs, *e.g.*, automatic exemptions for emissions during SSM events or affirmative defense provisions that limit or eliminate the jurisdiction of courts to determine liability and impose remedies for violations. Accordingly, the EPA has determined that it is not necessary to establish that these deficiencies literally caused a specific violation of the NAAQS on a particular day or undermined a specific enforcement case. It is sufficient that the provisions fail to meet a legal requirement of the CAA and thus are substantially inadequate as provided in section 110(k)(5).

5. Comments that the EPA's interpretation of substantial inadequacy would override state discretion in development of SIP provisions.

*Comment:* Some state and industry commenters argued that the EPA's interpretation of its authority under section 110(k)(5) is wrong because it is inconsistent with the principle of cooperative federalism. These commenters asserted that the EPA's interpretation of the term "substantially inadequate," as explained in the February 2013 proposal, would allow the Agency to dictate that states revise their SIPs without any consideration of whether the states' preferred control measures affect attainment of the NAAQS, thereby expanding the EPA's role in CAA implementation. Consequently, these commenters concluded, the EPA's interpretation of section 110(k)(5) is neither "reasonable" nor "a permissible construction of the

statute" under the principles of *Chevron* deference.<sup>327</sup>

*Response:* The EPA disagrees with the commenters' view of the cooperative-federalism relationship established in the CAA, as explained in detail in section V.D.2 of this document. Because the commenters are misconstruing the respective responsibility and authorities of the states and the EPA under cooperative federalism, the Agency does not agree that its interpretation of section 110(k)(5) is "unreasonable" for this reason under the principles of *Chevron*. As explained in detail in the February 2013 proposal, the EPA interprets its authority under section 110(k)(5) to include the ability to require states to revise their SIP provisions to correct the types of deficiencies at issue in this action.

Section 110(k)(5) explicitly authorizes the EPA to issue a SIP call for a broad range of reasons, including to address any SIP provisions that relate to attainment and maintenance of the NAAQS, to interstate transport, or to any other requirement of the CAA.<sup>328</sup> The EPA's authority and responsibility to review SIP submissions in the first instance is to assure that they meet all applicable procedural and substantive requirements of the CAA, in accordance with the requirements of sections 110(k)(3), 110(l) and 193. The EPA's authority and responsibility under the CAA includes assuring that SIP provisions comply with specific statutory requirements, such as the requirement that emission limitations apply to sources continuously. The CAA imposes these statutory requirements in order to assure that the larger objectives of SIPs are achieved, such as the attainment and maintenance of the NAAQS, protection of PSD increments, improvement of visibility and providing for effective enforcement. The CAA imposes this authority and responsibility upon the EPA when it first evaluates a SIP submission for approval. Likewise, after the initial approval, section 110(k)(5) authorizes the EPA to require states to revise their SIPs whenever the Agency later determines that to be necessary to meet CAA requirements. This does not in any way allow the EPA to interfere in the

states' selection of the control measures they elect to impose to satisfy CAA requirements relating to NAAQS attainment and maintenance, provided that those selected measures comply with all CAA requirements such as the need for continuous emissions limitations. Accordingly, the EPA believes that its interpretation of section 110(k)(5) is fully consistent with the letter and the purpose of the principles of cooperative federalism.

6. Comments that the EPA cannot issue a SIP call for an existing SIP provision unless the provision was deficient at the time the state originally developed and submitted the provision for EPA approval.

*Comment:* Commenters argued that the EPA is using the SIP call to require states to change SIP provisions that were acceptable at the time they were originally approved and argued that section 110(k)(5) cannot be used for that purpose. Specifically, one commenter asserted that section 110(k)(5) provides that findings of substantial inadequacy shall "subject the State to the requirements of this chapter to which the State was subject *when it developed and submitted the plan for which such finding was made.*" (Emphasis added by commenter.) The implication of the commenters' argument is that a SIP provision only needs to meet the requirements of the CAA that were applicable at the time the state originally developed and submitted the provision for EPA approval. Because the EPA has no authority to issue a SIP call under their preferred reading of section 110(k)(5), the commenters claimed, the EPA would have to use its authority under section 110(k)(6) and would have to establish that the original approval of each of the provisions at issue in this action was in error.

*Response:* The EPA disagrees with this reading of section 110(k)(5). As an initial matter, the commenter takes the quoted excerpt of the statute out of context. The quoted language follows "to the extent the Administrator deems appropriate." Thus, it is clear when the statutory provision is read in full that the EPA has discretion in specifying the requirements to which the state is subject and is not limited to specifying only those requirements that applied at the time the SIP was originally "developed and submitted." Moreover, this cramped reading of section 110(k)(5) is not a reasonable interpretation of the statute because by this logic, the EPA could never require states to update grossly out-of-date SIP provisions so long as the provisions originally met CAA requirements. Given that the CAA creates a process by which

<sup>327</sup> *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843–44 (1984).

<sup>328</sup> See, *e.g.*, *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1168 (10th Cir. 2012) (citing 42 U.S.C. 7410(k)(5)) (holding that the EPA may issue a SIP call not only based on NAAQS violations, but also whenever "EPA determines that a SIP is no longer consistent with the EPA's understanding of the CAA"); *id.* at 1170 (upholding the EPA's authority "to call a SIP in order to clarify language in the SIP that could be read to violate the CAA," even absent a pertinent judicial finding).

the EPA is required to establish and to update the NAAQS on a continuing basis, and states are required to update and revise their SIPs on a continuing basis, the Agency believes that Congress would not have intended that SIP provisions remain static for all time simply because they were adequate when first developed and approved. Such an interpretation would mean that subsequent legally significant events such as amendments of the CAA, court decisions interpreting the CAA and new or revised EPA regulations are not relevant to the continuing adequacy of existing SIP provisions. Similarly, such an interpretation would mean that facts arising later could never provide a basis for a SIP call, e.g., to address interstate transport that was not evident at the time of the original development and approval of the SIP provisions or that needs to be addressed further because of a revised NAAQS.

The commenters also argued that if a state's SIP provision was flawed at the time the EPA approved it, then the Agency's only alternative for addressing the deficient provision is through the error correction authority of section 110(k)(6). The EPA disagrees. The CAA provides a number of tools to address flawed SIPs and the EPA does not interpret these provisions to be mutually exclusive. While the EPA could potentially have relied on section 110(k)(6) to remove the deficient provisions at issue in this action, the Agency believes that section 110(k)(5) authority also provides a means to address flawed SIP provisions. As explained in the February 2013 proposal, the EPA specifically considered the relative merits of reliance on section 110(k)(5) and section 110(k)(6) and determined that the former was a better approach for this action.<sup>329</sup> In the present circumstances, the EPA is not addressing a single targeted flaw, i.e., a specific SIP revision that was flawed. Moreover, the EPA is not only dealing with a multitude of states in this action, but also in many cases with numerous SIP provisions developed over the years by a specific state. The provisions at issue often are included in several different places in a complex SIP and can affect multiple emission limitations in the SIP that apply to sources for purposes of multiple NAAQS.

Comparing the SIP call and error correction approaches, the EPA concluded that the SIP call authority under section 110(k)(5) provides the better approach for this action, in that

it allows the states to evaluate the overall structure of their existing SIPs and determine how best to modify the affected SIP provisions in order to address the identified deficiencies. By contrast, use of the error correction authority under section 110(k)(6) would result in immediate disapproval and removal of existing SIP provisions from the SIP, which could cause confusion in terms of what requirements apply to sources. Moreover, the EPA's disapproval of a SIP submission through an error correction that reverses a prior SIP approval of a required SIP provision starts a "sanctions clock," and sanctions would apply if the state has not submitted a revised SIP within 18 months. Similarly, the EPA would be required to promulgate a FIP if the Agency has not approved a revised SIP submission from the state within 24 months. In comparison, the sanctions and federal plan "clocks" would not start under the SIP call approach unless and until the state fails to submit a SIP revision in response to this SIP call, or unless and until the EPA disapproves that SIP submission. As explained in the February 2013 proposal, the EPA determined that the SIP call process was a better procedure through which to address the deficient SIP provisions at issue in this action.

7. Comments that the EPA failed to consider how excess emissions resulting from SSM exemptions would affect compliance with specific NAAQS, including NAAQS with different averaging periods or different statistical forms.

*Comment:* In addition to general claims that the EPA failed to provide required technical analysis to support the proposed SIP call to states for automatic and discretionary SSM exemptions, commenters specifically argued that the EPA is required to establish that these exemptions have caused violations in light of the considerations such as the averaging time or statistical form of specific NAAQS. The implication of the commenters' argument is that in order to demonstrate that a given SIP provision with an SSM exemption is substantially inadequate under section 110(k)(5), the EPA has to establish definitively that the emissions during SSM events would cause a violation of a particular NAAQS. This would potentially include an evaluation of the impacts of the exempted emissions on NAAQS with different averaging periods, e.g., impacts on an annual NAAQS, a 24-hour NAAQS, or a 1-hour NAAQS, and impacts on NAAQS with different statistical forms, e.g., a NAAQS that measures attainment by an annual

arithmetical mean versus one that is measured by a 98th-percentile value. Moreover, commenters alluded to the difficulty of ascertaining definitively how emissions of specific precursor pollutants during a given exempted SSM event would affect attainment of one or more NAAQS.

To support the argument that the validity of SSM exemptions must be evaluated with respect to specific NAAQS, the commenters relied upon recent modeling guidance for the 1-hour NO<sub>2</sub> NAAQS in which, the commenters claimed, the EPA directed states to disregard emissions during SSM events for purposes of demonstrating compliance with that NAAQS. The commenters claimed that the cited EPA guidance supports their argument that emissions from a source during any specific SSM event are unlikely to cause a violation of the 1-hour NO<sub>2</sub> NAAQS. Accordingly, the commenters argued that the EPA has no authority to interpret the CAA to preclude exemptions for emissions during SSM events without first demonstrating that the exempt emissions cause NAAQS violations.

*Response:* As explained in the February 2013 proposal, and in response to other comments in this action, the EPA does not interpret section 110(k)(5) to require a specific technical analysis to support a SIP call related to legal deficiencies in SIP provisions. In section 110(k)(5), Congress left it to the Agency's discretion to determine what type and level of analysis is necessary to establish that a SIP provision is substantially inadequate. As explained in the February 2013 proposal, the EPA does not need to define the precise contours of its authority under section 110(k)(5) for all potential types of SIP deficiencies in this action. For purposes of this action, it is sufficient that the SIP provisions at issue are inconsistent with applicable requirements. While an ambient air quality impact analysis may be appropriate to support a SIP call with respect to certain requirements of the CAA, e.g., a SIP call for failure to have SIP provisions to prevent significant contribution to nonattainment in another state in accordance with section 110(a)(2)(D)(i)(I), the EPA does not interpret the CAA to require such an analysis in all instances. In particular, where the substantial inadequacy is related to a failure to meet a fundamental legal requirement for SIP provisions, such as the requirement in section 302(k) that emission limitations apply continuously, the EPA does not believe that such a technical analysis is required.

<sup>329</sup> See February 2013 proposal, 78 FR 12459 at 12483, n.72.

For example, section 302(k) does not differentiate between the legal requirements applicable to SIP emission limitations for an annual NAAQS versus for a 1-hour NAAQS, nor between any NAAQS based upon the statistical form of the respective standards. In addition to being supported by the text of section 302(k), the EPA's interpretation of the requirement for sources to be subject to continuous emission limitations is also the most logical given the consequences of the commenters' theory. The commenters' argument provides additional practical reasons to support the EPA's interpretation of the CAA to preclude exemptions for emissions during SSM events from SIP emission limitations as a basic legal requirement for all emission limitations.

The EPA agrees that to ascertain the specific ambient impacts of emissions during a given SSM event can sometimes be difficult. This difficulty can be exacerbated by factors such as exemptions in SIP provisions that not only excuse compliance with emission limitations but also affect reporting or recordkeeping related to emissions during SSM events. Determining specific impacts of emissions during SSM events can be further complicated by the fact that the limited monitoring network for the NAAQS in many states may make it more difficult to establish that a given SSM event at a given source caused a specific violation of the NAAQS. Even if a NAAQS violation is monitored, it may be the result of emissions from multiple sources, including multiple sources having an SSM event simultaneously. The different averaging periods and statistical forms of the NAAQS may make it yet more difficult to determine the impacts of specific SSM events at specific sources, perhaps until years after the event occurred. By the commenters' own logic, there could be situations in which it is functionally impossible to demonstrate definitively that emissions during a given SSM event at a single source caused a specific violation of a specific NAAQS.

The commenters' argument, taken to its logical extension, could result in situations where a SIP emission limitation is only required to be continuous for purposes of one NAAQS but not for another, based on considerations such as averaging time or statistical form of the NAAQS. Such situations could include illogical outcomes such as the same emission limitation applicable to the same source simultaneously being allowed to contain exemptions for emissions during SSM events for one NAAQS but not for another. For example, purely

hypothetically under the commenters' premise, a given source could simultaneously be required to comply with a rate-based NO<sub>x</sub> emission limitation continuously for purposes of a 1-hour NO<sub>2</sub> NAAQS but not be required to do so for purposes of an annual NO<sub>2</sub> NAAQS, or the source could be required to comply continuously with the same NO<sub>x</sub> limitation for purposes of the 8-hour ozone NAAQS and the 24-hour PM<sub>2.5</sub> NAAQS but not be required to do so for purposes of the annual PM<sub>2.5</sub> NAAQS. Add to this the further complication that the source may be located in an area that is designated nonattainment for some NAAQS and attainment for other NAAQS, and thus subject to emission limitations for attainment and maintenance requirements simultaneously.

Under the commenters' premise, the same SIP emission limitation, subject to the same statutory definition in section 302(k), could validly include SSM exemptions for purposes of some NAAQS but not others. Such a system of regulation would make it unnecessarily hard for regulated entities, regulators and other parties to determine whether a source is in compliance. The EPA does not believe that this is a reasonable interpretation of the requirements of the CAA, nor of its authority under section 110(k)(5). This unnecessary confusion is easily resolved simply by interpreting the CAA to require that a source subject to a SIP emission limitation for NO<sub>x</sub> must meet the emission limitation continuously, in accordance with the express requirement of section 302(k), thus making SSM exemptions impermissible. The EPA does not agree that the term "emission limitation" can reasonably be interpreted to allow noncontinuous emission limitations for some NAAQS and not others. The D.C. Circuit has already made clear that the term "emission limitation" means limits that apply to sources continuously, without exemptions for SSM events.

Finally, the EPA disagrees with the specific arguments raised by commenters concerning the modeling guidance for the 1-hour NO<sub>2</sub> NAAQS.<sup>330</sup> As relevant here, that guidance provides recommendations about specific issues that arise in modeling that is used in the PSD program for purposes of demonstrating that proposed construction will not cause or contribute to a violation of the 1-hour

NO<sub>2</sub> NAAQS. Thus, as an initial matter, the EPA notes that the context of that guidance relates to determining the extent of emission reductions that a source needs to achieve in order to obtain a permit under the PSD program, which is distinct from the question of whether an emission limitation in a permit must assure continuous emission reductions.

The commenters argued that this EPA guidance "allows sources to completely exclude all emissions during startup and shutdown scenarios." This characterization is inaccurate for a number of reasons. First, the guidance in question is only intended to address certain modeling issues related to predictive modeling to demonstrate that proposed construction will not cause or contribute to violation of the 1-hour NO<sub>2</sub> NAAQS, for purposes of determining whether a PSD permit may be issued and whether the emission limitations in the permit will require sufficient emission reductions to avoid a violation of this standard.

Second, to the extent that the guidance indicates that air quality considerations might in certain circumstances and for certain purposes be relevant to determining what emission limitations should apply to a source, that does not mean a source may legally have an exemption from compliance with existing emissions limitations during SSM events. In the guidance cited by the commenter, the EPA did recommend that under certain circumstances, it may be appropriate to model the projected impact of the source on the NAAQS without taking into account "intermittent" emissions from sources such as emergency generators or emissions from particular kinds of "startup/shutdown" operations.<sup>331</sup> However, the EPA did not intend this to suggest that emissions from sources during SSM events may validly be treated as exempt in SIP emission limitations. Within the same guidance document, the EPA stated unequivocally that the guidance "has no effect on or relevance to existing policies and guidance regarding excess emissions that may occur during startup and shutdown." The EPA explained further that "all emissions from a new or modified source are subject to the applicable permitted emission limits and may be subject to enforcement concerning such excess emissions, regardless of whether a portion of those emissions are not included in the modeling demonstration based on the

<sup>330</sup> See Memorandum, "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard," from T. Fox, EPA/OAQPS, to Regional Air Division Directors, March 1, 2011.

<sup>331</sup> *Id.* at 2.

guidance provided here.”<sup>332</sup> In other words, even if a state elects not to include intermittent emissions from some types of startup and shutdown events in certain modeling exercises, this does not mean that sources can be excused from compliance with the emission limitation during startup and shutdown, via an exemption for such emissions.

Third, the guidance does not say that all SSM emissions may be considered intermittent and excluded from the modeling demonstration. The guidance explicitly recommends that the modeling be based on “emission scenarios that can logically be assumed to be relatively continuous or which occur frequently enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations” and gives the example that it may be appropriate to include startup and shutdown emissions from a peaking unit at a power plant in the modeling demonstration because those units go through frequent startup/shutdown cycles.<sup>333</sup> Thus, the guidance does not support commenters’ premise that the EPA must evaluate the air quality impacts from SSM events in SIP actions to determine that SSM exemptions in SIP provisions are substantially inadequate to meet fundamental requirements of the CAA.

8. Comments that this SIP call action is inconsistent with 1976 EPA guidance for such actions.

*Comment:* One commenter argued that the EPA misinterpreted the term “substantially inadequate” in the February 2013 proposal because the Agency is reading this term differently than in the past. In support of this contention, the commenter pointed to a 1976 guidance document from the EPA concerning the question of when a SIP may be substantially inadequate. The commenter argued that the EPA is wrong to interpret that term to mean anything other than a demonstrated failure to provide for factual attainment of the NAAQS. According to the commenter, the content of the 1976 guidance indicates that the EPA is obligated to conduct a specific analysis to determine the air quality impact of an alleged inadequacy in a SIP provision and to establish and document the specific air quality impacts of the inadequacy.

*Response:* The EPA disagrees with the commenter for multiple reasons. First, the 1976 document referred to by the commenter was the EPA’s guidance on the requirements of the CAA as it was

embodied in 1970, not as Congress substantially amended it in 1990. The 1976 guidance pertained not to the current SIP call provision at section 110(k)(5) but rather to the requirements of section 110(a)(2)(H). This is particularly significant because the 1990 CAA Amendments added section 110(k)(5) to the statute. Although section 110(a)(2)(H) remains in the statute, it is primarily a requirement applicable to state “infrastructure” SIP obligations through which states are required to have state law authority to meet the structural SIP elements required in section 110(a)(2).<sup>334</sup> In reviewing SIPs for compliance with section 110(a)(2)(H), the EPA verifies that state SIPs include the legal authority to respond to any SIP call. By contrast, the EPA’s authority to issue a SIP call under section 110(k)(5) is worded broadly, explicitly including the authority to make a finding of substantial inadequacy not only for failure to attain or maintain the NAAQS but also for failures related to interstate transport or “otherwise to comply with any requirement of” the CAA.

Second, even setting aside that the guidance is not relevant to the EPA’s authority under section 110(k)(5), the 1976 guidance on its face did not purport to define the full contours of the term “substantially inadequate” in section 110(a)(2)(H). The 1976 guidance stated explicitly that “it is difficult to develop comprehensive guidelines for all cases” and only listed “[s]ome factors that could be considered” in evaluating whether a state’s SIP is substantially inadequate.<sup>335</sup> While the EPA acknowledges that these factors were primarily focused upon ambient air considerations as suggested by the commenter, they were not limited to that topic. Moreover, the EPA stated that factors “other than air quality and emission data must be considered” and provided several examples, including potential amendments to the CAA under consideration at that point in time that might change state SIP obligations and thus create the need for a SIP call. More significantly, nothing in the 1976 guidance indicated that the EPA should or would ignore legal deficiencies in existing SIP provisions or that legal deficiencies are not relevant to the

question of whether a SIP would provide for attainment of the NAAQS.

Third, the EPA notes that the commenter did not advocate that the Agency follow the 1976 guidance with respect to other issues, e.g., that the EPA would initiate the obligations of states to revise their SIPs simply by making an announcement of substantial inadequacy “without proposal”; that states would be required to make the necessary SIP revision within 12 months; or that states should make those revisions by no later than July 1, 1977.

The EPA has fully articulated its interpretation of the term “substantial inadequacy” in section 110(k)(5) in the February 2013 proposal. As explained in the proposal, the EPA interprets its current authority to include the issuance of a SIP call for the types of legal deficiencies identified in this action. In order to establish that these legal deficiencies are substantial inadequacies, the EPA does not interpret section 110(k)(5) to require the Agency to document precisely how each deficiency factually undermines the objectives of the CAA, such as attainment and maintenance of the NAAQS in a particular location on a particular date. It is sufficient that these provisions are inconsistent with the legal requirements for SIP provisions set forth in the CAA that are intended to assure that SIPs in fact do achieve the intended objectives.

10. Comments that because the EPA has misinterpreted the statutory terms “emission limitation” and “continuous,” the EPA has not established a substantial inadequacy.

*Comment:* Many state and industry commenters disagreed with the EPA’s interpretation of the CAA to prohibit SSM exemptions in SIP provisions. These arguments took many tacks, based on the interpretation of various statutory provisions, the applicability of the court decision in *Sierra Club v. Johnson*, alleged inconsistencies related to this requirement in the EPA’s own NSPS and NESHAP regulations and a variety of other arguments. In particular, many commenters argued that the EPA was misinterpreting the statutory terms “emission limitation” and “continuous” in section 302(k) to preclude automatic or discretionary exemptions for emissions during SSM events in SIP provisions. As an extension of these arguments, commenters also argued that the EPA lacks authority under section 110(k)(5) to issue a SIP call when it has incorrectly interpreted a relevant statutory term as the basis for finding a SIP provision to be substantially inadequate.

<sup>334</sup> See Memorandum, “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Section 110(a)(1) and 110(a)(2),” from Stephen D. Page, Director, OAQPS, to Regional Air Directors, Regions 1–10, September 13, 2013, at page 51 (explaining that a state meets section 110(a)(2)(H) by having authority to revise its SIP in response to a SIP call).

<sup>335</sup> *Id.* at 10–11.

<sup>332</sup> *Id.* at 11.

<sup>333</sup> *Id.* at 9.



*Response:* The EPA disagrees that it lacks authority to issue this SIP call on the grounds claimed by the commenters. As explained in detail in the February 2013 proposal and in this final action, the EPA has long interpreted the CAA to preclude SSM exemptions in SIP provisions. This interpretation has been stated by the EPA since at least 1982, reiterated in subsequent SSM Policy guidance documents, applied in a number of notice and comment rulemakings and upheld by courts.

With respect to the arguments that the EPA has incorrectly interpreted the terms “emission limitation” and “continuous” in this action, the EPA has responded in detail in section VII.A.3 of this document and need not repeat those responses here. In short, the EPA is interpreting those terms consistent with the relevant statutory language and consistent with the decision of the court in *Sierra Club v. Johnson*. Because the specific SIP provisions identified in this action with automatic or discretionary exemptions for emissions during SSM events do not limit emissions from the affected sources continuously, the EPA has found these provisions substantially inadequate to meet CAA requirements in accordance with section 110(k)(5).

11. Comments that section 110(k)(5) imposes a “higher burden of proof” upon the EPA than section 110(l) and that section 110(l) requires the EPA to conduct a specific technical analysis of the impacts of a SIP revision.

*Comment:* Commenters argued that the EPA is misinterpreting section 110(k)(5) to authorize a SIP call using a lower “standard” than the section 110(l) “standard” that requires disapproval of a new SIP provision in the first instance. The commenters stated that section 110(k)(5) requires a determination by the EPA that a SIP provision is “substantially inadequate” to meet CAA requirements in order to authorize a SIP call, whereas section 110(l) provides that the EPA must disapprove a SIP revision provision only if it “would interfere with” CAA requirements. Thus, the commenters asserted that “the SIP call standard is higher than the SIP revision standard.” The commenters further argued that it would be “illogical and contrary to the CAA to interpret section 110 to establish a lower standard for calling a previously approved SIP and demanding revisions to it than for disapproving that SIP in the first place.” For purposes of section 110(l), the commenters claimed, the EPA “is required” to rely on specific “data and evidence” that a given SIP revision would interfere with CAA requirements and this requirement is thus imposed by

section 110(k)(5) as well. In support of this reasoning, the commenters relied on prior court decisions pertaining to the requirements of section 110(l).

*Response:* The EPA disagrees with the commenters’ interpretations of the relative “standards” of section 110(k)(5) and section 110(l) and with the commenters’ views on the court decisions pertaining to section 110(l). In addition, the EPA notes that the commenters did not fully address the related requirements of section 110(k)(3) concerning approval and disapproval of SIP provisions, of section 302(k) concerning requirements for emission limitations or of any other sections of the CAA that are substantively germane to specific SIP provisions and to enforcement of SIP provisions in general.<sup>336</sup>

The commenters argued that, by the “plain language” of the CAA and because of “common sense,” Congress intended the section 110(k)(5) SIP call standard to be “higher” than the section 110(l) SIP revision. The EPA disagrees that this is a question resolved by the “plain language.” To the contrary, the three most relevant statutory provisions, section 110(k)(3), section 110(l), and section 110(k)(5), are each to some degree ambiguous and are likewise ambiguous with respect to how they operate together to apply to newly submitted SIP provisions versus existing SIP provisions. Section 110(k)(3) requires the EPA to approve a newly submitted SIP provision “if it meets all of the applicable requirements of [the CAA].” Implicitly, the EPA is required to disapprove a SIP provision if it does not meet all applicable CAA requirements. Section 110(l) provides that the EPA may not approve any SIP revision that “would interfere with . . . any other applicable requirement of [the CAA].” Section 110(k)(5) provides that the EPA shall issue a SIP call “whenever” the Agency finds an existing SIP provision “substantially inadequate . . . to otherwise comply with [the CAA].” None of the core terms in each of the three provisions is

<sup>336</sup> CAA section 110(k)(5) states that “[w]henver the [EPA] finds that the applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant [NAAQS], to mitigate adequately [ ] interstate pollutant transport . . . , or to otherwise comply with any requirement of [the CAA], the [EPA] shall require the State to revise the plan as necessary to correct such inadequacies.” Section 110(l) states that, in the event a state submits a SIP revision, the EPA “shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress . . . or any other applicable requirement of [the CAA].” Section 110(k)(3) states that the EPA “shall approve such submittal . . . if it meets all the requirements of [the CAA].”

defined in the CAA. Thus, whether the “would interfere with” standard of section 110(l) is *per se* a “lower” standard than the “substantially inadequate” standard of section 110(k)(5) as advocated by the commenters is not clear on the face of the statute, and thus the EPA considers these terms ambiguous.

As explained in detail in the February 2013 proposal, the EPA interprets its authority under section 110(k)(5) broadly to include authority to require a state to revise an existing SIP provision that fails to meet fundamental legal requirements of the CAA.<sup>337</sup> The commenters raise a valid point that section 110(l) and section 110(k)(5), as well as section 110(k)(3), facially appear to impose somewhat different standards. However, the EPA does not agree that the proper comparison is necessarily between section 110(k)(5) and section 110(l) but instead would compare section 110(k)(5) and section 110(k)(3). Section 110(l) is primarily an “anti-backsliding” provision, meant to assure that if a state seeks to revise its SIP to change *existing* SIP provisions that the EPA has previously determined *did meet* CAA requirements, then there must be a showing that the revision of the existing SIP provisions (e.g., a relaxation of an emission limitation) would not interfere with attainment of the NAAQS, reasonable further progress or any other requirement of the CAA. By contrast, section 110(k)(3) is a more appropriate point of comparison because it directs the EPA to approve a SIP provision “that meets all applicable requirements” of the CAA and section 110(k)(5) authorizes the EPA to issue a SIP call for previously approved SIP provisions that it later determines do not “comply with any requirement” of the CAA.

Notwithstanding that each of these three statutory provisions applies to different stages of the SIP process, all three of them explicitly make compliance with the legal requirements of the CAA a part of the analysis. At a minimum, the EPA believes that Congress intended these three sections, working together, to ensure that SIP provisions must meet all applicable legal CAA requirements when they are initially approved and to ensure that SIP provisions continue to meet CAA requirements over time, allowing for potential amendments to the CAA, changes in interpretation of the CAA by the EPA or courts or simply changed facts. With respect to compliance with the applicable legal requirements of the

<sup>337</sup> See February 2013 proposal, 78 FR 12459 at 12483–88.

CAA, the EPA does not interpret section 110(k)(5) as setting a *per se* “higher” standard. Under section 110(l), the EPA is likewise directed not to approve a SIP revision that is not consistent with legal requirements imposed by the CAA, including those relevant to SIP provisions such as section 302(k). Pursuant to section 110(l), the EPA would not be authorized to approve a SIP revision that contradicts requirements of the CAA; pursuant to section 110(k)(5) the EPA is authorized to direct states to correct a SIP provision that it later determines does not meet the requirements of the CAA.

The EPA also disagrees with the commenters’ characterization of the requirements of section 110(l) and their arguments based on court decisions concerning section 110(l). Commenters rely on the decision in *Ky. Res Council v. EPA* to support their argument that section 110(l) requires the EPA to disapprove a SIP revision only if it “would interfere” with a requirement of the CAA, not if it “could interfere” with such requirements.<sup>338</sup> From this decision, the commenters argue that the EPA is required to conduct a specific technical analysis under section 110(l) to determine the specific impacts of the revision on attainment and maintenance of the NAAQS and argue that by inference this must therefore also be required by section 110(k)(5). To the extent that court decisions concerning section 110(l) are relevant, these court decisions do not support the commenters’ position.

First, the EPA notes that the commenters mischaracterize section 110(l) as requiring a particular form or method of analysis to support approval or disapproval of a SIP revision. Section 110(l) does not contain any such explicit requirement or specifications. The EPA interprets section 110(l) only to require an analysis that is appropriate for the particular SIP revision at issue, and that analysis can take different forms or different levels of complexity depending on the facts and circumstances relevant to the SIP revision. Like section 110(l), the EPA believes that section 110(k)(5) does not specify a particular form of analysis necessary to find a SIP provision substantially inadequate.

Second, the commenters mischaracterize the primary decision that they rely upon. The court in *Ky. Res Council v. EPA* expressly discussed the fact that section 110(l) does not specify precisely how any such analysis should be conducted and deferred to the EPA’s reasonable interpretation of what form

of analysis is appropriate for a given SIP revision.<sup>339</sup> Indeed, the decision stands for the proposition that the EPA does *not* necessarily have to develop an attainment demonstration in order to evaluate the impacts of a SIP revision, *i.e.* “prove” whether the revision will interfere with attainment, maintenance, reasonable further progress or any other requirements of the CAA. Thus, the commenters’ argument that section 110(k)(5) has to require a specific technical analysis of impacts on attainment and maintenance because section 110(l) does so is simply in error.

Third, the section 110(l) cases cited by the commenters did not involve SIP revisions in which states sought to change existing SIP provisions so that they would fail to meet the specific CAA requirements at issue in this action. For example, none of the cases involved the EPA’s approval of a new automatic exemption for emissions during SSM events. Had the state submitted a SIP revision that failed to meet applicable requirements of the CAA for SIP provisions, such as changing existing SIP emission limitations so that they would thereafter include SSM exemptions, then the EPA would have had to disapprove them.<sup>340</sup> The challenged rulemaking actions at issue in the cases relied upon by the commenters involved SIP revision changes unrelated to the specific legal requirements at issue in this action. Accordingly, the EPA’s evaluation of those SIP revisions focused upon other issues, such as whether the revision would factually result in emissions that would interfere with attainment and maintenance of the NAAQS, that were relevant to the particular provisions at issue in those cases.

12. Comments that the EPA is misinterpreting *US Magnesium* and that the decision provides no precedent for this action.

*Comment:* A number of industry commenters argued that the EPA’s reliance on the decision of the Tenth Circuit in *US Magnesium, LLP v. EPA* is misplaced.<sup>341</sup> According to the commenters, the EPA did not correctly interpret the decision and is misapplying it in acting upon the Petition. The commenters asserted that

the decision provides no precedent for this action because it was decided upon issues different from those at issue here. Commenters also argued that the court did not reach an important issue because the petitioner had failed to comment on it, *i.e.*, the argument that the EPA had not defined the term “substantially inadequate” in the rulemaking.<sup>342</sup>

*Response:* The EPA disagrees with the commenters on this point. The EPA of course acknowledges that the court in *US Magnesium* did not address the full range of issues related to the correct treatment of emissions during SSM events in SIP provisions that were raised in the Petition, *e.g.*, the court did not need to address the legal basis for affirmative defense provisions in SIPs because of the nature of the SIP provisions at issue in that case. However, the *US Magnesium* court evaluated many of the same key questions raised in this rulemaking and reached decisions that are very relevant to this action.

First, the *US Magnesium* court specifically upheld the EPA’s SIP call action requiring the state to remove or revise a SIP provision that included an automatic exemption for emissions from sources during “upsets,” *i.e.*, malfunctions. In doing so, the court was fully aware of the reasons why the EPA interprets the CAA to prohibit such exemptions, because they violate statutory requirements including section 302(k), section 110(a)(2)(A) and (C), and other requirements related to attainment and maintenance of the NAAQS. The court explained at length the EPA’s reasoning about why the SIP provisions were inconsistent with CAA requirements for SIP provisions.<sup>343</sup>

Second, the court specifically upheld the EPA’s SIP call action requiring the state to revise its SIP to remove or revise another SIP provision that could be interpreted to give state personnel the authority to determine unilaterally whether excess emissions from sources are a violation of the applicable emission limitation and thereby preclude any enforcement action by the EPA or citizens.

Third, the court also upheld the EPA’s authority to issue a SIP call requiring a state “to clarify language in the SIP that could be read to violate the CAA, when a court has not yet interpreted the language in that way.” Indeed, the court opined that “in light of the potential conflicts” between competing interpretations of the SIP provision,

<sup>339</sup> See 467 F.3d at 995 (rejecting claim that section 110(l) required a modeled attainment demonstration to prove that the SIP revision would meet applicable CAA requirements).

<sup>340</sup> The EPA notes that the one exception to this, of course, is the Agency’s recent approval of new SIP provisions in Texas that created an affirmative defense for malfunctions. As discussed elsewhere in this document, however, the EPA has determined that such provisions do not meet CAA requirements and is thus issuing a SIP call for those provisions.

<sup>341</sup> See 690 F.3d 1157 (10th Cir. 2012).

<sup>342</sup> *Id.*, 690 F.3d 1167, n.3.

<sup>343</sup> *Id.*, 690 F.3d at 1159–63.

<sup>338</sup> See 467 F.3d 986 (6th Cir. 2006).

“seeking revision of the SIP was prudent, not arbitrary or capricious.”<sup>344</sup>

Fourth, the court explicitly upheld the EPA’s reasonable interpretation of section 110(k)(5) to authorize a SIP call when a state’s SIP provision is substantially inadequate to meet applicable legal requirements, without making “specific factual findings” that the deficient provision resulted in a NAAQS violation. The EPA interpreted the CAA to allow a SIP call if the Agency “determined that aspects of the SIP undermine the fundamental integrity of the CAA’s SIP process and structure, regardless of whether or not the EPA could point to specific instances where the SIP allowed violations of the NAAQS.” The *US Magnesium* court explicitly agreed that section 110(k)(5) authorizes issuance of a SIP call “where the EPA determines that a SIP is no longer consistent with the EPA’s understanding of the CAA.”<sup>345</sup>

Fifth, the court rejected claims that the EPA was requiring states to comply with the SSM Policy guidance rather than the CAA requirements, and the court noted that the Agency had undertaken notice-and-comment rulemaking to evaluate whether the SIP provisions at issue were consistent with CAA requirements.<sup>346</sup>

Sixth, the court rejected the claim that the EPA was interpreting the requirements of the CAA incorrectly because the EPA is in the process of bringing its own NSPS and NESHAP regulations into line with CAA requirements for emission limitations, in accordance with the *Sierra Club v. Johnson* decision.<sup>347</sup> The court noted that the EPA is now correcting SSM exemptions in its own regulations, and thus its prior interpretation of the CAA, rejected by the court in *Sierra Club v. Johnson*, did not make the SIP call to Utah arbitrary and capricious.<sup>348</sup>

On these and many other issues, the EPA believes that the court’s decision in *US Magnesium* provides an important and correct precedent for the Agency’s interpretation of the CAA in this action. The commenters’ apparent disagreement with the court does not mean that the decision is not relevant to this action. The commenters specifically argued that the *US Magnesium* court did not reach the issue of whether the EPA had “defined” the term “substantial inadequacy” in the challenged rulemaking because the petitioner had

not raised this point in comments. The EPA does not necessarily agree that “defining” the full contours of the term is a necessary step for a SIP call, but regardless of that fact the Agency did explain its interpretation of the term “substantial inadequacy” with respect to the SIP provisions at issue in the February 2013 proposal, the SNPR and this final action.

13. Comments that EPA has to evaluate a SIP “as a whole” to have the authority to issue a SIP call.

*Comment:* Many state and industry commenters argued that the EPA cannot evaluate individual SIP provisions in isolation and that the Agency is required to evaluate the entire SIP and any related permit requirements in order to determine if a specific SIP provision is substantially inadequate. In particular, some commenters argued that the EPA was wrong to focus upon the exemptions in SIP emission limitations for emissions during SSM events without considering whether some other requirement of the SIP or of a permit might operate to override or otherwise modify the exemptions. Many of the commenters asserted that other “general duty” clause requirements, elsewhere in other SIP provisions or in permits for individual sources, make the SSM exemptions in SIP emission limitations valid under the CAA.<sup>349</sup> These other requirements were often general duty-type standards that require sources to minimize emissions, to exercise good engineering judgment or not to cause a violation of the NAAQS. The implication of the commenters’ arguments is that such general-duty requirements legitimize an SSM exemption in a SIP emission limitation—even if they are not explicitly a component of the SIP provision, if they are not incorporated by reference in the SIP provision and if they are not adequate to meet the applicable substantive requirements for that type of SIP provision.

*Response:* The EPA disagrees with the basic premise of the commenters that the EPA cannot issue a SIP call directing a state to correct a facially deficient SIP provision without first determining

whether an unrelated and not cross-referenced provision of the SIP or of a permit might potentially apply in such a way as to correct the deficiency. As explained in section VII.A.3 of this document, the EPA believes that all SIP provisions must meet applicable requirements of the CAA, including the requirement that they apply continuously to affected sources. In reviewing the specific SIP provisions identified in the Petition, the EPA determined that many of the provisions include explicit automatic or discretionary exemptions for emissions during SSM events, whether as a component of an emission limitation or as a provision that operates to override the otherwise applicable emission limitation. Based on the EPA’s review of these provisions, neither did they apply “continuously” as required by section 302(k) nor did they include cross-references to any other limitations that applied during such exempt periods to potentially provide continuous limitations. To the extent that the SIP of a state contained any other requirements that applied during such periods, that fact was not plain on the face of the SIP provision. If the EPA was unable to ascertain what, if anything, applied during these explicitly exempt periods, then the Agency concludes that regulated entities, members of and the public, and the courts will have the same problem. The EPA has authority under section 110(k)(5) to issue a SIP call requiring a state to clarify a SIP provision that is ambiguous or unclear such that the provision can lead to misunderstanding and thereby interfere with effective enforcement.<sup>350</sup>

To the extent that an affected state believes that the EPA has overlooked another valid provision of the SIP that would cure the substantial inadequacy that the Agency has identified in this action, the state may seek to correct the deficient SIP provision by properly revising it to remove the impermissible exemption or affirmative defense and replacing it with the requirements of the other SIP provision or by including a clear cross-reference that clarifies the applicability of such provision as a component of the specific emission limitation at issue. The state should make this revision in such a way that the SIP emission limitation is clear on its face as to what the affected sources are required to do during all modes of operation. The emission limitation should apply continuously, and what is required by the emission limitation under any mode of operation should be

<sup>349</sup> The EPA notes that other commenters on the February 2013 proposal made similar arguments with respect to affirmative defense provisions in their SIPs, asserting that other SIP provisions or terms in permits provided additional criteria that would have made the affirmative defense provisions at issue consistent with the EPA’s interpretation of the CAA in the 1999 SSM Guidance. See, e.g., Comment from Virginia Department of Environmental Quality at 1–2, in the rulemaking docket at EPA–HQ–OAR–2012–0322–0613. Because the EPA no longer interprets the CAA to allow any affirmative defense provisions, these comments are not germane.

<sup>350</sup> See *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1169 (10th Cir. 2012).

<sup>344</sup> *Id.*, 690 F.3d at 1170.

<sup>345</sup> *Id.*, 690 F.3d at 1168.

<sup>346</sup> *Id.*, 690 F.3d at 1168.

<sup>347</sup> *Id.*, 690 F.3d at 1169.

<sup>348</sup> *Id.*, 690 F.3d at 1170.

readily ascertainable by the regulated entities, the regulators and the public. The EPA emphasizes, however, that each revised SIP emission limitation must meet the substantive requirements applicable to that type of provision (e.g., impose RACM/RACT-level controls on sources located in nonattainment areas) and must be legally and practically enforceable (e.g., have sufficient recordkeeping, reporting and monitoring requirements). The revised SIP emission limitation must be consistent with all applicable CAA requirements.

14. Comments that the EPA inappropriately is “using guidance” as a basis for the SIP call action.

*Comment:* State and industry commenters asserted that the EPA is relying on guidance as the basis for issuing this SIP call action and argued that the EPA cannot issue a SIP call based on guidance. The commenters argued that the EPA guidance provided in the SSM Policy is not binding and that states thus have the flexibility to develop SIP provisions that are not in conformance with EPA guidance. Some commenters claimed that if the EPA wishes to make the interpretations of the CAA in its SSM Policy binding upon states, then it must do so through a notice-and-comment rulemaking and must codify those requirements in binding regulations in the CFR. The commenters argued that states should not be subject to a SIP call for existing provisions in their SIPs on the basis that they do not conform to guidance in the SSM Policy. Some commenters acknowledged that the EPA is providing notice and comment on its SSM Policy through this action, but still they contended that the EPA’s interpretation of the CAA is not binding upon states unless the Agency codifies its updated SSM Policy in regulations in the CFR.

*Response:* The EPA disagrees with arguments that the Agency has acted inappropriately by relying on its interpretations of the CAA set forth in the SSM Policy in issuing this SIP call. As explained in the February 2013 proposal, the SSM Policy is merely guidance. It is correct that guidance documents are nonbinding. However, the guidance provides the EPA’s recommendations concerning how best to interpret the statutory requirements of the CAA that are binding. Moreover, the EPA’s interpretation of the CAA in the SSM Policy can become binding once the Agency adopts and applies that interpretation through notice-and-comment rulemaking. The EPA is issuing this SIP call action through notice-and-comment rulemaking and has specifically taken comment on its

interpretations of the CAA as they apply to the specific SIP provisions at issue in this action. Thus, the EPA is requiring the affected states to comply with the requirements of the CAA, not with the SSM Policy guidance itself.<sup>351</sup>

The EPA also disagrees with commenters that in order to rely on its interpretation of the CAA in the SSM Policy, the EPA must first issue regulatory provisions applicable to SIP provisions. There is no such general obligation for the EPA to codify its interpretations of the CAA in regulatory text. Unless Congress has specifically directed the EPA to promulgate regulations for a particular purpose, the EPA has authority and discretion to promulgate such regulations as it deems necessary or helpful in accordance with its authority under section 301. With respect to issues concerning proper treatment of excess emissions during SSM events in SIP provisions, the EPA has historically proceeded by issuance of guidance documents. In this action, the EPA is undergoing notice-and-comment rulemaking to update and revise its guidance and to apply that guidance to specific existing SIP provisions. Thus, the EPA is not required to promulgate specific implementing regulations as a precondition to making a finding of substantial inadequacy to address existing deficient SIP provisions.

15. Comments that the EPA’s redesignation and approval of a maintenance plan for an area in a state with a SIP that has provisions at issue in the SIP call establishes that all provisions in the SIP meet CAA requirements.

*Comment:* Commenters argued that the “EPA’s allegations that SSM provisions could threaten the NAAQS is contradicted by” the fact that the “EPA has consistently approved redesignation requests and attainment and maintenance plans, notwithstanding SSM provisions.” According to these commenters, “[t]he fact that EPA has already approved numerous redesignation requests . . . indicates that EPA has already (and in many cases, very recently) admitted that the [State SIPs are] fully approved, sufficient to achieve the NAAQS, and fully enforceable.” The commenters argued that the appropriate time for the EPA to

have addressed any issues concerning deficient SIP provisions applicable to emissions during SSM events was “in the context of its review and approval of [maintenance] plans.” Because the EPA has been approving maintenance plans for areas in states subject to this SIP call action, the commenters believed, this “is evidence that the Agency has not viewed SSM-related emissions as a threat to attainment or maintenance of the NAAQS.” In essence, these commenters argued that the EPA’s redesignation of any area in any of the states at issue in this rulemaking indicates that the SIPs of these states fully meet all CAA requirements and that there are no deficiencies whatsoever in the SIPs of these states.

*Response:* The EPA disagrees with the commenters’ premise that the Agency’s approval of redesignation requests and maintenance plans for certain nonattainment areas, notwithstanding the presence of impermissible provisions related to emissions during SSM events that may have been present in the SIP for those areas, is evidence that the EPA does not view SSM-related emissions as a threat to attainment or maintenance of the NAAQS. Contrary to the theory of the commenters, the EPA’s redesignation of an area to attainment does not mean that the SIP for the state in question fully meets each and every requirement of the CAA.

The CAA sets forth the general criteria for redesignation of an area from nonattainment to attainment in section 107(d)(3)(E). These criteria include a determination by the EPA that the area has attained the relevant standard (section 107(d)(3)(E)(i)) and that the EPA has fully approved the applicable implementation plan for the area for purposes of redesignation (section 107(d)(3)(E)(ii) and (v)). The EPA must also determine that the improvement in air quality in the area is due to reductions that are permanent and enforceable (section 107(d)(3)(E)(iii)) and that the EPA has fully approved a maintenance plan for the area under section 175A (section 107(d)(3)(E)(iv)).

For purposes of redesignation, the EPA has long held that SIP requirements that are not linked with a particular nonattainment area’s designation and classification, including certain section 110 requirements, are not “applicable” for purposes of evaluating compliance with the specific redesignation criteria in CAA sections 107(d)(3)(E)(ii) and (v).<sup>352</sup> The EPA maintains this

<sup>351</sup> The EPA’s reliance on interpretations of the CAA in the SSM Policy through notice-and-comment rulemakings has previously been upheld by several courts. See, e.g., *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1168 (10th Cir. 2012) (upholding the EPA’s SIP call to Utah for existing SIP provisions); *Mich. Dep’t of Env’tl. Quality v. Browner*, 230 F.3d 181 (6th Cir. 2000) (upholding the EPA’s disapproval of a SIP submission).

<sup>352</sup> See, e.g., “Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; State of Arizona;

interpretation because these requirements remain applicable after an area is redesignated to attainment. For at least the past 15 years, the EPA has applied this interpretation with respect to requirements to which a state will continue to be subject after the area is redesignated.<sup>353</sup> Courts reviewing the EPA's interpretation of the term "applicable" in section 107(d)(3) in the context of requirements applicable for redesignation have generally agreed with the Agency.<sup>354</sup>

The EPA therefore approves redesignation requests in many instances without passing judgment on every part of a state's existing SIP, if it finds those parts of the SIP are not "applicable" for purposes of section 107(d)(3). For example, the EPA recently approved Arizona's request to redesignate the Phoenix-Mesa 1997 8-hour ozone nonattainment area and its accompanying maintenance plan, while recognizing that Arizona's SIP may contain affirmative defense provisions that are not consistent with CAA requirements.<sup>355</sup> In that case, the EPA explicitly noted that approval of the redesignation of the Phoenix-Mesa nonattainment area did not relieve Arizona or Maricopa County of its obligation to remove the affirmative defense provisions from the SIP, if the EPA was to take later action to require correction of the Arizona SIP with respect to those provisions.<sup>356</sup>

The EPA also disagrees with commenters to the extent they suggest that the Agency must use the redesignation process to evaluate whether any existing SIP provisions are legally deficient. The EPA has other statutory mechanisms through which to

address existing deficiencies in a state's SIP, and courts have agreed that the EPA retains the authority to issue a SIP call to a state pursuant to CAA section 110(k)(5) even after redesignation of a nonattainment area in that state.<sup>357</sup> The EPA recently addressed this issue in the context of redesignating the Ohio portion of the Huntington-Ashland (OH-WV-KY) nonattainment area to attainment for the PM<sub>2.5</sub> NAAQS.<sup>358</sup> In response to comments challenging the proposed redesignation due to the presence of certain SSM provisions in the Ohio SIP, the EPA concluded that the provisions at issue did not provide a basis for disapproving the redesignation request.<sup>359</sup> In so concluding, the EPA noted that the SSM provisions and related SIP limitations at issue in that state were already approved into the SIP and thus "permanent and enforceable" for the purposes of meeting section 107(d)(3)(E)(iii) and that the Agency has other statutory mechanisms for addressing any problems associated with the SSM provisions.<sup>360</sup> The EPA emphasizes that the redesignation of areas to attainment does not relieve states of the responsibility to remove legally deficient SIP provisions either independently or pursuant to a SIP call. To the contrary, the EPA maintains that it may determine that deficient provisions such as exemptions or affirmative defense provisions applicable to SSM events are contrary to CAA requirements and take action to require correction of those provisions even after an area is redesignated to attainment for a specific NAAQS. This interpretation is consistent with prior redesignation actions.

In some cases, the EPA has stated that the presence of illegal SSM provisions does constitute grounds for denying a redesignation request. For example, the EPA issued a proposed disapproval of Utah's redesignation requests for Salt Lake County, Utah County and Ogden City PM<sub>10</sub> nonattainment areas.<sup>361</sup> However, the specific basis for the proposed disapproval in that action, which was one of many SIP deficiencies

identified by EPA, was the state's inclusion in the submission of new provisions not previously in the SIP that would have provided blanket exemptions from compliance with emission standards during SSM events. Those SSM exemptions were not in the previously approved SIP, and the EPA declined to approve them in connection with the redesignation request because such provisions are inconsistent with CAA requirements. In most redesignation actions, states have not sought to create new SIP provisions that are inconsistent with CAA requirements as part of their redesignation requests or maintenance plans.

Finally, the EPA disagrees with commenters that approval of a maintenance plan for any area has the result of precluding the Agency from later finding that certain SIP provisions are substantially inadequate under the CAA on the basis that those provisions may interfere with attainment or maintenance of the NAAQS or fail to meet any other legal requirement of the CAA. The approval of a state's redesignation request and maintenance plan for a particular NAAQS is not the conclusion of the state's and the EPA's responsibilities under the CAA but rather is one step in the process Congress established for identifying and addressing the nation's air quality problems on a continuing basis. The redesignation process allows states with nonattainment areas that have attained the relevant NAAQS to provide the EPA with a demonstration of the control measures that will keep the area in attainment for 10 years, with the caveat that the suite of measures may be revisited if necessary and must be revisited with a second maintenance plan for the 10 years following the initial 10-year maintenance period.

Moreover, it is clear from the structure of section 175A maintenance plans that Congress understood that the EPA's approval of a maintenance plan is not a guarantee of future attainment air quality in a nonattainment area. Rather, Congress foresaw that violations of the NAAQS could occur following a redesignation of an area to attainment and therefore required section 175A maintenance plans to include contingency measures that a state could implement quickly in response to a violation of a standard. The notion that the EPA's approval of a maintenance plan must be the last word with regard to the contents of a state's SIP simply does not comport with the framework Congress established in the CAA for redesignations. The EPA has continuing authority and responsibility to assure that a state's SIP meets CAA

Redesignation of the Phoenix-Mesa Nonattainment Area to Attainment for the 1997 8-Hour Ozone Standard; Proposed rule," 79 FR 16734 at 16739 n.22 (March 26, 2014).

<sup>353</sup> See, e.g., 73 FR 22307 at 22312–13 (April 25, 2008) (proposed redesignation of San Joaquin Valley; the EPA concluded that section 110(a)(2)(D) transport requirements are not applicable under section 110(d)(3)(E)(v) because they "continue to apply to a state regardless of the designation of any one particular area in the state"); 62 FR 24826 at 24829–30 (May 7, 1997) (redesignation of Reading, Pennsylvania, Area; the EPA concluded that the additional controls required by section 184 were not "applicable" for purposes of section 107(d)(3)(E) because "they remain in force regardless of the area's redesignation status").

<sup>354</sup> See *Sierra Club v. EPA*, 375 F.3d 537 (7th Cir. 2004); *Wall v. EPA*, 265 F.3d 426, 438 (6th Cir. 2001). But see *Sierra Club v. EPA*, Nos. 12–3169, 12–3182, 12–3420 (6th Cir. Mar. 18, 2015), petition for reh'g en banc filed.

<sup>355</sup> 79 FR 55645 (September 17, 2014).

<sup>356</sup> *Id.* at 55648. The EPA notes that it has included the deficient SIP provisions that include the affirmative defenses in this action, thereby illustrating that it can take action to address a SIP deficiency separately from the redesignation action, where appropriate.

<sup>357</sup> See *Southwestern Pennsylvania Growth Alliance v. EPA*, 114 F.3d 984 (6th Cir. 1998) (Redesignation of Cleveland-Akron-Lorain area determined valid even though the Agency subsequently proposed a SIP call to require Ohio and other states to revise their SIPs to mitigate ozone transport to other states).

<sup>358</sup> See 77 FR 76883 (December 31, 2012).

<sup>359</sup> *Id.* at 76891–92.

<sup>360</sup> The EPA notes that the provisions at issue in the redesignation action are included in this SIP call, thus illustrating that the Agency can address these deficient provisions in a context other than a redesignation request.

<sup>361</sup> 74 FR 62717 (December 1, 2009).

requirements, even after approving a redesignation request for a particular NAAQS.

In conclusion, the EPA is not required to reevaluate the validity of all previously approved SIP provisions as part of a redesignation. The existence of provisions such as impermissible exemptions and affirmative defenses applicable during SSM events in an approved SIP does not preclude the EPA's determination that emission reductions that have provided for attainment and that will provide for maintenance of a NAAQS in a nonattainment area are "permanent and enforceable," as those terms are meant in section 107(d)(3), or that the state has met all applicable requirements under section 110 and part D relevant for the purposes of redesignation. Finally, if the EPA separately determines that the state's SIP is deficient after the redesignation of the area to attainment, the Agency can issue a SIP call requiring a corrective SIP revision. Redesignation of areas to attainment in no way relieves states of their continuing responsibilities to remove deficient SIP provisions from their SIPs in the event of a SIP call.

16. Comments that in issuing a SIP call the EPA is "dictating" to states how to regulate their sources and taking away their discretion to adopt appropriate control measures of their own choosing in developing a SIP.

*Comment:* Several commenters claimed that the EPA's SIP call action removes discretion that states would otherwise have under the CAA. Commenters claimed that the action has the effect of unlawfully directing states to impose a particular control measure by requiring the state to regulate all periods of operation for any source it chooses to regulate. Because the alternative emission limitations and work practice standards that the EPA asserts are necessary under the statutory definition of "emissions limitation" are not real options in some cases, the commenters claimed, the EPA's proposal is the type of mandate that the court in the *Virginia* decision found to have violated the CAA.<sup>362</sup> Other commenters also cited to the *Virginia* decision, as well as citing to the U.S. Supreme Court's decision in *Train v. NRDC*, in which the Court held that "so long as the ultimate effect of a State's choice of emissions limitations is compliance with the national standards, the State is at liberty to adopt whatever mix of emissions limitations it deems best suited to its particular situation."<sup>363</sup>

The commenters concluded that the EPA cannot prescribe the specific terms of SIP provisions applicable to SSM events absent evidence that the provisions undermine the NAAQS or are otherwise inconsistent with the Act.

Commenters claimed that states are provided substantial discretion under the Act in how to develop SIPs and that the EPA's SIP call action is inconsistent with this long-recognized discretion because it limits the states to one option: "Eliminate any consideration of unavoidable emissions during planned startups and shutdowns and adopt only an extremely limited affirmative defense for unavoidable emissions during a malfunction." The commenters claimed that other options available to states include "justifying existing provisions, adopting alternative numeric emission limitations, work practice standards, additional operational limitations, or revising existing numeric emission limitations and/or their associated averaging times to create a sufficient compliance margin for unavoidable SSM emissions."

The commenters further asserted that the EPA's February 2013 proposal contained inconsistent statements about how the Agency expects states to respond to the SIP call. For example, according to one commenter, the EPA states in one place that startup and shutdown emissions above otherwise applicable limits must be considered a violation yet elsewhere discusses the fact that states can adopt alternative emission limitations for startup and shutdown. The commenter also asserted that the EPA recommended that states could elect to adopt the an approach to emissions during startup and shutdown like that of the EPA's recent MATS rule but that the EPA then failed to explain that the MATS rule contains "exemptions" for emissions during startup and shutdown that apply so long as the source meets the general work practice standards in the rule. This commenter claimed that the EPA's own approach is inconsistent with statements in the February 2013 proposal that states should treat all startups and shutdowns as "normal operations."

*Response:* The EPA disagrees with the commenter's claims that the SIP call violates the structure of "cooperative federalism" that Congress enacted for the SIP program in the CAA. Under this structure, the EPA establishes NAAQS and reviews state plans to ensure that they meet the requirements of the CAA. States take primary responsibility for developing plans to attain and maintain the NAAQS, but the EPA is required to step in if states fail to adopt plans that

meet the statutory requirements. As the court in *Virginia* recognized, Congress gave states discretion in choosing the "mix of controls" necessary to attain and maintain the NAAQS. *See also Train v. NRDC*, 421 U.S. 60, 79, 95 (1975). The U.S. Supreme Court first recognized this program of cooperative federalism in *Train*, and the Court stated:

The Act gives the Agency no authority to question the wisdom of a State's choices of emissions limitations if they are part of a plan which satisfies the standards of § 110(a)(2) . . . [S]o long as the ultimate effect of a State's choice of emissions limitations is compliance with the national standards, the State is at liberty to adopt whatever mix of emissions limitations it deems best suited to its particular situation.

The issue in that case concerned whether changes to requirements that would occur before the area was required to attain the NAAQS were variances that should be addressed pursuant to the provision governing SIP revisions or were "postponements" that must be addressed under section 110(f) of the CAA of 1970, which contained prescriptive criteria. The court concluded that the EPA reasonably interpreted section 110(f) not to restrict a state's choice of the mix of control measures needed to attain the NAAQS and that revisions to SIPs that would not impact attainment of the NAAQS by the attainment date were not subject to the limits of section 110(f). While the court recognized that states had discretion in determining the appropriate emissions limitations, it also recognized that the SIP must meet the standards of section 110(a)(2). In *Virginia*, the issue was whether at the request of the Ozone Transport Commission the EPA could mandate that states adopt specific motor vehicle emission standards more stringent than those mandated by CAA sections 177 and 202 for regulating emissions from motor vehicles.

As the EPA has consistently explained in its SSM Policy, the Agency does not believe that exemptions from compliance with any applicable SIP emission limitation requirements during periods of SSM are consistent with the obligation of states in SIPs, including the requirements to demonstrate that plans will attain and maintain the NAAQS, protect PSD increments and improve visibility. If a source is free from any obligation during periods of SSM, there is nothing restraining those emissions and such emissions could cause or contribute to an exceedance or violation of the NAAQS. Moreover, neither the state nor citizens would have authority to take enforcement

<sup>362</sup> 108 F.3d at 1410.

<sup>363</sup> 421 U.S. 60, 79 (1975).

action regarding such emissions. Also, even if historically such excess emissions have not caused or contributed to an exceedance or violation, this would not mean that they could not do so at some time in the future. Finally, given that there are many locations where air quality is not monitored such that a NAAQS exceedance or violation could be observed, the inability to demonstrate that such excess emissions have not caused or contributed to an exceedance or violation would not be proof that they have not. Thus, the EPA has long held that exemptions from emission limitations for emissions during SSM events are not consistent with CAA requirements, including the obligation to attain and maintain the NAAQS and the requirement to ensure adequate enforcement authority.

Despite claims by the commenter to the contrary, the EPA has not mandated the specific means by which states should regulate emissions from sources during startup and shutdown events. Requiring states to ensure that periods of startup and shutdown are regulated consistent with CAA requirements is not tantamount to prescribing the specific means of control that the state must adopt. By the SIP call, the EPA has simply explained the statutory boundaries to the states for SIP provisions, and the next step is for the states to revise their SIPs consistent with those boundaries. States remain free to choose the "mix of controls," so long as the resulting SIP revisions meet CAA requirements. The EPA agrees with the commenter who notes several options available to the states in responding to the SIP call. The commenter stated that there are various options available to states, such as "adopting alternative numeric emission limitations, work practice standards, additional operational limitations, or revising existing numeric emission limitations and/or their associated averaging times to create a sufficient compliance margin for unavoidable SSM emissions." However, the state must demonstrate how that mix of controls for all periods of operation will ensure attainment and maintenance of the NAAQS or meet other required goals of the CAA relevant to the SIP provision, such as visibility protection. For example, if a state chooses to modify averaging times in an emission limitation to account for higher emissions during startup and shutdown, the state would need to consider and demonstrate to the EPA how the variability of emissions over that averaging period might affect attainment

and maintenance of a NAAQS with a short averaging period (e.g., how a 30-day averaging period for emissions can ensure attainment of an 8-hour NAAQS). One option noted by the commenter, "justifying existing provisions," does not seem promising, based on the evaluation that the EPA has performed as a basis for this SIP call action. If by justification, the commenter simply means that the state may seek to justify continuing to have an exemption for emissions during SSM events, the EPA has already determined that this is impermissible under CAA requirements.

The EPA regrets any confusion that may have resulted from its discussion in the preamble to the February 2013 proposal. The EPA's statement that startup and shutdown emissions above otherwise applicable limitations must be considered a violation is simply another way of stating that states cannot exempt sources from complying with emissions standards during periods of startup and shutdown. This is not inconsistent with the EPA's statement that states can develop alternative requirements for periods of startup and shutdown where emission limitations that apply during steady-state operations could not be feasibly met. In such a case, startup and shutdown emissions would not be exempt from compliance but rather would be subject to a different, but enforceable, standard. Then, only emissions that exceed such alternative emission limitations would constitute violations.

17. Comments that because areas are in attainment of the NAAQS, SIP provisions such as automatic exemptions for excess emissions during SSM events are rendered valid under the CAA.

*Comment:* Commenters argued that SSM exemptions should be permissible in SIP provisions applicable to areas designated attainment because, they asserted, there is evidence that the exemptions do not result in emissions that cause violations of the NAAQS. To support this contention, the commenters observed that a number of states with SSM exemptions in SIP provisions at issue in this SIP call are currently designated attainment in all areas for one or all NAAQS and also that some of these states had areas that previously were designated nonattainment for a NAAQS but subsequently have come into attainment. Thus, the commenters asserted, the SIP provisions that the EPA identified as deficient due to SSM exemptions must instead be consistent with CAA requirements because these states are in attainment. The commenters claimed that because these areas have shown they are able to attain

and maintain the NAAQS or to achieve emission reductions, despite SSM exemptions in their SIP provisions, the EPA's concerns with respect to SSM exemptions are unsupported and unwarranted. Based on the premise that SSM exemptions are not inconsistent with CAA requirements applicable to areas that are attaining the NAAQS, the commenters claimed that such provisions cannot be substantially inadequate to meet CAA requirements.

*Response:* The EPA disagrees with the commenters' view that, so long as the provisions apply in areas designated attainment, the CAA allows SIP provisions with exemptions for emissions during SSM events. The commenters based their argument on the incorrect premise that SIP provisions applicable to sources located in attainment areas do not also have to meet fundamental CAA requirements such as sections 110(a)(2)(A), 110(a)(2)(C) and 302(k). Evidently, the commenters were only thinking narrowly of the statutory requirements applicable to SIP provisions in SIPs for purposes of part D attainment plans, which are by design intended to address emissions from sources located in nonattainment areas and to achieve attainment of the NAAQS in such areas. The EPA does not interpret the fundamental statutory requirements applicable to SIP provisions (e.g., that they impose continuous emission limitations) to apply exclusively in nonattainment areas; these requirements are relevant to SIP provisions in general.

The statutory requirements applicable to SIPs are not limited to areas designated nonattainment. To the contrary, section 107(a) imposes the responsibility on each state to attain and maintain the NAAQS "within the entire geographic areas comprising such State." The requirement to maintain the NAAQS in section 107(a) clearly applies to areas that are designated attainment, including those that may previously have been designated nonattainment. Similarly, section 110(a)(1) explicitly requires states to have SIPs with provisions that provide for the implementation, maintenance and enforcement of the NAAQS. By inclusion of "maintenance," section 110(a)(1) clearly encompasses areas designated attainment as well as nonattainment. The SIPs that states develop must also meet a number of more specific requirements set forth in section 110(a)(2) and other sections of the CAA relevant to particular air quality issues (e.g., the requirements for attainment plans for the different NAAQS set out in more detail in part D). Among those basic requirements that



states must meet in SIPs are section 110(a)(2)(C), requiring a permitting program applicable to sources in areas designated attainment, and section 110(a)(2)(D)(i)(II), requiring SIP provisions to prevent interference with protection of air quality in areas designated attainment in other states. Part C, in turn, imposes additional requirements on states with respect to prevention of significant deterioration of air quality in areas designated attainment. Although the EPA agrees that the CAA distinguishes between, and imposes different requirements upon, areas designated attainment versus nonattainment, there is no indication that the statute distinguishes between the basic requirements for emission limitations in these areas, including that they be continuous.

Section 110(a)(2)(A) requires states to include “emission limitations” in their SIPs “as may be necessary or appropriate to meet applicable requirements of” the CAA. The EPA notes that the commenters have raised other arguments concerning the precise meaning of “necessary or appropriate” (see section VII.A.3 of this document), but in this context the Agency believes that because states are required to have SIPs that provide for “maintenance” of the NAAQS it is clear that the general requirements for emission limitations in SIPs are not limited to areas designated nonattainment. Section 110(a)(2)(A) contains no language distinguishing between emission limitations applicable in attainment areas and emission limitations applicable in nonattainment areas. Significantly, the definition of the term “emission limitation” in section 302(k) likewise makes no distinction between requirements applicable to sources in attainment areas versus nonattainment areas. The EPA sees no basis for interpreting the term “emission limitation” differently for attainment areas and nonattainment areas, with respect to whether such emission limitations must impose continuous controls on the affected sources. Most importantly, section 110(a)(2)(A) does explicitly require that any such emission limitations must “meet the applicable requirements” of the CAA, and the EPA interprets this to include the requirement that emission limitations apply continuously, *i.e.*, contain no exemptions for emissions during SSM events. This requirement applies equally in all areas, including attainment and nonattainment areas.

The EPA’s interpretation of the CAA in the SSM Policy has long extended to SIP provisions applicable to attainment areas as well as to nonattainment areas. Since at least 1982, the SSM Policy has

stated that SIP provisions with SSM exemptions are inconsistent with requirements of the CAA to provide both for attainment and maintenance of the NAAQS, *i.e.*, inconsistent with requirements applicable to both nonattainment and attainment areas.<sup>364</sup> Since at least 1999, the EPA’s SSM Policy has clearly stated that SIP provisions with SSM exemptions are inconsistent with protection of PSD increments in attainment areas.<sup>365</sup> The EPA provided its full statutory analysis with respect to SSM exemptions and CAA requirements applicable to areas designated attainment in the background memorandum accompanying the February 2013 proposal.<sup>366</sup>

Finally, the EPA disagrees with the commenters’ theory that, absent proof that the SIP deficiency has caused or will cause a specific violation of the NAAQS, the Agency lacks authority to issue a SIP call for SIP provisions that apply only in areas attaining the NAAQS. This argument is inconsistent with the plain language of section 110(k)(5). Section 110(k)(5) authorizes the EPA to issue a SIP call whenever the SIP is substantially inadequate to attain or maintain the NAAQS, to mitigate interstate transport or to comply with any other CAA requirement. The explicit reference to a SIP’s being inadequate to maintain the NAAQS clearly indicates that the EPA has authority to make a finding of substantial inadequacy for a SIP provision applicable to attainment areas, not only for a SIP provision applicable to nonattainment areas. In addition, section 110(k)(5) explicitly authorizes the EPA to issue a SIP call not only in instances related to a specific violation of the NAAQS but rather whenever the Agency determines that a SIP provision is inadequate to meet requirements related to attainment and maintenance of the NAAQS or any other applicable requirement of the Act, including when the provision is inadequate to meet the fundamental legal requirements applicable to SIP provisions. Were the EPA’s authority limited to issuing a SIP call only in the event an area was violating the NAAQS, section 110(k)(5) would not explicitly include requirements related to “maintenance” and would not explicitly include the statement “otherwise

comply with any requirement of [the CAA].”

18. Comments that the EPA’s initial approval of these deficient provisions, or subsequent indirect approval of them through action on other SIP submissions, establishes that these provisions meet CAA requirements.

*Comment:* A number of commenters argued that because the EPA initially approved the SIP provisions at issue in this rulemaking, this establishes that these provisions meet CAA requirements. Other commenters argued that subsequent actions on other SIP submissions in effect override the fact that the SIP provisions at issue are legally deficient. For example, an industry commenter asserted that there have been “dozens of instances where EPA has reviewed Alabama SIP revision submittals” and the EPA has never indicated “that it believed these rules to be inconsistent with the CAA.” Other state commenters made similar arguments suggesting that the EPA’s original approval of these provisions, and the fact that the EPA has not previously taken action to require states to revise them, indicates that they are not deficient.

*Response:* The EPA disagrees with these commenters. The fact that the EPA once approved a SIP provision does not mean that the SIP provision is *per se* consistent with the CAA, or consistent with the CAA notwithstanding any later legal or factual developments. This is demonstrated by the very existence of the SIP call provision in section 110(k)(5), whereby the EPA may find that an “applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant [NAAQS] . . . or to otherwise comply with any requirement of” the CAA. This SIP call authority expressly authorizes the EPA to direct a state to revise its SIP to remedy any substantial inadequacy, including failures to comply with legal requirements of the CAA. By definition, when the EPA promulgates a SIP call, this means that the Agency has previously approved the provision into the SIP, rightly or wrongly. The SIP call provision would be meaningless if a SIP provision were considered perpetually consistent with CAA requirements after it was originally approved, and merely because of that prior approval as commenters suggest. In the February 2013 proposal, the EPA acknowledged its own responsibility in approving provisions that were inconsistent with CAA requirements.

The EPA also disagrees with the argument that the Agency’s action on other intervening SIP submissions from a state over the years since the approval

<sup>364</sup> See 1982 SSM Guidance, Attachment at 1.

<sup>365</sup> See 1999 SSM Guidance at 2.

<sup>366</sup> See Memorandum, “Statutory, Regulatory, and Policy Context for this Rulemaking,” February 4, 2013, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0029.

of the original deficient SIP provision in some way negates the original deficiency. The industry commenter pointed to “dozens of instances where EPA reviewed Alabama SIP revision submittals” as times when the EPA should have addressed any SSM-related deficient SIP provisions. However, the EPA’s approval of other SIP revisions does not necessarily entail reexamination and reapproval of every provision in the SIP. The EPA often only examines the specific provision the state seeks to revise in the SIP submission without reexamining all other provisions in the SIP. The EPA sometimes broadens its review if commenters bring other concerns to the Agency’s attention during the rulemaking process that are relevant to the SIP submission under evaluation.

19. Comments that exemptions for excess emissions during exempt SSM events would not distort emissions inventories, SIP control measure development or modeling, because the EPA’s regulations and guidance concerning “rule effectiveness” adequately account for these emissions, and therefore the proposed SIP calls are not needed or justified.

*Comment:* One commenter argued that provisions allowing exemptions or affirmative defenses for excess emissions during startup and shutdown are consistent with a state’s authority under CAA section 110 and that this is evidenced by the fact that the EPA has issued guidance on “rule effectiveness” that plainly takes into account a “discount” factor in a state’s demonstration of attainment when it chooses to adopt startup/shutdown provisions. This commenter cited the EPA’s definition of “rule effectiveness” at 40 CFR 51.50 and EPA guidance on demonstrating attainment of PM<sub>2.5</sub> and regional haze air quality goals.<sup>367</sup>

*Response:* The EPA disagrees with the characterization in this comment of past EPA guidance and with the conclusion that the fact of the existence of EPA guidance on “rule effectiveness” would support the claim that the CAA provides authority for exemptions or affirmative defenses for excess emissions during startup and shutdown. The EPA’s definition of “rule effectiveness” at 40 CFR 51.50 does not refer to startup and

shutdown; it refers only to “downtime, upsets, decreases in control efficiencies, and other deficiencies in emission estimates,” and once defined the term “rule effectiveness” is not subsequently used within 40 CFR part 51 in any way that would indicate that it is meant to capture the effect of exemptions during startup and shutdown. The EPA guidance on demonstrating attainment of PM<sub>2.5</sub> and regional haze goals cited by the commenter also does not address rule effectiveness or excess emissions during startup and shutdown. The terms “startup” and “shutdown” do not appear in the attainment demonstration guidance. The EPA did issue a different guidance document in 1992 on rule effectiveness,<sup>368</sup> but that document focused only on the preparation of emissions inventories for 1990, not on demonstrating attainment of NAAQS or regional haze goals. Moreover, the 1992 guidance document addressed ways of estimating actual 1990 emissions in light of the likelihood of a degree of source noncompliance with applicable emission limitations, not on the emissions that would be permissible in light of the absence of a continuous emission limitation applicable during startup and shutdown. The terms “startup” and “shutdown” do not appear in the 1992 guidance. In 2005, the EPA replaced the 1992 guidance document on rule effectiveness as part of providing guidance for the implementation of the 1997 ozone and PM<sub>2.5</sub> NAAQS.<sup>369</sup> Like the 1992 guidance, the 2005 guidance associated “rule effectiveness” with the issue of noncompliance and did not provide any specific advice on quantifying emissions that could be legally emitted because of SSM exemptions in SIPs. To avoid misunderstanding, the 2005 guidance included a question and answer on startup and shutdown emissions to the effect that emissions during startup and shutdown should be included in “actual emissions.” This question and answer included the statement, “[L]ess preferably, [emissions during startup, shutdown, upsets and malfunctions] can be accounted for using the rule effectiveness adjustment procedures outlined in this guidance.” However, other than in this question and answer, the 2005 guidance does not mention emissions during startup and shutdown

events; it focuses on issues of noncompliance with applicable emission limitations. The fact that the 1992 guidance document did not intend for “rule effectiveness” to encompass SIP-exempted emissions during startup and shutdown, and that the 2005 guidance also did not, is confirmed by a statement in a more recent draft EPA guidance document:

In addition to estimating the actual emissions during startup/shutdown periods, another approach to estimate startup/shutdown emissions is to adjust control parameters via the emissions calculation parameters of rule effectiveness or primary capture efficiency. *Using these parameters for startup/shutdown adjustments is not their original purpose*, but can be a simple way to increase the emissions and still have a record of the routine versus startup/shutdown portions of the emissions. (Emphasis added.)<sup>370</sup>

Furthermore, as explained in the proposals for this action and in this document, the EPA believes that it is a fundamental requirement of the CAA that SIP emission limitations be continuous, which therefore precludes exemptions for excess emissions during startup and shutdown. At bottom, although it is true that these guidance documents indicated that one less preferable way to account for startup and shutdown emissions could be through the rule effectiveness analysis, this does not in any way indicate that exemptions from emissions limitations would be appropriate for such periods.

*Comment:* A commenter argued that the EPA has not shown any substantial inadequacy with respect to CAA requirements but that the closest the EPA comes to identifying a substantial inadequacy is in the EPA’s discussion of its concern regarding the impacts of SSM exemptions on the development of accurate emissions inventories for air quality modeling and other SIP planning. This commenter and another commenter in particular noted a passage in the February 2013 proposal that stated that emission limitations in SIPs are used to meet various requirements for attainment and maintenance of the NAAQS and that all of these uses typically assume continuous source compliance with emission limitations.<sup>371</sup> These commenters disagreed with the EPA’s statement that all of these uses typically assume continuous source compliance with

<sup>367</sup> The commenter appears to have been meaning to cite to the draft EPA guidance document “Draft Guidance for Demonstrating Attainment of Air Quality Goals for PM<sub>2.5</sub> and Regional Haze,” January 2, 2001. This draft guidance on PM<sub>2.5</sub> and Regional Haze was combined with similar guidance on ozone in the final guidance document “Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze,” April 2007, EPA-454/B-07-002.

<sup>368</sup> “Guidelines for Estimating and Applying Rule Effectiveness for Ozone/CO State Implementation Plan Base Year Inventories,” November 1992, EPA-452/JR-92.010.

<sup>369</sup> “Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations,” Appendix B, August 2005, EPA-454/R-05-001.

<sup>370</sup> “Draft Emissions Inventory Guidance for Implementation of Ozone [and Particulate Matter]\* National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations,” April 11, 2014, page 62.

<sup>371</sup> February 2013 proposal, 78 FR 12459 at 12485.

applicable emission limitations, and the commenters cited several EPA guidance documents and statements that, they believe, address SSM and ensure that states do not simply assume continuous compliance. These commenters in addition cited to footnote 4 of the EPA's 1999 SSM Guidance.<sup>372</sup> The commenters argued that as long as states are complying with the EPA's inventory and modeling rules and guidance, SSM exemptions and similar applicability provisions have no negative impact on SIP planning.

*Response:* The EPA acknowledges that the cited statement in the February 2013 proposal, that various types of required analysis used to develop SIPs or permits "typically assume continuous source compliance with emission limitations," was an oversimplification of a complex situation. However, the EPA disagrees with the commenters' assertion that the EPA's inventory rules and other guidance are sufficient to ensure that SSM exemptions, where they still exist in SIPs, have no negative impact on SIP planning. Also, if the EPA were to allow them, such exemptions could become more prevalent and have a larger negative effect. More importantly, regardless of how SSM exemptions may or may not negatively impact things like emissions inventories, as explained elsewhere in this document, the EPA believes that it is a fundamental requirement of the CAA that SIP emission limitations be continuous, which therefore precludes exemptions for excess emissions during SSM events.

Generally, the EPA's guidance and rules do not say that it is correct for estimates of source emissions used in SIP development to be based on an assumption of continuous compliance with the SIP emission limitations even if the SIP contains exemptions for SSM periods. Rather, the EPA has generally emphasized that SIPs and permits should be based on the best available information on actual emissions, including in most cases the effects of known or reasonably anticipatable noncompliance with emission limitations that do apply.<sup>373</sup> Because the

EPA's longstanding SSM Policy has interpreted the Act to prohibit exemptions during SSM events, it has not been a focus of EPA guidance to explain to states how to take account of such exemptions. As the commenters have pointed out, some aspects of some EPA guidance documents have some relationship to the issue of accounting for SSM exemptions. Nevertheless, taken together, the EPA's guidance does not and cannot ensure that emission estimates used in developing SIPs and permits correctly reflect actual emissions in all cases in which SSM exemptions still exist in SIPs, particularly for sources that, unlike all or most of the sources represented by these two commenters, are not subject to continuous emissions monitoring. For a source not subject to continuous emissions monitoring, when excess emissions during SSM events are exempted by a SIP—whether automatically, on a special showing or through director's discretion—it is much more likely that those emissions would not be quantified and reported to the air agency such that they could be accounted for in SIP and permit development. For example, when the SIP includes exemptions for excess emissions during SSM events, there may be no motive for a source to perform a special stack test during a SSM period in which there is no applicable emission limitation and possibly no legal basis for an air agency to require such a stack test. It would also be unusual to find well-documented emission factors for such transient operation that could be used in place of source-specific testing.

As explained in a response provided earlier in this document, the EPA guidance documents also cited by these commenters in fact do not address how the effect of exemptions in SIPs for excess emissions during startup and shutdown can be accounted for in an attainment or maintenance demonstration. The cited 1992 "rule effectiveness" guidance in regard to issues such as noncompliance in the form of non-operation of control equipment, malfunctions, poor maintenance and deterioration of control equipment was meant to address how the issues affected emissions in 1990, not in a future year when the NAAQS must be attained. The 2005 guidance also did not provide any particular advice on how "rule effectiveness" concepts could be used to estimate emissions during exempt SSM

type of analysis to consider excess emissions that are the result of poor maintenance, careless operation or other preventable conditions. See 40 CFR part 51, appendix W, section 8.1.2, footnote a.

periods. Given that the EPA's longstanding SSM Policy has been that exemptions for excess emissions during SSM events are not permissible, the EPA had no reason to provide guidance on how attainment demonstrations should account for such exemptions.

The commenters are right to infer that the EPA does believe that where exemptions for excess emissions during anticipatable events still remain in current SIPs, attainment demonstrations ideally should account for them. Indeed, the EPA's guidance has recommended that all emissions during startup and shutdown events be included in both historical and projected emissions inventories.<sup>374</sup> However, as long as exemptions for excess emissions during SSM events have the effect of making such excess emissions not be violations and thus not reportable as violations, it will be difficult for air agencies to have confidence that they have sufficient knowledge of the magnitude, location and timing of such emissions as would be needed to accurately account for those emissions in attainment demonstrations, especially for NAAQS with averaging periods of one day or less. The EPA has promulgated emissions inventory reporting rules, but these rules apply requirements to air agencies rather than to the sources that would have actual knowledge of startup and shutdown events and emissions. To make a complying inventory data submission to the EPA, an air agency does not have to obtain from sources information on the magnitude and timing of emissions during SSM events for which an exemption applies, and to the EPA's knowledge most air agencies do not obtain this information. The EPA's emissions inventory rules require the reporting of historical annual-total emissions only (and in some areas "typical" seasonal and/or daily emissions for certain pollutants), not day-to-day emissions. Actual emissions during SSM events should be included in these annual emissions. While data formats are available from the EPA to allow a state to segregate the total annual emissions during SSM events

<sup>372</sup> The EPA interprets the citation "*See supra* pp. 21–24" as being intended to refer to those pages of "Guidelines for Estimating and Applying Rule Effectiveness for Ozone/CO State Implementation Plan Base Year Inventories," November 1992, EPA–452/JR–92.010, which this commenter did not refer to by title.

<sup>373</sup> New source permitting under the PSD program is an exception to the principle that the effects of noncompliance should be included in estimates of source emissions. The air quality impact analysis for a proposed PSD permit is based on an assumption that the source will operate without malfunctions. However, it may be necessary in this

<sup>374</sup> For example, see "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations," Appendix B, August 2005, EPA–454/R–05–001. A recent draft EPA guidance on the preparation of emissions inventories for attainment demonstrations recognizes that, in contrast to startup and shutdown emissions, emissions during malfunctions are not predictable and do not need to be included in projected inventories for the future year of attainment. See "Draft Emissions Inventory Guidance for Implementation of Ozone [and Particulate Matter]\* National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations," April 11, 2014, page 62.

from annual emissions during other type of operation, to segregate the emissions is not a requirement and few states do so. Moreover, the EPA's emissions inventory rules require reporting on most sources only on an "every third year" basis, which means that unless an air agency has authority to and does require more information from sources than is needed to meet the air agency's reporting obligation to the EPA, the air agency will not be in a position to know whether and how, between the triennial inventory reports, excess emissions during startup and shutdown may be changing due to variations in source operation and possibly affecting attainment or maintenance. Thus, the EPA's emissions inventory rules provide air agencies only limited leverage in terms of ability to obtain detailed information from sources regarding the extent to which actual emissions during SSM events may be unreported in emissions inventories, due to SIP exemptions. The EPA believes that when exemptions for excess emissions during SSM events are removed from SIPs, thereby making high emissions during SSM events specifically reportable deviations from emission limitations for more sources than now report them as such, it will be easier for air agencies to understand the timing and magnitude of event-related emissions that can affect attainment and maintenance. However, this belief is not the basis for this SIP call action, only an expected useful outcome of it.

Footnote 4 of the EPA's 1999 SSM Guidance suggested that "[s]tates may account for [potential worst-case emissions that could occur during startup and shutdown] by including them in their routine rule effectiveness estimates." This statement in the 1999 document's footnote may seem at odds with the statement in this response that the "rule effectiveness" concept was not meant to embrace excess emissions during startup and shutdown that were allowed because of SIP exemptions. However, the footnote is attached to text that addresses "worst-case" emissions that are higher than allowed by the applicable SIP, because that text speaks about the required demonstration to support a SIP revision containing an affirmative defense for violations of applicable SIP emission limitations. Thus, estimates of such worst-case emissions would reflect the effects of noncompliance, which is within the intended scope of the EPA's "rule effectiveness" guidance. Footnote 4 was not referring to the issue of how to

account for the effect of SSM exemptions.<sup>375</sup>

*Comment:* A number of commenters stated their understanding that the EPA has proposed SIP calls as a way of improving air agencies' implementation of EPA-specified requirements in emissions inventory or modeling, and they stated that if this is the EPA's concern then the EPA should address the issue in that context.

*Response:* To clarify its position, the EPA explains here that while it believes that approvable SIP revisions in response to the proposed SIP calls will have the benefit of providing information on actual emissions during SSM events that can improve emissions inventories and modeling, the availability of this additional information is not the basis for the SIP calls that are being finalized. The EPA believes that it is a fundamental requirement of the CAA that SIP emission limitations be continuous, which therefore precludes exemptions for excess emissions during startup and shutdown.

*Comment:* An air agency commenter stated that facilities in its state are required to submit data on all annual emissions, including emissions from startup and shutdown operation (and malfunctions), as part of its annual emissions inventory, and that it takes these emissions into consideration as part of SIP development.

*Response:* The EPA appreciates the efforts of this commenter to develop SIPs that account for all emissions. However, these efforts and whatever degree of success the commenter enjoys do not change the fundamental requirement of the CAA that SIP emission limitations be continuous, which therefore precludes exemptions for excess emissions during startup and shutdown.

*Comment:* A commenter argued that even to the extent SSM emissions present some level of uncertainty in model-based air quality projections, that uncertainty is small compared to other sources of uncertainty in modeling analyses, and so SSM emissions will not have any significant impact on attainment demonstrations or any underlying air quality modeling analysis.

*Response:* In support of this very general statement, the commenter provided only its own assessment of its own experience and the similar opinion of unnamed permitting agencies. In any

<sup>375</sup> In light of the *NRDC v. EPA* decision, affirmative defense provisions are not allowed in SIPs any longer, so this aspect of the 1999 SSM Guidance is no longer relevant.

case, this SIP call action is not based on any EPA determination about how modeling uncertainties due to SSM exemptions in SIPs compare to other modeling uncertainties.

20. Comments that exemptions for excess emissions during SSM events are not a concern with respect to PSD and protection of PSD increments.

*Comment:* Commenters asserted that the EPA has not adequately explained the basis for its concerns about the impact of emissions during SSM events on PSD increments.

*Response:* The EPA disagrees. As explained in detail in the background memorandum included in the docket for this rulemaking,<sup>376</sup> CAA section 110(a)(2)(C) requires that a state's SIP must include a PSD program to meet CAA requirements for attainment areas.<sup>377</sup> In addition, section 161 explains that "[e]ach [SIP] shall contain emission limitations and such other measures as may be necessary . . . to prevent significant deterioration of air quality for such region . . . designated . . . as attainment or unclassifiable." Specifically, each SIP is required to contain measures assuring that certain pollutants do not exceed designated maximum allowable increases over baseline concentrations.<sup>378</sup> These maximum allowable increases are known as PSD increments. Applicable EPA regulations require states to include in their SIPs emission limitations and such other measures as may be necessary in attainment areas to assure protection of PSD increments.<sup>379</sup> Authorizing sources in attainment areas to exceed SIP emission limitations during SSM events compromises the protection of these increments.

The commenters' concerns seem to be focused on PSD permitting for individual sources rather than on emission limitations in SIPs. The commenters asserted that the EPA already adequately accounts for all emissions during SSM events when calculating the baseline and increment consumption and expressed concern about the potential for "double counting" of emissions by counting them both toward the baseline and against increment. The EPA agrees that

<sup>376</sup> See Memorandum, "Statutory, Regulatory, and Policy Context for this Rulemaking," February 4, in the rulemaking docket at EPA-HQ-OAR-2012-0322-0029.

<sup>377</sup> "Each implementation plan . . . shall . . . include a program to provide for . . . regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that [NAAQS] are achieved, including a permit program as required in . . . part C." CAA section 110(a)(2)(C).

<sup>378</sup> CAA section 163.

<sup>379</sup> See 40 CFR 51.166(c).

emissions should not be double-counted and has regulatory requirements in place to ensure that emissions are either attributed to the baseline or counted against increment but not both.<sup>380</sup> Nevertheless, permitting agencies base their calculations of both the baseline and increment consumption on air quality data representing actual emissions from sources.<sup>381</sup> As explained more fully in the background memorandum accompanying the February 2013 proposal, the EPA is concerned that as a result of SSM exemptions in SIPs, inventories of actual emissions often do not include an accurate accounting of excess emissions that occur during SSM events. Moreover, the models used to calculate increment consumption typically assume continuous source compliance with applicable emission limitations.<sup>382</sup> Authorizing exceedances of emission limitations during SSM events would compromise the accuracy of the projections made by these models. Accurate calculations of the baseline and increment consumption rely on the correct accounting of all emissions, including those occurring during SSM events. Without accurate data, the EPA cannot be certain that state agencies are calculating baseline or increment consumption correctly or that increments in attainment areas are not being exceeded. For the foregoing reasons, the EPA is concerned that SSM exemptions in SIPs compromise the ability of the PSD program to protect air quality increments.

21. Comments that because ambient air quality has improved over the duration of the CAA through various regulatory programs such as the Acid Rain Program, this disproves that SIP provisions including exemptions for excess emissions during SSM events pose any concerns with respect to

protection of public health and the environment.

*Comment:* Industry commenters claimed that because ambient air quality data show that air quality has been consistently improving over a period of years, this proves that exemptions for emissions during SSM events do not impede the ability of areas to attain and maintain the NAAQS. The commenters provided a chart showing percentage reduction in emissions of the various NAAQS pollutants ranging from 52 percent reduction in NO<sub>x</sub> between 1980 and 2010 to 83 percent reduction in direct PM<sub>10</sub> emissions for that same time period. The commenters further claimed that a significant portion of the recent emissions reductions have been achieved by electric utilities. The commenters also provided charts and graphs showing reductions in pollutants under the CAA Acid Rain Program. The commenters further claimed that the states in which they operate—Alabama, Florida, Georgia, Mississippi and North Carolina—are meeting the NAAQS, with isolated exceptions. The commenters further stated that, although the EPA recently has promulgated several new NAAQS, the attainment plans for those standards are not yet due, and thus the new standards cannot justify the SIP call. The commenters concluded by noting that the states' success in achieving the various NAAQS, even as the NAAQS have been strengthened, demonstrates that the existing SSM exemptions in SIP provisions identified by the EPA do not “place the NAAQS at risk.” Regarding visibility, the commenters noted that plans to show progress in meeting the regional haze goal were due in 2013 and that evidence shows that visibility is also improving notwithstanding the existing SSM exemptions.

*Response:* The EPA agrees that many areas in the U.S. have made great strides in improving ambient air quality under the CAA. However, excess emissions from sources during SSM events have the potential to undermine that progress and are also inconsistent with the requirements of the CAA, as discussed elsewhere in the February 2013 proposal and in this final action. The EPA notes that the fact that an area has attained the NAAQS does not demonstrate that emissions during SSM events do not have the potential to undermine attainment or maintenance of the NAAQS, interfere with protection of PSD increments or interfere with visibility. For certain pollutants, such as lead or SO<sub>2</sub>, a single source could have a single SSM event that could cause an exceedance of the NAAQS that would otherwise not have occurred. It is

through its SIP that a state demonstrates that it has in place an air quality management program that will attain and maintain the NAAQS on an ongoing basis, and so it is critical that the state, through its SIP provisions, can ensure that emissions during normal source operation including startup and shutdown events do not exceed levels relied on for purposes of developing attainment and maintenance plans. Similarly, SIP provisions designed to protect visibility must also meet requirements of the CAA, and exemptions for emissions during SSM events would likewise have the potential to undermine visibility objectives of the CAA. Thus, it is not appropriate to exempt emissions during these SSM events from compliance with emission limitations in SIPs. As explained in this final action, the state has flexibility in choosing how to regulate source during these periods of operation, and sources do not necessarily have to be subject to the same numerical emissions limitations or the same other control requirements during startup and shutdown that apply during other modes of operation. However, SIP emission limitations must be continuous, and thus sources must be subject to requirements that apply at all times including during startup and shutdown.

22. Comments that the EPA's position that SIP provisions such as automatic exemptions for excess emissions during SSM events hinder effective enforcement for violations is incorrect, because there have been a number of citizen suits brought under the CAA.

*Comment:* According to industry commenters, the EPA's argument that deficient SIP provisions concerning emissions during SSM events limit enforcement of violations of emissions limitations under sections 113 and 304 is inaccurate, because “the facts show that SSM provisions do not preclude or hinder enforcement of any CAA requirements.” The commenters provided a list of “recent” enforcement actions and asserted that “[t]he sheer number of cases demonstrates that the existing regulations provide ample opportunity for enforcement.” The commenters cited to litigation brought by citizen groups that the commenters asserted has resulted in settlements including “injunctive relief and supplemental environmental projects (“SEPs”) worth tens of millions, if not hundreds of millions, of dollars.” The commenters also cited to one example to suggest that “whereas EPA and/or States may use enforcement discretion” in certain types of cases, “citizen groups do not.”

<sup>380</sup> See 40 CFR 51.166 and 52.21.

<sup>381</sup> See CAA section 169(4) (defining baseline concentration); 40 CFR 51.166(b)(13)(i) (setting forth what is included in baseline concentration); 40 CFR 52.21(b)(13)(i) (same). The **Federal Register** document promulgating the revised PSD regulations also explained this point. In that document, the EPA explained, “[B]aseline concentrations reflect actual air quality in an area. Increment consumption or expansion is directly related to baseline concentration. Any emissions not included in the baseline are counted against the increment. The complementary relationship between the concepts supports using the same approach for calculating emissions contributions to each.” 45 FR 52676, 52718 (August 7, 1980). “Actual emissions” is defined in 40 CFR 51.166(b)(21)(i) and 52.21(b)(21)(i).

<sup>382</sup> See 45 FR 52717 (“increment consumption and expansion should be based primarily on actual emissions increases and decreases, which can be presumed to be allowable emissions for sources subject to source-specific emissions limitations.”).

*Response:* The EPA disagrees with the commenters' logic that the mere existence of enforcement actions negates the concern that deficient SIP provisions interfere with effective enforcement of SIP emission limitations. The EPA believes that deficient SIP provisions can interfere with effective enforcement by air agencies, the EPA and the public to assure that sources comply with CAA requirements, contrary to the fundamental enforcement structure provided in CAA sections 113 and 304. For example, automatic or discretionary exemption provisions for excess emissions during SSM events by definition completely eliminate the possibility of enforcement for what may otherwise be clear violations of emissions limitations during those times. Affirmative defense provisions purport to alter or eliminate the statutory jurisdiction of courts to determine liability or to impose remedies for violations. These types of provisions eliminate the opportunity to obtain injunctive relief or penalties that may be needed to ensure appropriate efforts to design, operate and maintain sources so as to prevent and to minimize excess emissions, protect the NAAQS and PSD increments and meet other CAA requirements. Similarly, the exemption of sources from liability for excess emissions during SSM events eliminates incentives to minimize emissions during those times. These exemptions thus reduce deterrence of future violations from the same sources or other sources during these periods.

In the February 2013 proposal, the EPA discussed in detail an enforcement case that illustrates and supports the Agency's position.<sup>383</sup> In that case, citizen suit plaintiffs sought to bring an enforcement action against a source for thousands of self-reported exceedances of emission limitations in the source's operating permit. The source asserted that those exceedances were not "violations," through application of a permit provision that mirrored an underlying Georgia SIP provision. The U.S. Court of Appeals for the Eleventh Circuit (Eleventh Circuit) ultimately determined that the provision created an "affirmative defense" for SSM emissions that shielded the source from liability for numerous violations. The court noted that even if the approved provision in Georgia's SIP was inconsistent with the EPA's guidance on the proper treatment of excess emissions during SSM events, the defendant could rely on the provision because the EPA had not taken action through

rulemaking to rectify any discrepancy.<sup>384</sup> In this final action on the Petition, the EPA has determined that the specific SIP provision at issue in that case is deficient for several reasons. Had that deficient SIP provision not been in the SIP at the time of the enforcement action, then the provision would not have had any effect on the outcome of the case. Instead, the courts would have evaluated the alleged violations and imposed any appropriate remedies consistent with the applicable CAA provisions, rather than in accordance with the SIP provision that imposed the state's enforcement discretion preferences on other parties contrary to their rights under the CAA.

As the outcome of this case demonstrates, the mere fact that a number of enforcement actions have been filed does not mean that the deficient SIP provisions identified by the EPA in this SIP call action do not hinder effective enforcement under sections 113 and 304. To the contrary, that case illustrates exactly how conduct that might otherwise be a clear violation of the applicable SIP emission limitations by a source was rendered immune from enforcement through the application of a provision that operated to excuse liability for violations and potentially allowed unlimited excess emissions during SSM events.

The commenters cited 15 other enforcement cases brought by government and citizen groups over a span of 17 years, but the commenters do not indicate whether any SIP provisions relevant to emissions during SSM events were involved, nor do the commenters indicate whether any provisions at issue in this SIP call action were involved in any of the enforcement cases it cited.<sup>385</sup> Even if an enforcement action has been initiated, the EPA's fundamental point remains: SIP provisions that exempt what would otherwise be a violation of SIP

emissions limitations can undermine effective enforcement during times when the CAA requires continuous compliance with such emissions limitations. By interfering with enforcement, such provisions undermine the integrity of the SIP process and the rights of parties to seek enforcement for violation of SIP emission limitations.

A number of commenters on the February 2013 proposal indicated that, from their perspective, a primary benefit of automatic or discretionary exemptions in SIP provisions applicable to emissions during SSM events is to shield sources from liability. Similarly, commenters on the SNPR indicated that, from their perspective, a key benefit of affirmative defense provisions is to prevent what is in their opinion inappropriate enforcement action for violations of SIP emission limitations during SSM events. The EPA does not agree that the purpose of SIP provisions should be to preclude or impede effective enforcement of SIP emission limitations. To the contrary, the potential for enforcement for violations of CAA requirements is a key component of the enforcement structure of the CAA. To the extent that commenters are concerned about inappropriate enforcement actions for conduct that is not in violation of CAA requirements, the EPA believes that the sources already have the ability to defend against any such invalid claims in court.

23. Comments that the EPA's alleged inclusion of "exemptions" or "affirmative defenses" in enforcement consent decrees negates the Agency's interpretation of the CAA to prohibit them in SIP provisions.

*Comment:* One industry commenter claimed that the EPA has itself recently promulgated an exemption for emissions during SSM events. The commenter cited an April 1, 2013, settlement agreement in a CAA enforcement case against Dominion Energy as an example. According to the commenter, this settlement agreement "provides allowances for excess emissions during startup and shutdown" and "allows an EGU to operate without the ESP when it is not practicable." The commenter characterized this as the creation of an exemption from the applicable emission limitations during startup and shutdown. The commenter further alleged that the settlement agreement "provides for an affirmative defense to stipulated penalties for excess emissions occurring during start up and shutdown." The commenter intended the fact that the EPA agrees to this type

<sup>384</sup> See *Sierra Club v. Georgia Power Co.*, 443 F.3d 1346 (11th Cir. 2006).

<sup>385</sup> Even if these cases did all involve SIP provisions relevant to SSM events, the sampling of cases cited by the commenter still do not prove the commenter's point. The commenter indicated that 11 of the 15 cited cases resulted in settlement. The EPA presumes that neither party admitted any fault in these settlements and it remains unknown whether the court would have found the existence of a violation. In addition, because these cases were settled, it is unknown whether exemption or affirmative defense provisions would have prevented the court from finding liability for violation of a CAA emissions limitation that would otherwise have applied. In one additional case cited by the commenter, the court determined that the defendant successfully asserted an affirmative defense to alleged violations of a 6-minute 40-percent opacity limit. The outcome of this case evidently supports the EPA's concerns about the impacts of such provisions.

<sup>383</sup> See February 2013 proposal, 78 FR 12459 at 12504-05.

of provision in an enforcement settlement agreement to establish that affirmative defense provisions must also be valid in SIP provisions so that sources can assert them in the event of any violation of SIP emission limitations.

*Response:* The EPA disagrees with the commenter concerning the EPA's purported creation of exemptions for SSM events in enforcement consent decrees or settlement agreements. Consent decrees or settlement agreements negotiated by the EPA to resolve enforcement actions do not raise the same concerns as automatic exemptions for excess emissions during SSM periods or any other provisions that the EPA has found substantially inadequate in this SIP call action.

The EPA has the authority to enter consent decrees and settlement agreements in its enforcement cases and uses this discretion to resolve these cases. Settlements aim to achieve the best possible result for a given case, taking into account its specific circumstances and risks, but are still compromises between the parties to the litigation.

The EPA also disagrees with comments that attempt to equate affirmative defense provisions in SIPs with affirmative defense clauses that the EPA and defendants agree to contractually in a consent decree or settlement agreement to resolve an enforcement case. Some consent decrees and settlement agreements that the EPA enters into contain provisions referred to as "affirmative defenses" that apply only with respect to whether a source must pay stipulated penalties specified in the consent decree or settlement agreement. However, the EPA does not believe these agreements are counter to CAA requirements. The provisions in these contractual agreements are distinguishable from affirmative defense provisions in SIPs for excess emissions during SSM events. Affirmative defenses to stipulated penalties apply only in the limited context of violations of the contract terms of the consent decree or settlement agreement.

Significantly, these affirmative defense provisions apply only to the stipulated penalties of the consent decree or settlement agreement and do not carry over for incorporation into the source's permit. Most importantly, these affirmative defense provisions do not affect the penalty for violations of CAA requirements in general or of SIP emission limitation violations in particular. Further, a consent decree is itself a court order, and where these provisions have been used in a consent decree they are sanctioned by the court

and cannot be seen as a compromise of the court's own jurisdiction or authority. Indeed, the specific consent decree cited by the commenter contains exactly these types of "affirmative defense" provisions that are applicable only to the stipulated penalties imposed contractually by the consent decree and that do not operate to create any other form of affirmative defense applicable more broadly.

The EPA's use of these provisions in enforcement consent decrees or settlement agreements is not inconsistent with the EPA's interpretation of the CAA to preclude such provisions in SIPs. The EPA interprets the CAA to preclude such affirmative defenses in SIP provisions because they purport to alter or eliminate the jurisdiction of courts to find liability or to impose remedies for CAA violations in the event of judicial enforcement. No such concern is presented by the types of provisions in consent decrees or settlement agreements raised by the commenters, because the terms of such agreements must be approved and sanctioned by a court.

24. Comments that the EPA should provide more than 18 months for the SIP call because state law administrative process can take longer than that.

*Comment:* Several state and industry commenters claimed that states will need longer than 18 months to submit SIPs in response to a SIP call. One state commenter argued generally that more time is needed for the state to "change rules and submit a proposed SIP revision" but did not provide any detail on how much more time is needed. The commenter concluded that a "total of five years" is needed for both the state to complete its actions and for facilities "to change operating procedures or add hardware." Another state commenter claimed states would need at least 3 years to submit revised plans and cited to 40 CFR 51.166(a)(6) as providing a 3-year window for submission of SIP revisions.

An industry commenter asserted that it has taken EPA numerous years to address the startup and shutdown provisions in its own MACT standards and that states will need a similar amount of time to "unspin" the SSM provisions from SIP emission limitations and replace them with new requirements. The commenter pointed to the difficulty of modifying multiple permits and source-specific or source-category specific regulations. The commenter urged the EPA to provide much more time than the 18 months allowed by statute for a SIP call through

"a transition period of a reasonable length far exceeding 48 months."

Another industry commenter stated that more time is necessary but recognized that the maximum statutory period is 18 months. The commenter supported the EPA's providing states with the full 18 months to submit SIP revisions, because that time is needed in order for the states to undertake the necessary technical analyses to support the SIP revisions and in order to allow for the state rulemaking processes.

*Response:* The EPA recognizes that rule development and the associated administrative processes can be complex and time-consuming for states and for the Agency. Thus, the EPA is providing the maximum period allowed under CAA section 110(k)(5)—18 months—for states to submit SIP revisions in response to the SIP call. The EPA does not have authority under the statute to provide states with a longer period of time to submit these SIP submissions. To assist states in responding to this SIP call, the EPA is providing updated and comprehensive guidance concerning CAA requirements applicable to SIP provisions with respect to emissions during SSM events. Ideally, this guidance will allow states and the EPA to address the existing deficiencies as efficiently as possible, given the statutory schedules applicable to both states and the Agency.

The commenter who cited to 40 CFR 51.166(a)(6) is incorrect that it provides authority for the EPA to grant states 3 years to correct SIPs in response to a SIP call. The regulatory provision cited by the commenter is part of the EPA's regulations for the PSD program and simply provides that if the EPA amends that section of the PSD regulations, then a state will have 3 years to make a SIP submission to revise its SIP to meet the new PSD requirements in response to such amendments. This final action does not amend the PSD regulations and 40 CFR 51.166(a)(6) is not implicated. Under CAA section 110(k)(5), the EPA is only authorized to provide a maximum period of 18 months for states to submit SIP revisions to rectify the SIP deficiencies.

25. Comments that EPA should issue an interim enforcement policy, with respect to enforcement between the time that states revise SIP requirements and source permits are revised to reflect those changes.

*Comment:* One commenter argued that if the EPA finalizes the proposed SIP call for provisions applicable to emissions during SSM events, it will take state regulators a significant period of time to "disaggregate" the effect of those deficient provisions on various



other SIP provisions and the requirements of source operating permits. Because these corrections to SIP provisions and permit requirements will take time to occur, the commenter asserted that “a transition period of reasonable length far exceeding 48 months will be needed to shield industry from enforcement.” The commenter thus requested that the EPA impose such a transition period. In addition, the commenter suggested that the EPA should create “an interim enforcement policy” to shield sources and allow reliance on affirmative defense provisions “even after SIPs are corrected until permits reflect those changes.” The commenter posed this request based upon concern that there will be industry confusion concerning what requirements apply to individual sources until permits are revised to reflect the correction of the deficient SIP provisions.

*Response:* The EPA agrees with the commenter that it will take time for states to make the necessary SIP revisions in response to this SIP call, for the EPA to evaluate and act upon those SIP submissions and subsequently for states or the Agency to revise operating permits in the ordinary course to reflect the corrected state SIPs. As explained in the February 2013 proposal, the EPA consciously elected to proceed via its SIP call authority under section 110(k)(5) and to provide the statutory maximum of 18 months for the submission of corrective SIP revisions. The EPA chose this path specifically in order to provide states with time to revise their deficient SIP provisions correctly and in the manner that they think most appropriate, consistent with CAA requirements. The EPA also explicitly acknowledged that during the pendency of the SIP revision process, and during the time that it will take for permit terms to be revised in the ordinary course, sources will remain legally authorized to emit in accordance with current permit terms.<sup>386</sup>

The EPA is in this final action reiterating that the issuance of the SIP call action does not automatically alter any provisions in existing operating permits. By design, sources for which emission limitations are incorporated in permits will thus have a *de facto* transition period during which they can take steps to assure that they will ultimately meet the revised SIP provisions (e.g., by changing their equipment or mode of operation to meet an appropriate emission limitation that applies during startup and shutdown

instead of relying on exemptions). Sources subject to permit requirements will thus have yet more time (beyond the 18 months allowed for the SIP revision in response to this SIP call action) over the permit review cycle to take steps to meet revised permit terms reflecting the revised SIP provisions. However, the EPA does not agree with the commenter that there is a need for a “transition period” to “shield” sources from enforcement. The EPA’s objective in this action is to eliminate impermissible SIP provisions that exempt emissions during SSM events or otherwise interfere with effective enforcement for violations that occur during such events. Further delaying the time by which sources will be expected to comply with SIP provisions that are consistent with CAA requirements is inappropriate. Moreover, the primary purpose of SIP provisions is not to shield sources from liability for violations of CAA requirements but rather to assure that sources are required to meet CAA requirements.

The EPA shares the commenter’s concern that there is the potential for confusion on the part of sources or other parties in the interim period between the correction of deficient SIP provisions and the revision of source operating permits in the ordinary course. However, the EPA presumes that most sources required to have a permit, especially a title V operating permit, are sufficiently sophisticated and aware of their legal rights and responsibilities that the possibility for confusion on the part of sources should be very limited. Likewise, by making clear in this final action that sources will continue to be authorized to operate in accordance with existing permit terms until such time as the permits are revised after the necessary SIP revision, the EPA anticipates that other parties should be on notice of this fact as well. Regardless of the potential for confusion by any party, the EPA believes that the legal principle of the “permit shield” is well known by regulated entities, regulators, courts and other interested parties. Accordingly, the EPA is not issuing any “enforcement policy” in connection with this SIP call action.

26. Comments that a SIP call directing states to eliminate exemptions for excess emissions during SSM events is a “paper exercise” or “exalts form over substance.”

*Comment:* A number of commenters argued that by requiring states to correct deficient SIP provisions, such as by requiring removal of exemptions for emissions during SSM events, this SIP call action will not result in any environmental benefits. For example,

state commenters claimed that they will not be able simply to revise regulations to eliminate startup and shutdown exemptions. Instead, the commenters claimed, the states will need to revise the emissions limitations completely in order to take into account the EPA’s interpretation of the CAA that such exemptions are impermissible. The commenters asserted that rewriting the state regulations will produce no reduction in emissions or improvement in air quality and will merely impose burdens upon states to change existing regulations. The implication of the commenters’ argument is that states will merely revise SIP emission limitations to allow the same amount of emissions during SSM events by some other means, rather than by establishing emission limitations that would encourage sources to be designed, operated and maintained in a fashion that would better control those emissions.

*Response:* The EPA does not agree with the commenters’ assertion that revisions to the affected SIP provisions in response to this SIP call action will produce no emissions reductions or improvements in air quality. The EPA recognizes that some states may elect to develop revised emission limitations that provide for alternative numerical limitations, control technologies or work practices applicable during startup and shutdown that differ from requirements applicable during other modes of source operation. Other states may elect to develop completely revised emission limitations and elevate the level of the numerical emission limitation that applies at all times to account for greater emissions during startup and shutdown. However, any such revised emission limitations must comply with applicable substantive CAA requirements relevant to the type of SIP provision at issue, e.g. be RACM and RACT for sources located in nonattainment areas, and must meet other requirements for SIP revisions such as in sections 110(k)(3), 110(l) and 193.

The EPA believes that revision of the existing deficient SIP provisions has the potential to decrease emissions significantly in comparison to existing provisions, such as those that authorize unlimited emissions during startup and shutdown. Elimination of automatic and director’s discretion exemptions for emissions during SSM events should encourage sources to reduce emissions during startup and shutdown and to take steps to avoid malfunctions. Elimination of inappropriate enforcement discretion provisions and affirmative defense provisions should

<sup>386</sup> See February 2013 proposal, 78 FR 12459 at 12482.

provide increased incentive for sources to be properly designed, operated and maintained in order to reduce emissions at all times. The EPA also anticipates that revision of older SIP emission limitations in light of more recent technological advances in control technology, and in light of more recent NAAQS, has the potential to result in significant emission control and air quality improvements. In any event, by bringing these provisions into compliance with CAA requirements, the EPA believes that the resulting SIP provisions will support the fundamental integrity of the SIP process and structure, both substantively and with respect to enforceability.

27. Comments that the EPA should make its interpretation of the CAA with respect to SSM exemptions applicable only “prospectively” and not require states to correct existing deficient provisions.

*Comment:* Commenters argued that the EPA should not issue a SIP call to states for existing SIP provisions and should only require states to comply with its interpretations of the CAA “prospectively.” One commenter argued that the SIP provisions at issue in this SIP call action were approved by the EPA in the past and have largely been “upheld through several EPA refinements and guidance on SSM since then.” The commenter estimated that the proposed SIP call would require states to reestablish emission limits for thousands of existing sources or could require existing sources to comply with emission limitations that did not originally take into account emissions during SSM events. The commenter characterized the EPA’s action on the Petition as a change of policy with which the EPA should only require states to meet prospectively, putting states “on notice” that the EPA will evaluate future SIP submissions under a different test applicable only to new sources going forward.

Other commenters argued that the EPA cannot require states to revise their SIP provisions if this would have the effect of making existing sources have to comply with the revised SIP. According to the commenters, existing sources should be “grandfathered” and should not have to change their control strategies or modes of operation to meet the revised SIP requirements. The commenters asserted that issuance of a SIP call without grandfathering existing sources would “retroactively” require sources to comply with the new SIP provisions and “suddenly” render sources noncompliant, even though they were in compliance with the SIP when they were originally designed, financed

and built. The commenter claimed that the SIP call would “change the legal structure for commercial transactions that have already taken place.” The thrust of the commenters’ argument is that sources, once built, should never be subjected to any additional pollution control requirements once they are in existence.

*Response:* The EPA disagrees with the commenters’ suggestions for multiple reasons. At the outset, the EPA notes that the only significant actual “change” in the Agency’s SSM Policy in this action is the determination that affirmative defense provisions are not permissible in SIP provisions. Since the 1999 SSM Guidance, the EPA had interpreted the CAA to allow such affirmative defense provisions, so long as they were limited only to civil penalties and very narrowly drawn consistent with criteria recommended by the Agency. As fully explained in section IV of this document, however, the EPA has determined in light of the court’s decision in *NRDC v. EPA* that the CAA does not permit SIP provisions that operate to alter or eliminate the jurisdiction of the courts to determine liability and impose remedies in judicial enforcement actions.<sup>387</sup> In other respects, this action primarily consists of the EPA’s taking action to assure that SIP provisions are consistent with the CAA as the Agency has interpreted it in the SSM Policy for many years.

In addition, it is not appropriate for the EPA to allow states to retain deficient SIP provisions that would continue to excuse existing sources from complying with the revised SIP provisions in perpetuity or that would only require that future sources comply with such revised SIP provisions. The commenters advocate for “grandfathering” that would authorize current sources to continue to operate under existing deficient SIP provisions (e.g., with exemptions for SSM emissions or with affirmative defense provisions) while requiring only new sources to comply with revised SIP provisions that meet CAA requirements. The EPA understands the practical reasons why the commenters make this suggestion, but such an approach would be grossly unfair both to new sources and to the communities affected by emissions from the old sources, as well as flatly inconsistent with the

requirements of the CAA for SIP provisions. Existing sources will not be required to comply with the revised SIP emission limitations until the SIPs are updated, and if they are subject to permit requirements the sources may continue to operate consistent with those permits until the operating permits are revised to reflect the revised SIP requirements, but after that time current sources will be required to comply. Thus, sources will not immediately be in noncompliance with any requirements. The EPA has authority to issue a SIP call at any time that it determines a SIP provision is substantially inadequate, even if it mistakenly thought that the SIP provision was adequate at some time in the past. Sources will be on notice of the SIP call and the state’s administrative process to respond to it long before they will be required to comply with a revised SIP provision, and those sources will have ample opportunity to participate in the rulemakings establishing new requirements at both the state and federal level.

Finally, the EPA notes, the need for states to establish new emission limitations and change permit terms for many sources should not be viewed as an unusual occurrence. The need to reexamine existing SIP provisions and permit terms applicable to sources in response to this SIP call action is comparable to the process that states would undertake to update their SIPs as necessary to meet new and evolving CAA requirements, including future revised NAAQS. For example, under section 110(a)(1) and section 110(a)(2) states are already required to reexamine and potentially to revise their SIP provisions whenever the EPA promulgates a new or revised NAAQS. States already need to reexamine emission limitations required by section 110(a)(2)(A) and other relevant sections of the CAA in their SIPs on a regular basis as the NAAQS are revised (e.g., the potential need to revisit what is RACT for a specific source category with respect to a new NAAQS), as new legal requirements are created (e.g. the potential need to address interstate transport including compliance with any applicable FIP addressing a SIP deficiency with respect to this issue), or as new emissions control technologies are developed (e.g., what is RACT for a pollutant may evolve with technological developments). Thus, as a general matter, states already engage in periodic review of their SIP provisions on a regular basis, and the potential need to update the emissions limitations applicable to sources and thereafter the

<sup>387</sup> The EPA notes, however, that many of the affirmative defense type provisions at issue in this action were also not consistent with the Agency’s interpretation of the CAA in the 1999 SSM Guidance. Thus, even in the absence of the *NRDC v. EPA* decision, these provisions were not consistent with the EPA’s prior interpretation of the CAA for such provisions.

need to update the permits applicable to those sources is part of that process. This SIP call action simply directs the affected states to address specific deficiencies in their SIP provisions as part of this normal evolutionary process.

28. Comments that directing states to correct their existing SIP provisions will require many sources to change terms of their operating permits.

*Comment:* A number of commenters opposed the February 2013 proposal because of the administrative burden the action would impose on air agencies and sources. Commenters asserted that requiring states to remove affirmative defense provisions for startup and shutdown from SIPs and to develop alternative emission limitations for such periods of operation instead is unreasonable. Other commenters argued that requiring removal of the deficient SIP provisions would impose enormous and time-consuming burdens on permitting authorities and the regulated community associated with the development of new or revised emissions limitations for startup and shutdown, the revision of SIPs and the revision of permits to incorporate such revised emission limitations. Another commenter asserted that sources only accepted numerical limits in permits with the understanding that they also had the benefit of affirmative defenses in the event of exceedances of those numerical emission limits during periods of SSM. The commenter thus argued that sources would seek to revise the permit limits in order to account for the absence of such affirmative defenses.

*Response:* The EPA acknowledges the concerns raised by commenters concerning the need for air agencies to revise the deficient SIP provisions at issue in this action, as well as the need for the EPA to review the resulting SIP revisions. The EPA does not agree, however, with the commenters' argument that the need for these administrative actions is a justification for leaving the deficient provisions unaddressed.

The EPA also acknowledges that the SIP revisions initiated by this SIP call action will result in the removal of deficient provisions such as automatic and discretionary SSM exemptions, overly broad enforcement discretion provisions and affirmative defense provisions. These SIP revisions will ultimately need to be reflected in revised operating permit terms for sources. This SIP call action will not, however, have an automatic impact on any permit terms and conditions, and the resource burden to revise permits will be spread over many years. After a

state makes the necessary revisions to its SIP provisions, any needed revisions to operating permits to reflect the revised SIP provisions will occur in the ordinary course as the state issues new permits or reviews and revises existing permits. For example, in the case of title V operating permits, permits with more than 3 years remaining will be reopened to add new applicable requirements within 18 months of the promulgation of the requirements. If a permit has less than 3 years remaining, the new applicable requirement will be added at renewal.<sup>388</sup>

#### **IX. What is the EPA's final action for each of the specific SIP provisions identified in the Petition or by the EPA?**

##### *A. Overview of the EPA's Evaluation of Specific SIP Provisions*

In reviewing the Petitioner's concerns with respect to the specific SIP provisions identified in the Petition, the EPA notes that most of the provisions relate to a small number of common issues. Many of these provisions are as old as the original SIPs that the EPA approved in the early 1970s, when the states and the EPA had limited experience in evaluating the provisions' adequacy, enforceability and consistency with CAA requirements.

In some instances the EPA does not agree with the Petitioner's reading of the provision in question, or with the Petitioner's conclusion that the provision is inconsistent with the requirements of the CAA. However, given the common issues that arise for multiple states in the Petition as well as in the EPA's independent evaluation, there are some overarching conceptual points that merit discussion in general terms. Thus, this section IX.A of the document provides a general discussion of each of the overarching points, including a summary of what the EPA proposed to determine with respect to the relevant SIP provisions collectively. The EPA received comments on the proposed determinations from affected states, the Petitioner and other commenters. A detailed discussion of the comments received with the EPA's responses is provided in the Response to Comment document available in the docket for this rulemaking.

Sections IX.B through IX.K of this document name the specific SIP provisions identified in the Petition or by the EPA, including a summary of what the EPA proposed and followed by the EPA's stated final action with respect to each SIP provision.

<sup>388</sup> See 40 CFR 70.7(f)(1)(i).

##### **1. Automatic Exemption Provisions**

A significant number of provisions identified by the Petitioner pertain to existing SIP provisions that create automatic exemptions for excess emissions during periods of SSM. Some of these provisions also pertain to exemptions for excess emissions that occur during maintenance, load change or other types of normal source operation. These provisions typically provide that a source subject to a specific SIP emission limitation is exempted from compliance during SSM, so that the excess emissions are defined as not violations. Most of these provisions are artifacts of the early phases of the SIP program, approved before state and EPA regulators recognized the implications of such exemptions. Whatever the genesis of these existing SIP provisions, however, these automatic exemptions from emission limitations are not consistent with the CAA, as the EPA has stated in its SSM Policy since at least 1982.

After evaluating the Petition, the EPA proposed to determine that a number of states have existing SIP provisions that create impermissible automatic exemptions for excess emissions during malfunctions or during startup, shutdown or other types of normal source operation. In those instances where the EPA agreed that a SIP provision identified by the Petitioner contained such an exemption contrary to the requirements of the CAA, the EPA proposed to grant the Petition and accordingly to issue a SIP call to the appropriate state.

##### **2. Director's Discretion Exemption Provisions**

Another category of problematic SIP provision identified by the Petitioner is exemptions for excess emissions that, while not automatic, are exemptions for such emissions granted at the discretion of state regulatory personnel. In some cases, the SIP provision in question may provide some minimal degree of process and some parameters for the granting of such discretionary exemptions, but the typical provision at issue allows state personnel to decide unilaterally and without meaningful limitations that what would otherwise be a violation of the applicable emission limitation is instead exempt. Because the state personnel have the authority to decide that the excess emissions at issue are not a violation of the applicable emission limitation, such a decision would transform the violation into a nonviolation, thereby barring enforcement by the EPA or others.

The EPA refers to this type of provision as a “director’s discretion” provision, and the EPA interprets the CAA generally to forbid such provisions in SIPs because they have the potential to undermine fundamental statutory objectives such as the attainment and maintenance of the NAAQS and to undermine effective enforcement of the SIP. As described in sections VII.C and VIII.A.3 of this document, unbounded director’s discretion provisions purport to allow unilateral revisions of approved SIP provisions without meeting the applicable statutory substantive and procedural requirements for SIP revisions. The specific SIP provisions at issue in the Petition are especially inappropriate because they purport to allow discretionary creation of case-by-case exemptions from the applicable emission limitations, when the CAA does not permit any such exemptions in the first instance. The practical impact of such provisions is that in effect they transform an enforcement discretion decision by the state (e.g., that the excess emission from a given SSM event should be excused for some reason) into an exemption from compliance that also prevents enforcement by the EPA or through a citizen suit. The EPA’s longstanding SSM Policy has interpreted the CAA to preclude SIP provisions in which a state’s exercise of its own enforcement discretion bars enforcement by the EPA or through a citizen suit. Where the EPA agreed that a SIP provision identified by the Petitioner contained such a discretionary exemption contrary to the requirements of the CAA, the EPA proposed to grant the Petition and to call for the state to rectify the problem.

### 3. State-Only Enforcement Discretion Provisions

The Petitioner identified existing SIP provisions in many states that ostensibly pertain to parameters for the exercise of enforcement discretion by state personnel for violations due to excess emissions during SSM events. The EPA’s SSM Policy has consistently encouraged states to utilize traditional enforcement discretion within appropriate bounds for such violations and, in the 1982 SSM Guidance, explicitly recommended criteria that states might consider in the event that they elected to formalize their enforcement discretion with provisions in the SIP. The intent has been that such enforcement discretion provisions in a SIP would be “state-only,” meaning that the provisions apply only to the state’s own enforcement personnel and not to the EPA or to others.

The EPA determined that a number of states have SIP provisions that, when evaluated carefully, could reasonably be construed to allow the state to make enforcement discretion decisions that would purport to foreclose enforcement by the EPA under CAA section 113 or by citizens under section 304. In those instances where the EPA agreed that a specific provision could have the effect of impeding adequate enforcement of the requirements of the SIP by parties other than the state, the EPA proposed to grant the Petition and to take action to rectify the problem. By contrast, where the EPA’s evaluation indicated that the existing provision on its face or as reasonably construed could not be read to preclude enforcement by parties other than the state, the EPA proposed to deny the Petition, and the EPA invited comment on this issue in particular to assure that the state and the EPA have a common understanding that the provision does not have any impact on potential enforcement by the EPA or through a citizen suit. This process was intended to ensure that there is no misunderstanding in the future that the correct reading of the SIP provision would not bar enforcement by the EPA or through a citizen suit when the state elected to exercise its own enforcement discretion.

In the February 2013 proposal, the EPA noted that another method by which to eliminate any potential ambiguity about the meaning of these enforcement discretion provisions would be for the state to revise its SIP to remove the provisions. Because these provisions are only applicable to the state, the EPA’s view was, and still is, that the provisions need not be included within the SIP. Thus, the EPA supports states that elect to revise their SIPs to remove these provisions to avoid any unnecessary confusion.

### 4. Affirmative Defense Provisions

The Petitioner asked the EPA to rescind its SSM Policy element that interpreted the CAA to allow SIPs to include affirmative defenses for violations due to excess emissions during any type of SSM events. Related to this request, the Petitioner asked the EPA to find that states with SIPs containing an affirmative defense to monetary penalties for excess emissions during SSM events are substantially inadequate because they do not comply with the CAA. If the EPA were to deny the Petitioner’s request that the EPA revise its interpretation of the CAA, the Petitioner asked that the EPA in the alternative require states with SIPs that contain such affirmative defense provisions to revise them so that they

are consistent with the EPA’s 1999 SSM Guidance for excess emissions during SSM events and to issue a SIP call to states with provisions inconsistent with the EPA’s interpretation of the CAA.

The Petitioner drew no distinction between affirmative defense provisions for malfunctions versus affirmative defense provisions for startup and shutdown or other normal modes of operation. As explained in section IV.B of the February 2013 proposal, the EPA did make such distinction in its proposed response to the Petition, at that time proposing to revise its SSM Policy to reflect an interpretation of the CAA that affirmative defense provisions applicable during startup and shutdown were not appropriate but reasoning that affirmative defense provisions remained appropriate for violations when due to malfunction events. Thus, in the February 2013 proposal, the EPA proposed to issue a SIP call to a state to rectify a problem with an affirmative defense provision only if the provision included an affirmative defense that was applicable to excess emissions during startup and shutdown or included an affirmative defense that was applicable to excess emissions during malfunctions but was inconsistent with the criteria recommended in the EPA’s SSM Policy.

Subsequent to that February 2013 proposal, a federal court ruled that the CAA precludes authority of the EPA to create affirmative defense provisions applicable to private civil suits. The *NRDC v. EPA* decision pertained to a challenge to the EPA’s NESHAP regulations issued pursuant to CAA section 112 to regulate hazardous air pollutants from sources that manufacture Portland cement.<sup>389</sup> As explained in detail in section V of the SNPR, the court’s decision in *NRDC v. EPA* compelled the Agency to revise its interpretation of the CAA concerning the legal basis for affirmative defense provisions. As a result, the EPA proposed in the SNPR to further revise its SSM Policy with respect to affirmative defense provisions applicable to excess emissions during SSM events (as described in section V of the SNPR) and to apply its revised interpretation of the CAA to specific provisions in the SIPs of particular states (as described in section VII of the SNPR).

For some of the affirmative defense provisions identified by the Petitioner, the EPA in the SNPR re-proposed granting of the Petition but proposed a revised basis for its proposed findings of inadequacy and SIP calls. For other affirmative defense provisions identified

<sup>389</sup> *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014).

by the Petitioner, the EPA in the SNPR reversed its prior proposed denial of the Petition, and it newly proposed findings of inadequacy and SIP calls. Further, for some affirmative defense provisions that were not explicitly identified by the Petitioner, the EPA in the SNPR proposed findings of inadequacy and SIP calls for additional affirmative defense provisions that were not explicitly identified by the Petitioner.

#### *B. Affected States in EPA Region I*

##### *1. Maine*

As described in section IX.B.1 of the February 2013 proposal, the Petitioner first objected to a specific provision in the Maine SIP that provides an exemption for certain boilers from otherwise applicable SIP visible emission limits during startup and shutdown (06–096–101 Me. Code R. § 3). Second, the Petitioner objected to a provision that empowers the state to “exempt emissions occurring during periods of unavoidable malfunction or unplanned shutdown from civil penalty under section 349, subsection 2” (06–096–101 Me. Code R. § 4).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 06–096–101 Me. Code R. § 3 and 06–096–101 Me. Code R. § 4.

Consequently, the EPA proposed to find that 06–096–101 Me. Code R. § 3 and 06–096–101 Me. Code R. § 4 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 06–096–101 Me. Code R. § 3 and 06–096–101 Me. Code R. § 4. Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call to Maine to correct its SIP with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Maine SIP that the EPA received and considered during the development of this rulemaking.

##### *2. New Hampshire*

As described in section IX.B.2 of the February 2013 proposal, the Petitioner objected to two generally applicable provisions in the New Hampshire SIP that allow emissions in excess of otherwise applicable SIP emission limitations during “malfunction or breakdown of any component part of the

air pollution control equipment.” The Petitioner argued that the challenged provisions provide an automatic exemption for excess emissions during the first 48 hours when any component part of air pollution control equipment malfunctions (N.H. Code R. Env-A 902.03) and further provide that “[t]he director may . . . grant an extension of time or a temporary variance” for excess emissions outside of the initial 48-hour time period (N.H. Code R. Env-A 902.04). Second, the Petitioner objected to two specific provisions in the New Hampshire SIP that provide source-specific exemptions for periods of startup for “any process, manufacturing and service industry” (N.H. Code R. Env-A 1203.05) and for pre-June 1974 asphalt plants during startup, provided they are at 60-percent opacity for no more than 3 minutes (N.H. Code R. Env-A 1207.02).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to N.H. Code R. Env-A 902.03, N.H. Code R. Env-A 1203.05 and N.H. Code R. Env-A 902.04. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to N.H. Code R. Env-A 1207.02.

Consequently, the EPA proposed to find that N.H. Code R. Env-A 902.03, N.H. Code R. Env-A 1203.05 and N.H. Code R. Env-A 902.04 were substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions. Through comments submitted on the February 2013 proposal, however, the EPA has ascertained that the versions of N.H. Code R. Env-A 902.03 and N.H. Code R. Env-A 902.04 identified in the Petition and evaluated in the February 2013 proposal are no longer in the state’s SIP. In November 2012, the EPA approved a SIP revision that replaced N.H. Code R. Env-A 902.03 and N.H. Code R. Env-A 902.04 with a new version of Env-A 900 that does not contain the deficient provisions identified in the February 2013 proposal.<sup>390</sup> These provisions no longer exist for purposes of state or federal law. In addition, the EPA has determined that the version of N.H. Code R. Env-A 1203.05 identified in the Petition and the February 2013 proposal is no longer in the state’s SIP as a result of another SIP revision.<sup>391</sup> Because

<sup>390</sup> See “Approval and Promulgation of Air Quality Implementation Plans; New Hampshire; Reasonably Available Control Technology for the 1997 8-Hour Ozone Standard; Direct final rule,” 77 FR 66388 (November 5, 2012).

<sup>391</sup> See “Approval and Promulgation of Air Quality Implementation Plans; New Hampshire;

these three provisions are no longer components of the EPA-approved SIP for the state of New Hampshire, the Petition is moot with respect to these provisions and there is no need for a SIP call with respect to these no longer extant provisions.

In this final action, the EPA is denying the Petition with respect to N.H. Code R. Env-A 902.03, N.H. Code R. Env-A 902.04, N.H. Code R. Env-A 1203.05 and N.H. Code R. Env-A 1207.02. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the New Hampshire SIP that the EPA received and considered during the development of this rulemaking.

##### *3. Rhode Island*

As described in section IX.B.3 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Rhode Island SIP that allows for a case-by-case petition procedure whereby a source can obtain a variance from state personnel under R.I. Gen. Laws § 23–23–15 to continue to operate during a malfunction of its control equipment that lasts more than 24 hours, if the source demonstrates that enforcement would constitute undue hardship without a corresponding benefit (25–4–13 R.I. Code R. § 16.2).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 25–4–13 R.I. Code R. § 16.2.

Consequently, the EPA proposed to find that 25–4–13 R.I. Code R. § 16.2 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to 25–4–13 R.I. Code R. § 16.2. Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Rhode Island SIP that the EPA received and considered during the development of this rulemaking.

Reasonably Available Control Technology Update To Address Control Techniques Guidelines Issued in 2006, 2007, and 2008; Direct final rule,” 77 FR 66921 (November 8, 2012).

*C. Affected State in EPA Region II*

## New Jersey

As described in section IX.C.1 of the February 2013 proposal, the Petitioner objected to two specific provisions in the New Jersey SIP that allow for automatic exemptions for excess emissions during emergency situations. The Petitioner objected to the first provision because it provides industrial process units that have the potential to emit sulfur compounds an exemption from the otherwise applicable sulfur emission limitations where “[t]he discharge from any stack or chimney [has] the sole function of relieving pressure of gas, vapor or liquid under abnormal emergency conditions” (N.J. Admin. Code 7:27–7.2(k)(2)). The Petitioner objected to the second provision because it provides electric generating units (EGUs) an exemption from the otherwise applicable NO<sub>x</sub> emission limitations when the unit is operating at “emergency capacity,” also known as a “MEG alert,” which is statutorily defined as a period in which one or more EGUs is operating at emergency capacity at the direction of the load dispatcher in order to prevent or mitigate voltage reductions or interruptions in electric service, or both (N.J. Admin. Code 7:27–19.1).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to N.J. Admin. Code 7:27–7.2(k)(2). Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to N.J. Admin. Code 7:27–19.1.

Consequently, the EPA proposed to find that N.J. Admin. Code 7:27–7.2(k)(2) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to N.J. Admin. Code 7:27–7.2(k)(2) and denying the Petition with respect to N.J. Admin. Code 7:27–19.1. Accordingly, the EPA is finding that the provision in N.J. Admin. Code 7:27–7.2(k)(2) is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the New Jersey SIP that the EPA received and considered during the development of this rulemaking.

*D. Affected States in EPA Region III*

## 1. Delaware

As described in section IX.D.1 of the February 2013 proposal, the Petitioner objected to seven provisions in the Delaware SIP that provide exemptions during startup and shutdown from the otherwise applicable SIP emission limitations. The seven source-specific and pollutant-specific provisions that provide exemptions during periods of startup and shutdown are: 7–1100–1104 Del. Code Regs § 1.5 (Particulate Emissions from Fuel Burning Equipment); 7–1100–1105 Del. Code Regs § 1.7 (Particulate Emissions from Industrial Process Operations); 7–1100–1108 Del. Code Regs § 1.2 (Sulfur Dioxide Emissions from Fuel Burning Equipment); 7–1100–1109 Del. Code Regs § 1.4 (Emissions of Sulfur Compounds From Industrial Operations); 7–1100–1114 Del. Code Regs § 1.3 (Visible Emissions); 7–1100–1124 Del. Code Regs § 1.4 (Control of Volatile Organic Compound Emissions); and 7–1100–1142 Del. Code Regs § 2.3.5 (Specific Emission Control Requirements).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 7–1100–1104 Del. Code Regs § 1.5, 7–1100–1105 Del. Code Regs § 1.7, 7–1100–1108 Del. Code Regs § 1.2, 7–1100–1109 Del. Code Regs § 1.4, 7–1100–1114 Del. Code Regs § 1.3, 7–1100–1124 Del. Code Regs § 1.4 and 7–1100–1142 Del. Code Regs § 2.3.5.

Consequently, the EPA proposed to find that 7–1100–1104 Del. Code Regs § 1.5, 7–1100–1105 Del. Code Regs § 1.7, 7–1100–1108 Del. Code Regs § 1.2, 7–1100–1109 Del. Code Regs § 1.4, 7–1100–1114 Del. Code Regs § 1.3, 7–1100–1124 Del. Code Regs § 1.4 and 7–1100–1142 Del. Code Regs § 2.3.5 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 7–1100–1104 Del. Code Regs § 1.5, 7–1100–1105 Del. Code Regs § 1.7, 7–1100–1108 Del. Code Regs § 1.2, 7–1100–1109 Del. Code Regs § 1.4, 7–1100–1114 Del. Code Regs § 1.3, 7–1100–1124 Del. Code Regs § 1.4 and 7–1100–1142 Del. Code Regs § 2.3.1.6 (updated to § 2.3.1.6 from earlier identification as § 2.3.5). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions.

## 2. District of Columbia

As described in section IX.D.2 of the February 2013 proposal, the Petitioner objected to five provisions in the District of Columbia (DC) SIP as being inconsistent with the CAA and the EPA’s SSM Policy. The Petitioner first objected to a generally applicable provision in the DC SIP that allows for discretionary exemptions during periods of maintenance or malfunction (D.C. Mun. Regs. tit. 20 § 107.3). Secondly, the Petitioner objected to the alternative limitations on stationary sources for visible emissions during periods of “start-up, cleaning, soot blowing, adjustment of combustion controls, or malfunction,” (D.C. Mun. Regs. tit. 20 § 606.1) and, for fuel-burning equipment placed in initial operation before January 1977, alternative limits for visible emissions during startup and shutdown (D.C. Mun. Regs. tit. 20 § 606.2). The Petitioner also objected to the exemption from emission limitations for emergency standby engines (D.C. Mun. Regs. tit. 20 § 805.1(c)(2)). Finally, the Petitioner objected to the provision in the DC SIP that provides an affirmative defense for violations of visible emission limitations during “unavoidable malfunction” (D.C. Mun. Regs. tit. 20 § 606.4).

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to D.C. Mun. Regs. tit. 20 § 107.3 and D.C. Mun. Regs. tit. 20 §§ 606.1 and 606.2. Also for reasons explained in the February 2013 proposal, the EPA proposed to deny the Petition with respect to D.C. Mun. Regs. tit. 20 § 805.1(c)(2). Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the petition with respect to D.C. Mun. Regs. tit. 20 § 606.4 on the basis that it was not a permissible affirmative defense provision consistent with the requirements of the CAA as interpreted in the EPA’s SSM Policy at the time.

Subsequently, for reasons explained in the SNPR, the EPA repropoed granting of the Petition with respect to the affirmative defense provision in D.C. Mun. Regs. tit. 20 § 606.4, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that D.C. Mun. Regs. tit. 20 § 107.3, D.C. Mun. Regs. tit. 20 §§ 606.1 and 606.2 and D.C. Mun. Regs. tit. 20 § 606.4 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to D.C. Mun. Regs. tit. 20 § 107.3, D.C. Mun. Regs. tit. 20 §§ 606.1 and 606.2 and D.C. Mun. Regs. tit. 20 § 606.4 and is denying the Petition with respect to D.C. Mun. Regs. tit. 20 § 805.1(c)(2). Accordingly, the EPA is finding that the provisions in D.C. Mun. Regs. tit. 20 § 107.3, D.C. Mun. Regs. tit. 20 §§ 606.1 and 606.2 and D.C. Mun. Regs. tit. 20 § 606.4 are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call to the District of Columbia to correct its SIP with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the DC SIP that the EPA received and considered during the development of this rulemaking.

### 3. Virginia

As described in section IX.D.3 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Virginia SIP that allows for discretionary exemptions during periods of malfunction (9 Va. Admin. Code § 5-20-180(G)). First, the Petitioner objected because this provision provides an exemption from the otherwise applicable SIP emission limitations. Second, the Petitioner objected to the discretionary exemption for excess emissions during malfunction because the provision gives the state the authority to determine whether a violation “shall be judged to have taken place.” Third, the Petitioner argued that while the regulation provides criteria, akin to an affirmative defense, by which the state must make such a judgment that the event is not a violation, the criteria “fall far short of EPA policy at the time” and the provision “fails to establish any procedure through which the criteria are to be evaluated.”

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 9 Va. Admin. Code § 5-20-180(G). Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to this provision on the basis that it was not a permissible affirmative defense provision consistent with the requirements of the CAA as interpreted in the EPA’s SSM Policy.

Subsequently, for reasons explained in the SNPR, the EPA reproposed granting of the Petition with respect to 9 Va. Admin. Code § 5-20-180(G), but it proposed to revise the basis for the

finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that 9 Va. Admin. Code § 5-20-180(G) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to 9 Va. Admin. Code § 5-20-180(G) and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Virginia SIP that the EPA received and considered during the development of this rulemaking.

### 4. West Virginia

As described in section IX.D.4 of the February 2013 proposal, the Petitioner made four types of objections identifying inadequacies regarding SSM provisions in West Virginia’s SIP. First, the Petitioner objected to three specific provisions in the West Virginia SIP that allow for automatic exemptions from emission limitations, standards, and monitoring and recordkeeping requirements for excess emission during startup, shutdown, or malfunction (W. Va. Code R. § 45-2-9.1, W. Va. Code R. § 45-7-10.3 and W. Va. Code R. § 45-40-100.8). Second, the Petitioner objected to seven discretionary exemption provisions because these provisions provide exemptions from the otherwise applicable SIP emission limitations. The Petitioner noted that the provisions allow a state official to “grant an exception to the otherwise applicable visible emissions standards” due to “unavoidable shortage of fuel” or “any emergency situation or condition creating a threat to public safety or welfare” (W. Va. Code R. § 45-2-10.1), to permit excess emissions “due to unavoidable malfunctions of equipment” (W. Va. Code R. § 45-3-7.1, W. Va. Code R. § 45-5-13.1, W. Va. Code R. § 45-6-8.2, W. Va. Code R. § 45-7-9.1 and W. Va. Code R. § 45-10-9.1) and to permit exceedances where the limit cannot be “satisfied” because of “routine maintenance” or “unavoidable malfunction” (W. Va. Code R. § 45-21-9.3). Third, the Petitioner objected to the alternative limit imposed on hot mix asphalt plants during periods of startup and shutdown in W. Va. Code R. § 45-3-3.2 because it was “not sufficiently justified” under the EPA’s SSM Policy regarding source category-specific rules. Fourth, the

Petitioner objected to a discretionary provision allowing the state to approve an alternative visible emission standard during startups and shutdowns for manufacturing processes and associated operations (W. Va. Code R. § 45-7-10.4). The Petitioner argued that such a provision “allows a decision of the state to preclude enforcement by EPA and citizens.”

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to W. Va. Code R. § 45-2-9.1, W. Va. Code R. § 45-7-10.3 and W. Va. Code R. § 45-40-100.8 on the basis that each of these provisions allows for automatic exemptions. Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to W. Va. Code R. § 45-2-10.1, W. Va. Code R. § 45-3-7.1, W. Va. Code R. § 45-5-13.1, W. Va. Code R. § 45-6-8.2, W. Va. Code R. § 45-7-9.1, W. Va. Code R. § 45-10-9.1 and W. Va. Code R. § 45-21-9.3 on the basis that these provisions allow for discretionary exemptions from otherwise applicable SIP emission limitations. Further, for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to W. Va. Code R. § 45-3-3.2, W. Va. Code R. § 45-2-10.2 and W. Va. Code R. § 45-7-10.4. The W. Va. Code R. § 45-3-3.2 applies to a broad category of sources and is not narrowly limited to a source category that uses a specific control strategy, as required by the EPA’s SSM Policy interpreting the CAA. Similarly, W. Va. Code R. § 45-2-10.2 is inconsistent with the EPA’s SSM Policy interpreting the CAA because it is an alternative limit that allows for discretionary exemptions from otherwise applicable SIP emission limitations.<sup>392</sup> The W. Va. Code R. § 45-

<sup>392</sup> As explained in the February 2013 proposal, the Petitioner specifically focused on concern with W. Va. Code R. § 45-2-10.1, but the same issue affects W. Va. Code R. § 45-2-10.2, and so the EPA similarly proposed to issue a SIP call with respect to the latter provision. See 78 FR 12459 at 12500, n.111. W. Va. Code R. § 45-2-10.2 is an alternative limit that applies during periods of maintenance. In the February 2013 proposal, the EPA noted that this provision was inconsistent with the EPA’s SSM Policy interpreting the CAA because it was an alternative limit that specifically applied during periods of maintenance. Although the EPA originally contemplated that an alternative emission limitation could appropriately apply only during startup or shutdown, the EPA recognizes in section VII.B of this document that it may be appropriate for an air agency to establish alternative emission limitations that apply during modes of source operation other than during startup and shutdown, but any such alternative emission limitations should be developed using the same criteria that the EPA recommends for those applicable during startup and shutdown. The alternative emission limitation applicable during maintenance does not appear to have been developed using the

Continued



7–10.4 allows state officials the discretion to establish alternative visible emissions standards during startup and shutdown upon application.

Subsequently, for reasons explained fully in the SNPR, the EPA identified one affirmative defense provision in the West Virginia SIP in W. Va. Code R. § 45–2–9.4 that was not identified by the Petitioner, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for this provision.

Consequently, the EPA proposed to find that W. Va. Code R. § 45–2–9.1, W. Va. Code R. § 45–7–10.3, W. Va. Code R. § 45–40–100.8, W. Va. Code R. § 45–2–10.1, W. Va. Code R. § 45–3–7.1, W. Va. Code R. § 45–5–13.1, W. Va. Code R. § 45–6–8.2, W. Va. Code R. § 45–7–9.1, W. Va. Code R. § 45–10–9.1, W. Va. Code R. § 45–21–9.3, W. Va. Code R. § 45–3–3.2 and W. Va. Code R. § 45–7–10.4, which are provisions identified by the Petitioner, and W. Va. Code R. § 45–2–10.2 and W. Va. Code R. § 45–2–9.4, which are provisions identified by the EPA, are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to the West Virginia SIP provisions identified by the Petitioner. Accordingly, the EPA is finding that the provisions in W. Va. Code R. § 45–2–9.1, W. Va. Code R. § 45–7–10.3, W. Va. Code R. § 45–40–100.8, W. Va. Code R. § 45–2–10.1, W. Va. Code R. § 45–3–7.1, W. Va. Code R. § 45–5–13.1, W. Va. Code R. § 45–6–8.2, W. Va. Code R. § 45–7–9.1, W. Va. Code R. § 45–10–9.1, W. Va. Code R. § 45–21–9.3, W. Va. Code R. § 45–3–3.2 and W. Va. Code R. § 45–7–10.4, which are provisions identified by the Petitioner, and W. Va. Code R. § 45–2–10.2 and W. Va. Code R. § 45–2–9.4, which are provisions identified by the EPA, are substantially inadequate to meet CAA requirements. The EPA is thus issuing a SIP call to West Virginia to correct its SIP with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the West Virginia SIP that the

recommended criteria for such alternative emission limitations. In addition, the EPA finds that this provision, like W. Va. Code R. § 45–2–10.1, is also deficient because it allows for discretionary exemptions from otherwise applicable SIP emission limitations. As noted in the proposal, such provisions that authorize director's discretion exemptions are impermissible in SIPs.

EPA received and considered during the development of this rulemaking.

#### *E. Affected States and Local Jurisdictions in EPA Region IV*

##### 1. Alabama

As described in section IX.E.1 of the February 2013 proposal, the Petitioner objected to two generally applicable provisions in the Alabama SIP that allow for discretionary exemptions during startup, shutdown or load change (Ala Admin Code Rule 335–3–14–.03(1)(h)(1)), and during emergencies (Ala Admin Code Rule 335–3–14–.03(1)(h)(2)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Ala Admin Code Rule 335–3–14–.03(1)(h)(1) and Ala Admin Code Rule 335–3–14–.03(1)(h)(2).

Consequently, the EPA proposed to find that Ala Admin Code Rule 335–3–14–.03(1)(h)(1) and Ala Admin Code Rule 335–3–14–.03(1)(h)(2) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Ala Admin Code Rule 335–3–14–.03(1)(h)(1) and Ala Admin Code Rule 335–3–14–.03(1)(h)(2). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Alabama SIP that the EPA received and considered during the development of this rulemaking.

##### 2. Florida

As described in section IX.E.2 of the February 2013 proposal, the Petitioner objected to three specific provisions in the Florida SIP that allow for generally applicable automatic exemptions for excess emissions during SSM (Fla. Admin. Code Ann Rule 62–210.700(1)), for fossil fuel steam generators during startup and shutdown (Fla. Admin. Code Ann Rule 62–210.700(2)), and for such sources during boiler cleaning and load change (Fla. Admin. Code Ann Rule 62–210.700(3)).<sup>393</sup> After objecting

<sup>393</sup> The EPA notes that in the February 2013 proposal, it incorrectly cited Fla. Admin. Code Ann Rule 52.201.700 when it intended to cite Rule 52.210.700. The transposition of numbers was a typographical error. Commenters on the proposal

to the three provisions that create the exemptions, the Petitioner noted that the related provision in Fla. Admin. Code Ann Rule 62–210.700(4) reduces the potential scope of the exemptions in the other three provisions if the excess emissions at issue are caused entirely or in part by things such as poor maintenance but that it does not eliminate the impermissible exemptions.

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Fla. Admin. Code Ann Rule 62–210.700(1), Fla. Admin. Code Ann Rule 62–210.700(2), Fla. Admin. Code Ann Rule 62–210.700(3) and Fla. Admin. Code Ann Rule 62–210.700(4).

Consequently, the EPA proposed to find that Fla. Admin. Code Ann Rule 62–210.700(1), Fla. Admin. Code Ann Rule 62–210.700(2), Fla. Admin. Code Ann Rule 62–210.700(3) and Fla. Admin. Code Ann Rule 62–210.700(4) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Fla. Admin. Code Ann Rule 62–210.700(1), Fla. Admin. Code Ann Rule 62–210.700(2), Fla. Admin. Code Ann Rule 62–210.700(3) and Fla. Admin. Code Ann Rule 62–210.700(4). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Florida SIP that the EPA received and considered during the development of this rulemaking.

##### 3. Georgia

As described in section IX.E.3 of the February 2013 proposal, the Petitioner objected to a provision in the Georgia SIP that provides for exemptions for excess emissions during SSM under certain circumstances (Ga. Comp. R. & Regs. 391–3–1–.02(2)(a)(7)). The Petitioner acknowledged that this provision of the Georgia SIP includes some conditions for when sources may be entitled to seek the exemption under state law, such as when the source has

correctly recognized that the EPA intended to instead refer to Fla. Admin. Code Ann Rule 52.210.700. See, e.g., comment letter received from the Florida Department of Environmental Protection, May 13, 2013, in the rulemaking docket at EPA–HQ–OAR–2012–0322–0878.

used “best operational practices” to minimize emissions during the SSM event.

First, the Petitioner objected because the provision creates an exemption from the applicable emission limitations by providing that the excess emissions “shall be allowed” subject to certain conditions. Second, the Petitioner argued that although the provision provides some “substantive criteria,” the provision does not meet the criteria the EPA recommended at the time for an affirmative defense provision consistent with the requirements of the CAA in the EPA’s SSM Policy. Third, the Petitioner asserted that the provision is not a permissible “enforcement discretion” provision applicable only to state personnel, because it “is susceptible to interpretation as an enforcement exemption, precluding EPA and citizen enforcement as well as state enforcement.”

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Ga. Comp. R. & Regs. 391–3–1–.02(2)(a)(7). Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to this provision on the basis that it was not a permissible affirmative defense provision consistent with the requirements of the CAA and the EPA’s recommendations in the EPA’s SSM Policy at the time.

Subsequently, for reasons explained in the SNPR, the EPA repropose granting of the Petition with respect to Ga. Comp. R. & Regs. 391–3–1–.02(2)(a)(7), but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that Ga. Comp. R. & Regs. 391–3–1–.02(2)(a)(7) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Ga. Comp. R. & Regs. 391–3–1–.02(2)(a)(7). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Georgia SIP that the EPA received and considered during the development of this rulemaking.

#### 4. Kentucky

As described in section IX.E.4 of the February 2013 proposal, the Petitioner objected to a generally applicable provision that allows discretionary exemptions from otherwise applicable SIP emission limitations in Kentucky’s SIP (401 KAR 50:055 § 1(1)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 401 KAR 50:055 § 1(1).

Consequently, the EPA proposed to find that 401 KAR 50:055 § 1(1) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to 401 KAR 50:055 § 1(1). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Kentucky SIP that the EPA received and considered during the development of this rulemaking.

#### 5. Kentucky: Jefferson County

As described in section IX.E.5 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Jefferson County Air Regulations 1.07 because it provided for discretionary exemptions from compliance with emission limitations during SSM. The provision required different demonstrations for exemptions for excess emissions during startup and shutdown (Regulation 1.07 § 3), malfunction (Regulation 1.07 § 4 and § 7) and emergency (Regulation 1.07 § 5 and § 7). Second, the Petitioner objected to the affirmative defense for emergencies in Jefferson County Air Regulations 1.07.

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to provisions in the Jefferson County Air Regulations 1.07.

Subsequently, for reasons explained fully in the SNPR, the EPA reversed its prior proposed granting of the Petition with respect to Jefferson County Air Regulations 1.07. For Jefferson County, Kentucky, the provisions for which the EPA proposed in February 2013 to grant the Petition were subsequently removed from the SIP. Thus, in the SNPR, the EPA proposed instead to deny the

Petition.<sup>394</sup> As explained in the SNPR, the state of Kentucky has revised the SIP provisions applicable to Jefferson County and eliminated the SIP inadequacies identified in the February 2013 proposal document. The EPA has already approved the necessary SIP revisions.<sup>395</sup> Accordingly, the EPA’s final action on the Petition does not include a finding of substantial inadequacy and SIP call for Jefferson County, Kentucky.

In this final action, the EPA is denying the Petition with respect to Jefferson County Air Regulations 1.07. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Kentucky SIP that the EPA received and considered during the development of this rulemaking.

#### 6. Mississippi

As described in section IX.E.6 of the February 2013 proposal, the Petitioner objected to two generally applicable provisions in the Mississippi SIP that allow for affirmative defenses for violations of otherwise applicable SIP emission limitations during periods of upset, *i.e.*, malfunctions (11–1–2 Miss. Code R. § 10.1) and unavoidable maintenance (11–1–2 Miss. Code R. § 10.3). First, the Petitioner objected to both of these provisions based on its assertion that the CAA allows no affirmative defense provisions in SIPs. Second, the Petitioner asserted that even if affirmative defense provisions were permissible under the CAA, the affirmative defenses in these provisions “fall far short of the EPA policy at the time.” The Petitioner also objected to a generally applicable provision that provides an exemption from otherwise applicable SIP emission limitations during startup and shutdown (11–1–2 Miss. Code R. § 10.2).

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 11–1–2 Miss. Code R. § 10.1 and 11–1–2 Miss. Code R. § 10.3. Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the petition with respect to these provisions on the basis that they were not appropriate as an affirmative defense provisions because they were

<sup>394</sup> See SNPR, 79 FR 55919 at 55925.

<sup>395</sup> See Approval and Promulgation of Implementation Plans; Kentucky; Approval of Revisions to the Jefferson County Portion of the Kentucky SIP; Emissions During Startups, Shutdowns, and Malfunctions, 79 FR 33101 (June 10, 2014).

inconsistent with fundamental requirements of the CAA. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 11–1–2 Miss. Code R. § 10.2.

Subsequently, for reasons explained in the SNPR, the EPA repropoed granting of the Petition with respect to the affirmative defense provisions in 11–1–2 Miss. Code R. § 10.1 and 11–1–2 Miss. Code R. § 10.3, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for these provisions.

Consequently, the EPA proposed to find that 11–1–2 Miss. Code R. § 10.1, 11–1–2 Miss. Code R. § 10.2 and 11–1–2 Miss. Code R. § 10.3 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 11–1–2 Miss. Code R. § 10.1, 11–1–2 Miss. Code R. § 10.2 and 11–1–2 Miss. Code R. § 10.3. Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Mississippi SIP that the EPA received and considered during the development of this rulemaking.

#### 7. North Carolina

As described in section IX.E.7 of the February 2013 proposal, the Petitioner objected to two generally applicable provisions in the North Carolina SIP that provide exemptions for emissions exceeding otherwise applicable SIP emission limitations at the discretion of the state agency during malfunctions (15A N.C. Admin. Code 2D.0535(c)) and during startup and shutdown (15A N.C. Admin. Code 2D.0535(g)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 15A N.C. Admin. Code 2D.0535(c) and 15A N.C. Admin. Code 2D.0535(g).

Consequently, the EPA proposed to find that 15A N.C. Admin. Code 2D.0535(c) and 15A N.C. Admin. Code 2D.0535(g) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 15A

N.C. Admin. Code 2D.0535(c) and 15A N.C. Admin. Code 2D.0535(g). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the North Carolina SIP that the EPA received and considered during the development of this rulemaking.

#### 8. North Carolina: Forsyth County

As described in section IX.E.8 of the February 2013 proposal, the Petitioner objected to two generally applicable provisions in the Forsyth County Code that provide exemptions for emissions exceeding otherwise applicable SIP emission limitations at the discretion of a local official during malfunctions (Forsyth County Code, ch. 3, 3D.0535(c)) and startup and shutdown (Forsyth County Code, ch. 3, 3D.0535(g)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Forsyth County Code, ch. 3, 3D.0535(c) and Forsyth County Code, ch. 3, 3D.0535(g).

Consequently, the EPA proposed to find that Forsyth County Code, ch. 3, 3D.0535(c) and Forsyth County Code, ch. 3, 3D.0535(g) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Forsyth County Code, ch. 3, 3D.0535(c) and Forsyth County Code, ch. 3, 3D.0535(g). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the North Carolina SIP that the EPA received and considered during the development of this rulemaking.

#### 9. South Carolina

As described in section IX.E.9 of the February 2013 proposal, the Petitioner objected to three provisions in the South Carolina SIP, arguing that they contained impermissible source category- and pollutant-specific exemptions. The Petitioner

characterized these provisions as providing exemptions from opacity limits for fuel-burning operations for excess emissions that occur during startup or shutdown (S.C. Code Ann. Regs. 61–62.5 St 1(C)), exemptions from NO<sub>x</sub> limits for special-use burners that are operated less than 500 hours per year (S.C. Code Ann. Regs. 61–62.5 St 5.2(I)(b)(14)) and exemptions from sulfur limits for kraft pulp mills for excess emissions that occur during SSM events (S.C. Code Ann. Regs. St 4(XI)(D)(4)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to S.C. Code Ann. Regs. 61–62.5 St 1(C) and S.C. Code Ann. Regs. St 4(XI)(D)(4). Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to S.C. Code Ann. Regs. 61–62.5 St 5.2(I)(b)(14).

Subsequently, for reasons explained fully in the SNPR, the EPA identified one affirmative defense provision in the South Carolina SIP in S.C. Code Ann. Regs. 62.1, Section II(G)(6) that was not identified by the Petitioner, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for this provision.

Consequently, the EPA proposed to find that the provisions in S.C. Code Ann. Regs. 61–62.5 St 1(C), S.C. Code Ann. Regs. St 4(XI)(D)(4) and S.C. Code Ann. Regs. 62.1, Section II(G)(6) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to S.C. Code Ann. Regs. 61–62.5 St 1(C), S.C. Code Ann. Regs. St 4(XI)(D)(4) and S.C. Code Ann. Regs. 62.1, Section II(G)(6) and denying the Petition with respect to S.C. Code Ann. Regs. 61–62.5 St 5.2(I)(b)(14). Accordingly, the EPA is finding that the provisions in S.C. Code Ann. Regs. 61–62.5 St 1(C), S.C. Code Ann. Regs. St 4(XI)(D)(4) and S.C. Code Ann. Regs. 62.1, Section II(G)(6) are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the South Carolina SIP that the EPA received and considered during the development of this rulemaking.

#### 10. Tennessee

As described in section IX.E.10 of the February 2013 proposal, the Petitioner objected to three provisions in the Tennessee SIP. First, the Petitioner objected to two provisions that authorize a state official to decide whether to “excuse or proceed upon” (Tenn. Comp. R. & Regs. 1200–3–20–.07(1)) violations of otherwise applicable SIP emission limitations that occur during “malfunctions, startups, and shutdowns” (Tenn. Comp. R. & Regs. 1200–3–20–.07(3)). Second, the Petitioner objected to a provision that excludes excess visible emissions from the requirement that the state automatically issue a notice of violation for all excess emissions (Tenn. Comp. R. & Regs. 1200–3–5–.02(1)). This provision states that “due allowance may be made for visible emissions in excess of that permitted in this chapter which are necessary or unavoidable due to routine startup and shutdown conditions.”

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Tenn. Comp. R. & Regs. 1200–3–20–.07(1), Tenn. Comp. R. & Regs. 1200–3–20–.07(3) and Tenn. Comp. R. & Regs. 1200–3–5–.02(1).

Consequently, the EPA proposed to find that Tenn. Comp. R. & Regs. 1200–3–20–.07(1), Tenn. Comp. R. & Regs. 1200–3–20–.07(3) and Tenn. Comp. R. & Regs. 1200–3–5–.02(1) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Tenn. Comp. R. & Regs. 1200–3–20–.07(1), Tenn. Comp. R. & Regs. 1200–3–20–.07(3) and Tenn. Comp. R. & Regs. 1200–3–5–.02(1). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Tennessee SIP that the EPA received and considered during the development of this rulemaking.

#### 11. Tennessee: Knox County

As described in section IX.E.11 of the February 2013 proposal, the Petitioner objected to a provision in the Knox County portion of the Tennessee SIP that bars evidence of a violation of SIP emission limitations from being used in

a citizen enforcement action (Knox County Regulation 32.1(C)). The provision specifies that “[a] determination that there has been a violation of these regulations or orders issued pursuant thereto shall not be used in any law suit brought by any private citizen.”

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Knox County Regulation 32.1(C). For instance, the regulation was inconsistent with requirements related to credible evidence.

Consequently, the EPA proposed to find that Knox County Regulation 32.1(C) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Knox County Regulation 32.1(C). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Tennessee SIP that the EPA received and considered during the development of this rulemaking.

#### 12. Tennessee: Shelby County

As described in section IX.E.12 of the February 2013 proposal, the Petitioner objected to a provision in the Shelby County Code (Shelby County Code § 16–87) that addresses enforcement for excess emissions that occur during “malfunctions, startups, and shutdowns” by incorporating by reference the state’s provisions in Tenn. Comp. R. & Regs. 1200–3–20. Shelby County Code § 16–87 provides that “all such additions, deletions, changes and amendments as may subsequently be made” to Tennessee’s regulations will automatically become part of the Shelby County Code.

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Shelby County Code § 16–87.

Consequently, the EPA proposed to find that Shelby County Code § 16–87 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Shelby County Code § 16–87. Accordingly, the EPA is finding that this provision is substantially inadequate to

meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Tennessee SIP that the EPA received and considered during the development of this rulemaking.

#### F. Affected States in EPA Region V

##### 1. Illinois

As described in section IX.F.1 of the February 2013 proposal, the Petitioner objected to three generally applicable provisions in the Illinois SIP which together have the effect of providing discretionary exemptions from otherwise applicable SIP emission limitations. The Petitioner noted that the provisions invite sources to request, during the permitting process, advance permission to continue to operate during a malfunction or breakdown, and, similarly to request advance permission to “violate” otherwise applicable emission limitations during startup (Ill. Admin. Code tit. 35 § 201.261). The Illinois SIP provisions establish criteria that a state official must consider before granting the advance permission to violate the emission limitations (Ill. Admin. Code tit. 35 § 201.262). However, the Petitioner asserted, the provisions state that, once granted, the advance permission to violate the emission limitations “shall be a prima facie defense to an enforcement action” (Ill. Admin. Code tit. 35 § 201.265).

Further, the Petitioner objected to the use of the term “prima facie defense” in Ill. Admin. Code tit. 35 § 201.265, arguing that the term is “ambiguous in its operation.” The Petitioner argued that the provision is not clear regarding whether the defense is to be evaluated “in a judicial or administrative proceeding or whether the Agency determines its availability.” Allowing defenses to be raised in these undefined contexts, the Petitioner argued, is “inconsistent with the enforcement structure of the Clean Air Act.”

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Ill. Admin. Code tit. 35 § 201.261, Ill. Admin. Code tit. 35 § 201.262 and Ill. Admin. Code tit. 35 § 201.265.

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to the affirmative defense provisions in Ill. Admin. Code tit. 35 § 201.261, Ill. Admin. Code tit. 35 § 201.262 and Ill.

Admin. Code tit. 35 § 201.265, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for these provisions.

Consequently, the EPA proposed to find that Ill. Admin. Code tit. 35 § 201.261, Ill. Admin. Code tit. 35 § 201.262 and Ill. Admin. Code tit. 35 § 201.265 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Ill. Admin. Code tit. 35 § 201.261, Ill. Admin. Code tit. 35 § 201.262 and Ill. Admin. Code tit. 35 § 201.265. Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Illinois SIP that the EPA received and considered during the development of this rulemaking.

## 2. Indiana

As described in section IX.F.2 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Indiana SIP that allows for discretionary exemptions during malfunctions (326 Ind. Admin. Code 1–6–4(a)). The Petitioner noted that the provision is ambiguous because it states that excess emissions during malfunction periods “shall not be considered a violation” if the source demonstrates that a number of conditions are met (326 Ind. Admin. Code 1–6–4(a)), but the provision does not specify to whom or in what forum such demonstration must be made.

If the demonstration was required to have been made in a showing to the state, the Petitioner argued, the provision would give a state official the sole authority to determine that the excess emissions were not a violation and could thus be read to preclude enforcement by the EPA or citizens in the event that the state official elects not to treat the excess emissions as a violation. If instead, as the Petitioner noted, the demonstration was required to have been made in an enforcement context, the provision could be interpreted as providing an affirmative defense.

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 326 Ind. Admin. Code 1–6–4(a).

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to 326 Ind. Admin. Code 1–6–4(a), but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that 326 Ind. Admin. Code 1–6–4(a) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to 326 Ind. Admin. Code 1–6–4(a). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Indiana SIP that the EPA received and considered during the development of this rulemaking.

## 3. Michigan

As described in section IX.F.3 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in Michigan’s SIP, Mich. Admin. Code r. 336.1916, that provides for an affirmative defense to monetary penalties for violations of otherwise applicable SIP emission limitations during periods of startup and shutdown.

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Mich. Admin. Code r. 336.1916.

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to the affirmative defense provision in Mich. Admin. Code r. 336.1916, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that Mich. Admin. Code r. 336.1916 substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Mich. Admin. Code r. 336.1916. Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the

docket for this rulemaking concerning any comments specific to the Michigan SIP that the EPA received and considered during the development of this rulemaking.

## 4. Minnesota

As described in section IX.F.4 of the February 2013 proposal, the Petitioner objected to a provision in the Minnesota SIP that provides automatic exemptions for excess emissions resulting from flared gas at petroleum refineries when those flares are caused by SSM (Minn. R. 7011.1415).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Minn. R. 7011.1415.

Consequently, the EPA proposed to find that Minn. R. 7011.1415 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Minn. R. 7011.1415. Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Minnesota SIP that the EPA received and considered during the development of this rulemaking.

## 5. Ohio

As described in section IX.F.5 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Ohio SIP that allows for discretionary exemptions during periods of scheduled maintenance (Ohio Admin. Code 3745–15–06(A)(3)). The Petitioner also objected to two source category-specific and pollutant-specific provisions that provide for discretionary exemptions during malfunctions (Ohio Admin. Code 3745–17–07(A)(3)(c) and Ohio Admin. Code 3745–17–07(B)(11)(f)). The Petitioner also objected to a source category-specific provision in the Ohio SIP that allows for an automatic exemption from applicable emission limitations and requirements during periods of startup, shutdown, malfunction, or regularly scheduled maintenance activities (Ohio Admin. Code 3745–14–11(D)). Finally, the Petitioner objected to five provisions that contain exemptions for Hospital/Medical/Infectious Waste Incinerator (HMIWI) sources during startup, shutdown, and malfunction—Ohio

Admin. Code 3745-75-02(E), Ohio Admin. Code 3745-75-02(J), Ohio Admin. Code 3745-75-03(I), Ohio Admin. Code 3745-75-04(K) and Ohio Admin. Code 3745-75-04(L).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Ohio Admin. Code 3745-15-06(A)(3), Ohio Admin. Code 3745-17-07(A)(3)(c), Ohio Admin. Code 3745-17-07(B)(11)(f) and Ohio Admin. Code 3745-14-11(D). Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Ohio Admin. Code 3745-75-02(E), Ohio Admin. Code 3745-75-02(J), Ohio Admin. Code 3745-75-03(I), Ohio Admin. Code 3745-75-04(K) and Ohio Admin. Code 3745-75-04(L), on the basis that they are not part of the Ohio SIP and thus cannot represent a substantial inadequacy in the SIP. In addition, for reasons explained fully in the February 2013 proposal, the EPA proposed to find that another provision, Ohio Admin. Code 3745-15-06(C), is substantially inadequate to meet CAA requirements and proposed to issue a SIP call with respect to this provision, even though the Petitioner did not request that the EPA evaluate this provision. As explained in the February 2013 proposal, the EPA determined that Ohio Admin. Code 3745-15-06(C) was the regulatory mechanism in the SIP by which exemptions are granted in the two provisions to which the Petitioner did object.

Consequently, the EPA proposed to find that the provisions in Ohio Admin. Code 3745-15-06(A)(3), Ohio Admin. Code 3745-17-07(A)(3)(c), Ohio Admin. Code 3745-17-07(B)(11)(f), Ohio Admin. Code 3745-14-11(D) and Ohio Admin. Code 3745-15-06(C) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Ohio Admin. Code 3745-15-06(A)(3), Ohio Admin. Code 3745-17-07(A)(3)(c), Ohio Admin. Code 3745-17-07(B)(11)(f), Ohio Admin. Code 3745-14-11(D) and Ohio Admin. Code 3745-15-06(C) are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. Also in this final action, the EPA is denying the Petition with respect to Ohio Admin. Code 3745-75-02(E), Ohio Admin. Code 3745-75-02(J), Ohio Admin. Code 3745-75-03(I), Ohio Admin. Code 3745-75-04(K) and Ohio Admin. Code 3745-75-04(L). This action is fully

consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Ohio SIP that the EPA received and considered during the development of this rulemaking.

#### *G. Affected States in EPA Region VI*

##### *1. Arkansas*

As described in section IX.G.1 of the February 2013 proposal, the Petitioner objected to two provisions in the Arkansas SIP. First, the Petitioner objected to a provision that provides an automatic exemption for excess emissions of VOC for sources located in Pulaski County that occur due to malfunctions (Reg. 19.1004(H)). Second, the Petitioner objected to a separate provision that provides a “complete affirmative defense” for excess emissions that occur during emergency conditions (Reg. 19.602). The Petitioner argued that this provision, which the state may have modeled after the EPA’s title V regulations, is impermissible because its application is not clearly limited to operating permits.

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Reg. 19.1004(H) and Reg. 19.602.

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to the affirmative defense provision in Reg. 19.602, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that Reg. 19.1004(H) and Reg. 19.602<sup>396</sup> are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Reg. 19.1004(H) and Reg. 19.602. Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the

<sup>396</sup> In a final action published March 4, 2015 (80 FR 11573), the EPA approved revisions of the Arkansas SIP pertaining to the regulation and permitting of PM<sub>2.5</sub>. Among the approved revisions was a change to Reg. 19.602, to capitalize the letter “C” in that regulation’s title, “Emergency Conditions”). To the extent the EPA’s recent action affected Reg. 19.602, that action was only a ministerial matter and should not be construed as reapproval of the provision on its merits. That action does not affect the basis on which the EPA proposed to find Reg. 19.602 substantially inadequate in the February 2013 proposal.

EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Arkansas SIP that the EPA received and considered during the development of this rulemaking.

##### *2. Louisiana*

As described in section IX.G.2 of the February 2013 proposal, the Petitioner objected to several provisions in the Louisiana SIP that allow for automatic and discretionary exemptions from SIP emission limitations during various situations, including startup, shutdown, maintenance and malfunctions. First, the Petitioner objected to provisions that provide automatic exemptions for excess emissions of VOC from wastewater tanks (LAC 33:III.2153(B)(1)(i)) and excess emissions of NO<sub>x</sub> from certain sources within the Baton Rouge Nonattainment Area (LAC 33:III.2201(C)(8)). The LAC 33:III.2153(B)(1)(i) provides that control devices “shall not be required” to meet emission limitations “during periods of malfunction and maintenance on the devices for periods not to exceed 336 hours per year.” Similarly, LAC 33:III.2201(C)(8) provides that certain sources “are exempted” from emission limitations “during start-up and shutdown . . . or during a malfunction.” Second, the Petitioner objected to provisions that provide discretionary exemptions to various emission limitations. Three of these provisions provide discretionary exemptions from otherwise applicable SO<sub>2</sub> and visible emission limitations in the Louisiana SIP for excess emissions that occur during certain startup and shutdown events (LAC 33:III.1107, LAC 33:III.1507(A)(1) and LAC 33:III.1507(B)(1)), while the other two provide such exemptions for excess emissions from nitric acid plants during startups and “upsets” (LAC 33:III.2307(C)(1)(a) and LAC 33:III.2307(C)(2)(a)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to LAC 33:III.2153(B)(1)(i) and LAC 33:III.2201(C)(8) on the basis that these provisions allow for automatic exemptions for excess emissions from otherwise applicable SIP emission limitations. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to LAC 33:III.1107(A), LAC 33:III.1507(A)(1), LAC 33:III.1507(B)(1), LAC 33:III.2307(C)(1)(a) and LAC 33:III.2307(C)(2)(a) on the basis that

these provisions allow impermissible discretionary exemptions.

Consequently, the EPA proposed to find that LAC 33:III.2153(B)(1)(i), LAC 33:III.2201(C)(8), LAC 33:III.1107(A), LAC 33:III.1507(A)(1), LAC 33:III.1507(B)(1), LAC 33:III.2307(C)(1)(a) and LAC 33:III.2307(C)(2)(a) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to LAC 33:III.2153(B)(1)(i), LAC 33:III.2201(C)(8), LAC 33:III.1107(A), LAC 33:III.1507(A)(1), LAC 33:III.1507(B)(1), LAC 33:III.2307(C)(1)(a) and LAC 33:III.2307(C)(2)(a). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Louisiana SIP that the EPA received and considered during the development of this rulemaking.

### 3. New Mexico

As described in section IX.G.3 of the February 2013 proposal, the Petitioner objected to three provisions in the New Mexico SIP that provide affirmative defenses for excess emissions that occur during malfunctions (20.2.7.111 NMAC), during startup and shutdown (20.2.7.112 NMAC) and during emergencies (20.2.7.113 NMAC).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 20.2.7.111 NMAC, 20.2.7.112 NMAC and 20.2.7.113 NMAC.

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to the affirmative defense provisions in 20.2.7.111 NMAC, 20.2.7.112 NMAC and 20.2.7.113 NMAC, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for these provisions.

Consequently, the EPA proposed to find that the provisions in 20.2.7.111 NMAC, 20.2.7.112 NMAC and 20.2.7.113 NMAC are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 20.2.7.111 NMAC, 20.2.7.112 NMAC and 20.2.7.113 NMAC. Accordingly, the

EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the New Mexico SIP that the EPA received and considered during the development of this rulemaking.

### 4. New Mexico: Albuquerque-Bernalillo County

The Petitioner did not identify any provisions in the SIP for the state of New Mexico that specifically apply in the Albuquerque-Bernalillo County area, which is why this area was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified three affirmative defense provisions in the SIP for the state of New Mexico that apply in the Albuquerque-Bernalillo County area, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for these provisions. These provisions provide affirmative defenses available to sources for excess emissions that occur during malfunctions (20.11.49.16.A NMAC), during startup and shutdown (20.11.49.16.B NMAC) and during emergencies (20.11.49.16.C NMAC).

In this final action, the EPA is finding that the provisions in 20.11.49.16.A NMAC, 20.11.49.16.B NMAC and 20.11.49.16.C NMAC are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. The EPA notes that removal of 20.11.49.16.A NMAC, 20.11.49.16.B NMAC and 20.11.49.16.C NMAC from the SIP will render 20.11.49.16.D NMAC, 20.11.49.16.E, 20.11.49.15.B (15) (concerning reporting by a source of intent to assert an affirmative defense for a violation), a portion of 20.11.49.6 NMAC (concerning the objective of establishing affirmative defense provisions) and 20.11.49.18 NMAC (concerning actions where a determination has been made under 20.11.49.16.E NMAC) superfluous and no longer operative, and the EPA thus recommends that these provisions be removed as well. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the New Mexico SIP that the

EPA received and considered during the development of this rulemaking.

### 5. Oklahoma

As described in section IX.G.4 of the February 2013 proposal, the Petitioner objected to two provisions in the Oklahoma SIP that together allow for discretionary exemptions from emission limitations during startup, shutdown, maintenance and malfunctions (OAC 252:100-9-3(a) and OAC 252:100-9-3(b)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to OAC 252:100-9-3(a) and OAC 252:100-9-3(b).

Consequently, the EPA proposed to find that OAC 252:100-9-3(a) and OAC 252:100-9-3(b) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to OAC 252:100-9-3(a) and OAC 252:100-9-3(b). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Oklahoma SIP that the EPA received and considered during the development of this rulemaking.

### 6. Texas

The Petitioner did not identify in the June 2011 petition any provisions in the SIP for the state of Texas, which is why this state was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified four affirmative defense provisions in the SIP for the state of Texas, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for these provisions. These provisions provide affirmative defenses available to sources for excess emissions that occur during upsets (30 TAC 101.222(b)), unplanned events (30 TAC 101.222(c)), upsets with respect to opacity limits (30 TAC 101.222(d)) and unplanned events with respect to opacity limits (30 TAC 101.222(e)).

In this final action, the EPA is finding that the provisions in 30 TAC 101.222(b), 30 TAC 101.222(c), 30 TAC 101.222(d) and 30 TAC 101.222(e) are substantially inadequate to meet CAA requirements and the EPA is thus



issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Texas SIP that the EPA received and considered during the development of this rulemaking.

#### *H. Affected States in EPA Region VII*

##### **1. Iowa**

As described in section IX.H.1 of the February 2013 proposal, the Petitioner objected to a specific provision in the Iowa SIP that allows for automatic exemptions from otherwise applicable SIP emission limitations during periods of startup, shutdown or cleaning of control equipment (Iowa Admin. Code r. 567–24.1(1)). Also, the Petitioner objected to a provision that empowers the state to exercise enforcement discretion for violations of the otherwise applicable SIP emission limitations during malfunction periods (Iowa Admin. Code r. 567–24.1(4)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Iowa Admin. Code r. 567–24.1(1) on the basis that this provision allows for exemptions from the otherwise applicable SIP emission limitations. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Iowa Admin. Code r. 567–24.1(4) on the basis that the provision is on its face clearly applicable only to Iowa state enforcement personnel and that the provision thus could not reasonably be read by a court to foreclose enforcement by the EPA or through a citizen suit where Iowa state personnel elect to exercise enforcement discretion.

Consequently, the EPA proposed to find that Iowa Admin. Code r. 567–24.1(1) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Iowa Admin. Code r. 567–24.1(1). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. Also in this final action, the EPA is denying the Petition with respect to Iowa Admin. Code r. 567–24.1(4). This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document

available in the docket for this rulemaking concerning any comments specific to the Iowa SIP that the EPA received and considered during the development of this rulemaking.

##### **2. Kansas**

As described in section IX.H.2 of the February 2013 proposal, the Petitioner objected to three provisions in the Kansas SIP that allow for exemptions for excess emissions during malfunctions and necessary repairs (K.A.R. § 28–19–11(A)), scheduled maintenance (K.A.R. § 28–19–11(B)), and certain routine modes of operation (K.A.R. § 28–19–11(C)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to K.A.R. § 28–19–11(A), K.A.R. § 28–19–11(B) and K.A.R. § 28–19–11(C).

Consequently, the EPA proposed to find that K.A.R. § 28–19–11(A), K.A.R. § 28–19–11(B) and K.A.R. § 28–19–11(C) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to K.A.R. § 28–19–11(A), K.A.R. § 28–19–11(B) and K.A.R. § 28–19–11(C). Accordingly, the EPA is finding that these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Kansas SIP that the EPA received and considered during the development of this rulemaking.

##### **3. Missouri**

As described in section IX.H.3 of the February 2013 proposal, the Petitioner objected to two provisions in the Missouri SIP that could be interpreted to provide discretionary exemptions. The first provides exemptions for visible emissions exceeding otherwise applicable SIP opacity limitations (Mo. Code Regs. Ann. tit 10, § 10–6.220(3)(C)). The second provides authorization to state personnel to decide whether excess emissions “warrant enforcement action” where a source submits information to the state showing that such emissions were “the consequence of a malfunction, start-up or shutdown.” (Mo. Code Regs. Ann. tit 10, § 10–6.050(3)(C)).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Mo. Code Regs. Ann. tit 10, § 10–6.220(3)(C) on the basis that this provision could be read to allow for exemptions from the otherwise applicable SIP emission limitations through a state official’s unilateral exercise of discretionary authority that is insufficiently bounded and includes no additional public process at the state or federal level. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Mo. Code Regs. Ann. tit 10, § 10–6.050(3)(C) on the basis that the provision is on its face clearly applicable only to Missouri state enforcement personnel and that the provision thus could not reasonably be read by a court to foreclose enforcement by the EPA or through a citizen suit where Missouri state personnel elect to exercise enforcement discretion.

Consequently, the EPA proposed to find that the provision in Mo. Code Regs. Ann. tit 10, § 10–6.220(3)(C) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Mo. Code Regs. Ann. tit 10, § 10–6.220(3)(C). Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. Also in this final action, the EPA is denying the Petition with respect to Mo. Code Regs. Ann. tit 10, § 10–6.050(3)(C). This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Missouri SIP that the EPA received and considered during the development of this rulemaking.

##### **4. Nebraska**

As described in section IX.H.4 of the February 2013 proposal, the Petitioner objected to two provisions in the Nebraska SIP. First, the Petitioner objected to a generally applicable provision that provides authorization to state personnel to decide whether excess emissions “warrant enforcement action” where a source submits information to the state showing that such emissions were “the result of a malfunction, start-up or shutdown” (Neb. Admin. Code Title 129 § 11–35.001). Second, the Petitioner objected to a specific provision in Nebraska state law that contains exemptions for excess emissions at hospital/medical/infectious

waste incinerators (HMIWI) during SSM (Neb. Admin. Code Title 129 § 18–004.02).

For reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Neb. Admin. Code Title 129 § 11–35.001. Also for reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Neb. Admin. Code Title 129 § 18–004.02 on the basis that this regulation is not part of the Nebraska SIP and thus cannot represent an inadequacy in the SIP.

In this final action, the EPA is denying the Petition with respect to Neb. Admin. Code Title 129, Chapter 35, Section 001 (correction to citation, as per comment received from Nebraska DEQ, from earlier identification as Neb. Admin. Code Title 129 § 11–35.001) and Neb. Admin. Code Title 129 § 18–004.02.

This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any other comments specific to the Nebraska SIP that the EPA received and considered during the development of this rulemaking.

#### 5. Nebraska: Lincoln-Lancaster

As described in section IX.H.5 of the February 2013 proposal, the Petitioner objected to a generally applicable provision in the Lincoln-Lancaster County Air Pollution Control Program (Art. 2 § 35), which governs the Lincoln-Lancaster County Air Pollution Control District of Nebraska, that is parallel “in all aspects pertinent to this analysis” to Neb. Admin. Code Title 129 § 11–35.001. (Note that as per comment subsequently received from Nebraska DEQ, the correct citation is Neb. Admin. Code Title 129, Chapter 35, Section 001.)

For reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Art. 2 § 35, on the basis that this provision is on its face clearly applicable only to Lincoln-Lancaster County enforcement personnel and that the provision thus could not reasonably be read by a court to foreclose enforcement by the EPA or through a citizen suit where personnel from Lincoln-Lancaster County elect not to bring an enforcement action.

In this final action, the EPA is denying the Petition with respect to Art. 2 § 35. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document

available in the docket for this rulemaking concerning any other comments specific to the Nebraska SIP that the EPA received and considered during the development of this rulemaking.

#### *I. Affected States in EPA Region VIII*

##### 1. Colorado

As described in section IX.I.1 of the February 2013 proposal, the Petitioner objected to two affirmative defense provisions in the Colorado SIP that provide for affirmative defenses to qualifying sources during malfunctions (5 Colo. Code Regs § 1001–2(II.E)) and during periods of startup and shutdown (5 Colo. Code Regs § 1001–2(II.J)).

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to 5 Colo. Code Regs § 1001–2(II.J). Also for reasons explained in the February 2013 proposal, the EPA proposed to deny the Petition with respect to 5 Colo. Code Regs § 1001–2(II.E) on the basis that it included an affirmative defense applicable to malfunction events that was consistent with the requirements of the CAA as interpreted by the EPA in the 1999 SSM Guidance.

Subsequently, for reasons explained fully in the SNPR, the EPA republished granting of the Petition with respect to the affirmative defense provision in 5 Colo. Code Regs § 1001–2(II.J) applicable to startup and shutdown, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision. Also for reasons explained in the SNPR, the EPA reversed its prior proposed denial of the Petition with respect to the affirmative defense provision 5 Colo. Code Regs § 1001–2(II.E) applicable to malfunctions.

Consequently, the EPA proposed to find that the provisions in 5 Colo. Code Regs § 1001–2(II.J) and 5 Colo. Code Regs § 1001–2(II.E) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to 5 Colo. Code Regs § 1001–2(II.J) and 5 Colo. Code Regs § 1001–2(II.E). Accordingly, the EPA is finding that the provisions in 5 Colo. Code Regs § 1001–2(II.J) and 5 Colo. Code Regs § 1001–2(II.E) are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call to Colorado to correct its SIP with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to

Comment document available in the docket for this rulemaking concerning any comments specific to the Colorado SIP that the EPA received and considered during the development of this rulemaking.

##### 2. Montana

As described in section IX.I.2 of the February 2013 proposal, the Petitioner objected to an exemption from otherwise applicable emission limitations for aluminum plants during startup and shutdown (Montana Admin. R 17.8.334).

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to ARM 17.8.334.

Consequently, the EPA proposed to find that ARM 17.8.334 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to ARM 17.8.334. Accordingly, the EPA is finding that ARM 17.8.334 is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Montana SIP that the EPA received and considered during the development of this rulemaking.

##### 3. North Dakota

As described in section IX.I.3 of the February 2013 proposal, the Petitioner objected to two provisions in the North Dakota SIP that create exemptions from otherwise applicable emission limitations. The first provision creates exemptions from a number of cross-referenced opacity limits “where the limits specified in this article cannot be met because of operations and processes such as, but not limited to, oil field service and drilling operations, but only so long as it is not technically feasible to meet said specifications” (N.D. Admin. Code § 33–15–03–04(4)). The second provision creates an implicit exemption for “temporary operational breakdowns or cleaning of air pollution equipment” if the source meets certain conditions (N.D. Admin. Code § 33–15–05–01(2)(a)(1)).

For reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to N.D. Admin. Code 33–15–03–04.4 (cited in the Petition as N.D. Admin. Code § 33–15–03–04(4)) and also with respect to a

provision to which the Petitioner cited but did not explicitly object, N.D. Admin. Code 33–15–03–04.3 (cited in the Petition as N.D. Admin. Code § 33–15–03–04(3)). Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to N.D. Admin. Code 33–15–05–01.2a(1) (cited in the Petition as N.D. Admin. Code § 33–15–05–01(2)(a)(1)).

Subsequently, the state of North Dakota removed N.D. Admin. Code 33–15–03–04.4 and N.D. Admin. Code 33–15–05–01.2.a(1) and eliminated the SIP inadequacies with respect to those two of the three provisions identified in the February 2013 proposal notice. The EPA has already approved the necessary SIP revisions for those two provisions.<sup>397</sup> Thus, the EPA's final action on the Petition does not need to include a finding of substantial inadequacy and SIP call for those two provisions.

In this final action, the EPA is granting the Petition with respect to N.D. Admin. Code 33–15–03–04.3 and denying the Petition with respect to N.D. Admin. Code 33–15–03–04.4 and N.D. Admin. Code 33–15–05–01.2.a(1). Accordingly, the EPA is finding that the provision in N.D. Admin. Code 33–15–03–04.3 is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call to North Dakota to correct its SIP with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 with respect to this provision. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the North Dakota SIP that the EPA received and considered during the development of this rulemaking.

#### 4. South Dakota

As described in section IX.I.4 of the February 2013 proposal, the Petitioner objected to a provision in the South Dakota SIP that creates exemptions from otherwise applicable SIP emission limitations (S.D. Admin. R. 74:36:12:02(3)). The Petitioner asserted that the provision imposes visible emission limitations on sources but explicitly excludes emissions that occur “for brief periods during such operations as soot blowing, start-up, shut-down, and malfunctions.”

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to S.D. Admin. R. 74:36:12:02(3).

Consequently, the EPA proposed to find that S.D. Admin. R. 74:36:12:02(3) is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to S.D. Admin. R. 74:36:12:02(3). Accordingly, the EPA is finding that S.D. Admin. R. 74:36:12:02(3) is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the South Dakota SIP that the EPA received and considered during the development of this rulemaking.

#### 5. Wyoming

As described in section IX.I.5 of the February 2013 proposal, the Petitioner objected to a specific provision in the Wyoming SIP that provides an exemption for excess PM emissions from diesel engines during startup, malfunction and maintenance (WAQSR Chapter 3, section 2(d), cited as ENV–AQ–1 Wyo. Code R. § 2(d) in the Petition). The provision exempts emission of visible air pollutants from diesel engines from applicable SIP limitations “during a reasonable period of warmup following a cold start or where undergoing repairs and adjustment following malfunction.”

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to WAQSR Chapter 3, section 2(d) (cited as ENV–AQ–1 Wyo. Code R. § 2(d) in the Petition).

Subsequently, the state of Wyoming revised WAQSR Chapter 3, section 2(d) and eliminated the SIP inadequacies identified in the February 2013 proposal document with respect to this provision. The EPA has already approved the necessary SIP revision for this provision.<sup>398</sup> Thus, the EPA's final action on the Petition does not need to include a finding of substantial inadequacy and SIP call for this provision.

In this final action, the EPA is denying the Petition with respect to WAQSR Chapter 3, section 2(d). Please refer to the Response to Comment document available in the docket for this rulemaking concerning any

comments specific to the Wyoming SIP that the EPA received and considered during the development of this rulemaking.

#### *J. Affected States and Local Jurisdictions in EPA Region IX*

##### 1. Arizona

As described in section IX.J.1 of the February 2013 proposal, the Petitioner objected to two provisions in the Arizona Department of Air Quality's (ADEQ) Rule R18–2–310, which provide affirmative defenses for excess emissions during malfunctions (AAC Section R18–2–310(B)) and for excess emissions during startup or shutdown (AAC Section R18–2–310(C)).

For reasons explained in the February 2013 proposal, the EPA proposed to deny the Petition with respect to AAC Section R18–2–310(B) on the basis that it included an affirmative defense applicable to malfunction events that was consistent with the CAA as interpreted by the EPA in the 1999 SSM Guidance.

Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to AAC Section R18–2–310(C).

Subsequently, for reasons explained fully in the SNPR, the EPA reversed its prior proposed denial of the Petition with respect to the affirmative defense provision AAC Section R18–2–310(B) applicable to malfunctions. Also for reasons explained in the SNPR, the EPA repropose granting of the Petition with respect to the affirmative defense provision in AAC Section R18–2–310(C) applicable to startup and shutdown, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that the provisions in AAC Section R18–2–310(B) and AAC Section R18–2–310(C) are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to AAC Section R18–2–310(B) and AAC Section R18–2–310(C). Accordingly, the EPA is finding that the provisions in AAC Section R18–2–310(B) and AAC Section R18–2–310(C) are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments

<sup>397</sup> See “Approval and Promulgation of Implementation Plans; North Dakota; Revisions to the Air Pollution Control Rules,” 79 FR 63045 (October 22, 2014).

<sup>398</sup> See “Approval and Promulgation of Implementation Plans; Wyoming; Revisions to the Air Quality Standards and Regulations,” 79 FR 62859 (October 21, 2014).

specific to the Arizona SIP that the EPA received and considered during the development of this rulemaking.

2. Arizona: Maricopa County

As described in section IX.J.2 of the February 2013 proposal, the Petitioner objected to two provisions in the Maricopa County Air Pollution Control Regulations that provide affirmative defenses for excess emissions during malfunctions (Maricopa County Air Pollution Control Regulation 3, Rule 140, § 401) and for excess emissions during startup or shutdown (Maricopa County Air Pollution Control Regulation 3, Rule 140, § 402). These provisions in Maricopa County Air Quality Department (MCAQD) Rule 140 are similar to the affirmative defense provisions in ADEQ R18–2–310.

For reasons explained in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Maricopa County Air Pollution Control Regulation 3, Rule 140, § 401 on the basis that it included an affirmative defense applicable to malfunction events that was consistent with the CAA as interpreted by the EPA in the 1999 SSM Guidance. Also for reasons explained in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Maricopa County Air Pollution Control Regulation 3, Rule 140, § 402.

Subsequently, for reasons explained fully in the SNPR, the EPA reversed its prior proposed denial of the Petition with respect to the affirmative defense provision Maricopa County Air Pollution Control Regulation 3, Rule 140, § 401 applicable to malfunctions. Also for reasons explained in the SNPR, the EPA repoposed granting of the Petition with respect to the affirmative defense provision in Maricopa County Air Pollution Control Regulation 3, Rule 140, § 402 applicable to startup and shutdown, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that the provisions in Maricopa County Air Pollution Control Regulation 3, Rule 140, § 401 and Maricopa County Air Pollution Control Regulation 3, Rule 140, § 402 are substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to these provisions.

In this final action, the EPA is granting the Petition with respect to Maricopa County Air Pollution Control Regulation 3, Rule 140, § 401 and Maricopa County Air Pollution Control Regulation 3, Rule 140, § 402. Accordingly, the EPA is finding that

these provisions are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Arizona SIP that the EPA received and considered during the development of this rulemaking.

3. Arizona: Pima County

As described in section IX.J.3 of the February 2013 proposal, the Petitioner objected to a provision in the Pima County Department of Environmental Quality's (PCDEQ) Rule 706 that pertains to enforcement discretion.

For reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to PCDEQ Rule 706.

In this final action, the EPA is denying the Petition with respect to PCDEQ Rule 706. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Arizona SIP that the EPA received and considered during the development of this rulemaking.

4. California: Eastern Kern Air Pollution Control District

The Petitioner did not identify any provisions in the SIP for the state of California, which is why this state was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified an affirmative defense provision in the SIP for the state of California applicable in the Eastern Kern Air Pollution Control District (APCD), and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for this provision. The affirmative defense is included in Kern County "Rule 111 Equipment Breakdown." This SIP provision provides an affirmative defense available to sources for excess emissions that occur during a breakdown condition (*i.e.*, malfunction).

In this final action, the EPA is finding that Kern County Rule 111 Equipment Breakdown in the California SIP applicable in the Eastern Kern APCD<sup>399</sup>

<sup>399</sup> The EPA is in this final action making a finding of substantial inadequacy and issuing a SIP call for Kern County Rule 111 Equipment Breakdown in the California SIP as it applies in each the Eastern Kern APCD and the San Joaquin Valley Unified APCD.

is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the California SIP that the EPA received and considered during the development of this rulemaking.

5. California: Imperial County Air Pollution Control District

The Petitioner did not identify any provisions in the SIP for the state of California, which is why this state was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified an affirmative defense provision in the SIP for the state of California applicable in the Imperial Valley APCD, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for this provision. The affirmative defense is included in Imperial County "Rule 111 Equipment Breakdown." This SIP provision provides an affirmative defense available to sources for excess emissions that occur during a breakdown condition (*i.e.*, malfunction).

In this final action, the EPA is finding that Imperial County "Rule 111 Equipment Breakdown" in the California SIP applicable in the Imperial Valley APCD is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the California SIP that the EPA received and considered during the development of this rulemaking.

6. California: San Joaquin Valley Unified Air Pollution Control District

The Petitioner did not identify any provisions in the SIP for the state of California, which is why this state was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified affirmative defense provisions in the SIP for the state of California applicable in the San Joaquin Valley Unified APCD, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for these provisions. The affirmative defenses are included in: (i) Fresno County "Rule 110 Equipment

Breakdown"; (ii) Kern County "Rule 111 Equipment Breakdown"; (iii) Kings County "Rule 111 Equipment Breakdown"; (iv) Madera County "Rule 113 Equipment Breakdown"; (v) Stanislaus County "Rule 110 Equipment Breakdown"; and (vi) Tulare County "Rule 111 Equipment Breakdown."

Each of these SIP provisions provides an affirmative defense available to sources for excess emissions that occur during a breakdown condition (*i.e.*, malfunction).

In this final action, the EPA is finding that the following six provisions in the California SIP applicable in the San Joaquin Valley Unified APCD are substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to these provisions: (i) Fresno County "Rule 110 Equipment Breakdown"; (ii) Kern County "Rule 111 Equipment Breakdown"; (iii) Kings County "Rule 111 Equipment Breakdown"; (iv) Madera County "Rule 113 Equipment Breakdown"; (v) Stanislaus County "Rule 110 Equipment Breakdown"; and (vi) Tulare County "Rule 111 Equipment Breakdown."<sup>400</sup> This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the California SIP that the EPA received and considered during the development of this rulemaking.

#### K. Affected States in EPA Region X

##### 1. Alaska

As described in section IX.K.1 of the February 2013 proposal, the Petitioner objected to a provision in the Alaska SIP that provides an excuse for "unavoidable" excess emissions that occur during SSM events, including startup, shutdown, scheduled maintenance and "upsets" (Alaska Admin. Code tit. 18 § 50.240). The provision provides: "Excess emissions determined to be unavoidable under this section will be excused and are not subject to penalty. This section does not limit the department's power to enjoin the emission or require corrective action." The Petitioner also stated that the provision is worded as if it were an affirmative defense but it uses criteria for enforcement discretion.

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with

respect to Alaska Admin. Code tit. 18 § 50.240 on the basis that, to the extent the provision was intended to be an affirmative defense, it was not a permissible affirmative defense provision consistent with the requirements of the CAA as interpreted in the EPA's 1999 SSM Guidance.

Subsequently, for reasons explained in the SNPR, the EPA repropoed granting of the Petition with respect to Alaska Admin. Code tit. 18 § 50.240, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that Alaska Admin. Code tit. 18 § 50.240 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

In this final action, the EPA is granting the Petition with respect to Alaska Admin. Code tit. 18 § 50.240. Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Alaska SIP that the EPA received and considered during the development of this rulemaking.

##### 2. Idaho

As described in section IX.K.2 of the February 2013 proposal, the Petitioner objected to a provision in the Idaho SIP that appears to grant enforcement discretion to the state as to whether to impose penalties for excess emissions during certain SSM events (Idaho Admin. Code r. 58.01.01.131).

For reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Idaho Admin. Code r. 58.01.01.131.

In this final action, the EPA is denying the Petition with respect to Idaho Admin. Code r. 58.01.01.131. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Idaho SIP that the EPA received and considered during the development of this rulemaking.

##### 3. Oregon

As described in section IX.K.3 of the February 2013 proposal, the Petitioner objected to a provision in the Oregon

SIP that grants enforcement discretion to the state to pursue violations for excess emissions during certain SSM events (Or. Admin. R. 340-028-1450).

For reasons explained fully in the February 2013 proposal, the EPA proposed to deny the Petition with respect to Or. Admin. R. 340-028-1450.

In this final action, the EPA is denying the Petition with respect to Or. Admin. R. 340-028-1450. This action is fully consistent with what the EPA proposed in February 2013. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Oregon SIP that the EPA received and considered during the development of this rulemaking.

##### 4. Washington

As described in section IX.K.4 of the February 2013 proposal, the Petitioner objected to a provision in the Washington SIP that provides an excuse for "unavoidable" excess emissions that occur during certain SSM events, including startup, shutdown, scheduled maintenance and "upsets" (Wash. Admin. Code § 173-400-107). The provision provides that "[e]xcess emissions determined to be unavoidable under the procedures and criteria under this section shall be excused and are not subject to penalty." The Petitioner argued that this provision excuses excess emissions in violation of the CAA and the EPA's SSM Policy, which require all such emissions to be treated as violations of the applicable SIP emission limitations. The Petitioner also stated that the provision is worded as if it were an affirmative defense but it uses criteria for enforcement discretion.

For reasons explained fully in the February 2013 proposal, the EPA proposed to grant the Petition with respect to Wash. Admin. Code § 173-400-107 on the basis that, to the extent the provision was intended to be an affirmative defense, it was not a permissible affirmative defense provision consistent with the requirements of the CAA as interpreted in the EPA's 1999 SSM Guidance.

Subsequently, for reasons explained in the SNPR, the EPA repropoed granting of the Petition with respect to Wash. Admin. Code § 173-400-107, but it proposed to revise the basis for the finding of substantial inadequacy and the SIP call for this provision.

Consequently, the EPA proposed to find that Wash. Admin. Code § 173-400-107 is substantially inadequate to meet CAA requirements and thus proposed to issue a SIP call with respect to this provision.

<sup>400</sup> The EPA is in this final action making a finding of substantial inadequacy and issuing a SIP call for Kern County Rule 111 Equipment Breakdown in the California SIP as it applies in each the Eastern Kern APCD and the San Joaquin Valley Unified APCD.

In this final action, the EPA is granting the Petition with respect to Wash. Admin. Code § 173–400–107. Accordingly, the EPA is finding that this provision is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in February 2013 as revised in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Washington SIP that the EPA received and considered during the development of this rulemaking.

#### 5. Washington: Energy Facility Site Evaluation Council

The Petitioner did not identify any provisions in the SIP for the state of Washington that specifically apply to the Energy Facility Site Evaluation Council (EFSEC) area, which is why this area was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified affirmative defense provisions in the SIP for the state of Washington that relate to the EFSEC, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for these provisions in Wash. Admin. Code § 463–39–005. In the EFSEC portion of the SIP, Wash. Admin. Code § 463–39–005 adopts by reference Wash. Admin. Code § 173–400–107, thereby incorporating the affirmative defenses applicable to startup, shutdown, scheduled maintenance and “upsets” that the EPA is also finding substantially inadequate in Wash. Admin. Code § 173–400–107 (see section IX.K.4 of this document).

In this final action, the EPA is finding that Wash. Admin. Code § 463–39–005 is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Washington SIP that the EPA received and considered during the development of this rulemaking.

#### 6. Washington: Southwest Clean Air Agency

The Petitioner did not identify any provisions in the SIP for the state of Washington that specifically apply in the portion of the state regulated by the Southwest Clean Air Agency

(SWCAA),<sup>401</sup> which is why this area was not explicitly addressed in the February 2013 proposal.

Subsequently, for reasons explained fully in the SNPR, the EPA identified affirmative defense provisions in the SIP for the state of Washington that apply in the portion of the state regulated by SWCAA, and the EPA proposed to make a finding of substantial inadequacy and to issue a SIP call for these provisions. The affirmative defenses are included in the SIP in SWAPCA “400–107 Excess Emissions.” This SIP section provides an affirmative defense available to sources for excess emissions that occur during startup and shutdown, maintenance and “upsets” (*i.e.*, malfunctions). It is identical to Wash. Admin. Code § 173–400–107 in all respects except that SWAPCA 400–107(3) contains a more stringent requirement for the reporting of excess emissions.

In this final action, the EPA is finding that SWAPCA “400–107 Excess Emissions” in the Washington SIP applicable in the area regulated by SWCAA is substantially inadequate to meet CAA requirements and the EPA is thus issuing a SIP call with respect to this provision. This action is fully consistent with what the EPA proposed in the SNPR. Please refer to the Response to Comment document available in the docket for this rulemaking concerning any comments specific to the Washington SIP that the EPA received and considered during the development of this rulemaking.

### X. Implementation Aspects of EPA’s SSM SIP Policy

#### A. Recommendations Concerning Alternative Emission Limitations for Startup and Shutdown

In response to a SIP call concerning an existing automatic or discretionary exemption for excess emissions during SSM events, the EPA anticipates that a state may elect to create an alternative emission limitation that applies during startup and shutdown events (or during any other normal mode of operation during which the exemption may have applied) as a revised element or component of the existing emission limitation. The EPA emphasizes that states have discretion to revise the identified deficient provisions by any means they choose, so long as the revised provision is consistent with

CAA requirements for SIP provisions. If a state elects to create an alternative emission limitation to replace an existing exemption, there are several issues that the state should consider.

First, as explained in sections VII.B and XI of this document, the EPA has longstanding guidance that provides recommendations to states concerning the development of alternative emission limitations applicable during startup and shutdown to replace exemptions in existing SIP provisions. The EPA first provided this guidance in the 1999 SSM Guidance but has reiterated and clarified its guidance in this action. The EPA recommends that states consider the seven clarified criteria described in sections VII.B and XI of this document when developing new alternative emission limitations to replace automatic or discretionary exemptions, in order to assure that the revised provisions submitted to the EPA for approval meet basic CAA requirements for SIP emission limitations.

Second, the EPA reiterates that SIP emission limitations that are expressed as numerical limitations do not necessarily have to require the same numerical level of emissions during all modes of normal source operation. Under appropriate circumstances consistent with the criteria that the EPA recommends for alternative emission limitations, it may be appropriate to have a numerical emission limitation that has a higher numerical level applicable during specific modes of source operation, such as during startup and shutdown. For example, if a rate-based NO<sub>x</sub> emission limitation in the SIP applies to a specific source category, then it may be appropriate for that emission limitation to have a higher numerical standard applicable during defined periods of startup or shutdown. Such an approach can be consistent with SIP requirements, so long as that higher numerical level for startup or shutdown is properly established and is legally and practically enforceable, and so long as other overarching CAA requirements are also met. However, alternative emission limitations applicable during startup and shutdown cannot be inappropriately high or an effectively unlimited or uncontrolled level of emissions, as those would constitute impermissible *de facto* exemptions for emissions during certain modes of operation.

Third, the EPA reiterates that SIP emission limitations do not necessarily have to be expressed in terms of a numerical level of emissions. There are many sources for which a numerically expressed emission limitation will be the most appropriate and will result in

<sup>401</sup> The EPA notes that the SWCAA was formerly named, and in some places in the SIP still appears, as the “Southwest Air Pollution Control Authority” or “SWAPCA.” The EPA anticipates that the name will be updated in the SIP in due course as the state revises the SIP.

the most legally and practically enforceable SIP requirements.<sup>402</sup> However, the EPA recognizes that for some source categories, under some circumstances, it may be appropriate for the SIP emission limitation to include a specific technological control requirement or specific work practice requirement that applies during specified modes of source operation such as startup and shutdown. For example, if the otherwise applicable numerical SO<sub>2</sub> emission limitation in the SIP is not achievable, and the otherwise required SO<sub>2</sub> control measure is not effective during startup and shutdown and/or measurement of emissions during startup and shutdown is not reasonably feasible, then it may be appropriate for that emission limitation to impose a different control measure, such as use of low sulfur coal, applicable during defined periods of startup and shutdown in lieu of a numerically expressed emission limitation. Such an approach can be consistent with SIP requirements, so long as that alternative control measure applicable during startup and shutdown is properly established and is legally and practically enforceable as a component of the emission limitation, and so long as other overarching CAA requirements are also met.

Fourth, the EPA notes that revisions to replace existing automatic or discretionary exemptions for SSM events with alternative emission limitations applicable during startup and shutdown also need to meet the applicable overarching CAA requirements with respect to the SIP emission limitation at issue. For example, if the emission limitation is in the SIP to meet the requirement that the source category be subject to RACT level controls for NO<sub>x</sub> for purposes of the ozone NAAQS, then the state should assure that the higher numerical level or other control measure that will apply to NO<sub>x</sub> emissions during startup and shutdown does constitute a RACT level of control for such sources for such pollutant during such modes of operation.

Finally, the EPA notes that states should not replace automatic or discretionary exemptions for excess emissions during SSM events with alternative emission limitations that are

a generic requirement such as a “general duty to minimize emissions” provision or an “exercise good engineering judgment” provision.<sup>403</sup> While such provisions may serve an overarching purpose of encouraging sources to design, maintain and operate their sources correctly, such generic clauses are not a valid substitute for more specific emission limitations that apply during normal modes of operation such as startup and shutdown.

#### *B. Recommendations for Compliance With Section 110(l) and Section 193 for SIP Revisions*

In response to a SIP call for any type of deficient provision, the EPA anticipates that each state will determine the best way to revise its SIP provisions to bring them into compliance with CAA requirements. In this action the EPA is only identifying the provisions that need to be revised because they violate fundamental requirements of the CAA and providing guidance to states in the SSM Policy concerning the types of provisions that are and are not permissible with respect to the treatment of excess emissions during SSM events. The EPA recognizes that one important consideration for air agencies as they evaluate how best to revise their SIP provisions in response to this SIP call is the nature of the analysis that will be necessary for the resulting SIP revisions under section 110(l) and section 193. The EPA is therefore providing in this document general guidance on this important issue in order to assist states with SIP revisions in response to the SIP call.

Section 110(k)(3) directs the EPA to approve SIP submissions that comply with applicable CAA requirements and to disapprove those that do not. Under section 110(l), the EPA is prohibited from approving any SIP revision that would interfere with any applicable requirement concerning attainment and reasonable further progress or any other requirements of the CAA. To illustrate different ways in which section 110(l) and section 193 may apply in the evaluation of future SIP submissions in response to the SIP call, the EPA anticipates that there are several common scenarios that states may wish to consider when revising their SIPs:

*Example 1:* A state elects to revise an existing SIP provision by removing an existing automatic exemption provision, director’s discretion provision, enforcement discretion provision or

affirmative defense provision, without altering any other aspects of the SIP provision at issue (e.g., elects to retain the emission limitation for the source category but eliminate the exemption for emissions during SSM events). Although the EPA must review each SIP submission for compliance with section 110(l) and section 193 on the facts and circumstances of the revision, the Agency believes in general that this type of SIP revision should not entail a complicated analysis to meet these statutory requirements. Presumably, removal of the impermissible components of preexisting SIP provisions would not constitute backsliding, would in fact strengthen the SIP and would be consistent with the overarching requirement that the SIP revision be consistent with the requirements of the CAA. Accordingly, the EPA believes that this type of SIP revision should not entail a complicated analysis for purposes of section 110(l). If the SIP revision is also governed by section 193, then elimination of the deficiency will likewise presumably result in equal or greater emission reductions and thus comply with section 193 without the need for a more complicated analysis. The EPA has recently evaluated a SIP revision to remove specific SSM deficiencies in this manner.<sup>404</sup>

*Example 2:* A state elects to revise its SIP provision by replacing an automatic exemption for excess emissions during startup and shutdown events with an appropriate alternative emission limitation (e.g., a different numerical limitation or different other control requirement) that is explicitly applicable during startup and shutdown as a component of the revised emission limitation. Although the EPA must review each SIP revision for compliance with section 110(l) and section 193 on the facts and circumstances of the revision, the Agency believes in general that this type of SIP revision should not entail a complicated analysis to meet these statutory requirements. Presumably, the replacement of an automatic exemption applicable to startup and shutdown with an appropriate alternative emission limitation would not constitute backsliding, would strengthen the SIP and would be consistent with the overarching requirement that the SIP revision be consistent with the

<sup>402</sup> The EPA notes that in the CAA there is a presumption in favor of numerical emission limitations for purposes of section 112 and section 169, but section 110(a) does not include such an explicit presumption. However, there may be sources for which a numerically expressed emission limitation is the one that is most legally and practically enforceable, even during startup and shutdown, and for which a numerically expressed emission limitation is thus most appropriate.

<sup>403</sup> The EPA notes that the “general duty” imposed under CAA section 112(r) is a separate standard, in addition to the otherwise applicable emission limitations and is not in lieu of those requirements.

<sup>404</sup> See “Approval and Promulgation of Implementation Plans; Kentucky; Approval of Revisions to the Jefferson County Portion of the Kentucky SIP; Emissions During Startups, Shutdowns, and Malfunctions,” proposed at 78 FR 29683 (May 21, 2013), finalized at 79 FR 33101 (June 10, 2014).



requirements of the CAA. The state should develop that alternative emission limitation in accordance with the EPA's guidance recommendations for such provisions to assure that it would meet CAA requirements.<sup>405</sup> In addition, that alternative emission limitation would both need to meet the overarching CAA applicable requirements that the emission limitation is designed and intended to meet (e.g., RACT-level controls for the source category in an attainment area for a NAAQS) and need to be legally and practically enforceable (e.g., have adequate recordkeeping, reporting, monitoring or other features requisite for enforcement). If a state has developed the alternative emission limitation consistent with these criteria, then the EPA anticipates that the revision of the emission limitation to replace the exemption with an alternative emission limitation applicable to startup and shutdown would not be backsliding, would be a strengthening of the SIP and would be consistent with the requirement of section 110(l) that a SIP revision be consistent with the requirements of the CAA. Similarly, if section 193 applies to the emission limitation that the state is revising, then the replacement of an exemption applicable to emissions during startup and shutdown with an appropriately developed alternative emission limitation that explicitly applies during startup and shutdown would presumably result in equal or greater emission reductions and thus should meet the requirements of section 193 without the need for a more complicated analysis.

*Example 3:* A state elects to revise an existing SIP provision not merely by removal of an existing automatic exemption provision, director's discretion provision, enforcement defense provision, but by the removal of the deficiency combined with a total revision of the emission limitation. The EPA anticipates that there may be emission limitations for which a state may elect to do such a wholesale revision of the SIP provision as part of eliminating an impermissible component of the existing provision (e.g., removal of an automatic exemption applicable to emissions during SSM events through a complete revision of the emission limitation to create a different emission limitation that applies at all times, including during SSM events). In developing a completely revised SIP provision, the

state should assure that the replacement provision meets the applicable overarching CAA requirements that the provision is designed and intended to meet, is legally and practically enforceable and is not less stringent than the prior SIP provision. The EPA believes in general that this type of SIP revision may require a more in-depth analysis to meet these statutory requirements of section 110(l) and section 193. To the extent that there is any concern that the revised SIP provision is less stringent than the provision it replaces, then there will need to be a careful evaluation as to whether the revised provision would interfere with any applicable requirement concerning attainment and reasonable further progress and with any other applicable requirement of the CAA. Presumably, however, so long as the state has properly developed the revised emission limitation to assure that it meets the overarching CAA requirements and to assure that it will not result in a less stringent emission limitation, then the complete revision of the emission limitation would not constitute backsliding, would be a strengthening of the SIP and thereby would comply with section 110(l). If the SIP revision is also governed by section 193, then there will also need to be an analysis to assure that the revision will result in equal or greater emission reductions and thus comply with section 193. To the extent that there is concern that the revision would result in a less stringent emission limitation than the preexisting emission limitation, then a more complex analysis would likely be required.

The EPA emphasizes that each SIP revision must be evaluated for compliance with section 110(l) and section 193 on the facts and circumstances of the specific revision, but these examples are intended to provide general guidance on the considerations and the nature of the analysis that may be appropriate for different types of SIP revisions. States should contact their respective EPA Regional Offices (see the **SUPPLEMENTARY INFORMATION** section of this document) for further recommendations and assistance concerning the analysis appropriate for specific SIP revisions in response to this SIP call.

#### **XI. Statement of the EPA's SSM SIP Policy as of 2015**

The EPA's longstanding interpretation of the CAA is that SIP provisions cannot include exemptions from emission limitations for emissions during SSM events. In order to be permissible in a

SIP, an emission limitation must be applicable to the source continuously, *i.e.*, cannot include periods during which emissions from the source are legally or functionally exempt from regulation. Regardless of its form, a fully approvable SIP emission limitation must also meet all substantive requirements of the CAA applicable to such a SIP provision, e.g., the statutory requirement of section 172(c)(1) for imposition of RACM and RACT on sources located in designated nonattainment areas.

This section of the document provides more specific guidance on the appropriate treatment of emissions during SSM events in SIP provisions, replacing the EPA's prior guidance issued in memoranda of 1982, 1983, 1999 and 2001. The more extended explanations and interpretations provided in other sections of this document are also applicable, should a situation arise that is not sufficiently covered by this section's more concise policy statement. This SSM Policy as of 2015 is a policy statement and thus constitutes guidance. As guidance, this SSM Policy as of 2015 does not bind states, the EPA or other parties, but it does reflect the EPA's interpretation of the statutory requirements of the CAA. The EPA's evaluation of any SIP provision, whether prospectively in the case of a new provision in a SIP submission or retrospectively in the case of a previously approved SIP submission, must be conducted through a notice-and-comment rulemaking in which the EPA will determine whether a given SIP provision is consistent with the requirements of the CAA and applicable regulations.

#### *A. Definitions*

The term *alternative emission limitation* means, in this document, an emission limitation in a SIP that applies to a source during some but not all periods of normal operation (e.g., applies only during a specifically defined mode of operation such as startup or shutdown). An alternative emission limitation is a component of a continuously applicable SIP emission limitation, and it may take the form of a control measure such as a design, equipment, work practice or operational standard (whether or not numerical). This definition of the term is independent of the statutory use of the term "alternative means of emission limitation" in sections 111(h)(3) and 112(h)(3), which pertain to the conditions under which the EPA may pursuant to sections 111 and 112 promulgate emission limitations, or components of emission limitations,

<sup>405</sup> These recommendations are discussed in detail in section VII.B.2 of this document.

that are not necessarily in numeric format.

The term *automatic exemption* means a generally applicable provision in a SIP that would provide that if certain conditions existed during a period of excess emissions, then those exceedances would not be considered violations of the applicable emission limitations.

The term *director's discretion provision* means, in general, a regulatory provision that authorizes a state regulatory official unilaterally to grant exemptions or variances from otherwise applicable emission limitations or control measures, or to excuse noncompliance with otherwise applicable emission limitations or control measures, which would be binding on the EPA and the public.

The term *emission limitation* means, in the context of a SIP, a legally binding restriction on emissions from a source or source category, such as a numerical emission limitation, a numerical emission limitation with higher or lower levels applicable during specific modes of source operation, a specific technological control measure requirement, a work practice standard, or a combination of these things as components of a comprehensive and continuous emission limitation in a SIP provision. In this respect, the term *emission limitation* is defined as in section 302(k) of the CAA. By definition, an emission limitation can take various forms or a combination of forms, but in order to be permissible in a SIP it must be applicable to the source continuously, *i.e.*, cannot include periods during which emissions from the source are legally or functionally exempt from regulation. Regardless of its form, a fully approvable SIP emission limitation must also meet all substantive requirements of the CAA applicable to such a SIP provision, *e.g.*, the statutory requirement of section 172(c)(1) for imposition of reasonably available control measures and reasonably available control technology (RACT and RACT) on sources located in designated nonattainment areas.

The term *excess emissions* means the emissions of air pollutants from a source that exceed any applicable SIP emission limitation. In particular, this term includes those emissions above the otherwise applicable SIP emission limitation that occur during startup, shutdown, malfunction or other modes of source operation, *i.e.*, emissions that would be considered violations of the applicable emission limitation but for an impermissible automatic or discretionary exemption from such emission limitation.

The term *malfunction* means a sudden and unavoidable breakdown of process or control equipment.

The term *shutdown* means, generally, the cessation of operation of a source for any reason. In this document, the EPA uses this term in the generic sense. In individual SIP provisions it may be appropriate to include a specifically tailored definition of this term to address a particular source category for a particular purpose.

The term *SSM* refers to startup, shutdown or malfunction at a source. It does not include periods of maintenance at such a source. An SSM event is a period of startup, shutdown or malfunction during which there are exceedances of the applicable emission limitations and thus excess emissions.

The term *startup* means, generally, the setting in operation of a source for any reason. In this document, the EPA uses this term in the generic sense. In an individual SIP provision it may be appropriate to include a specifically tailored definition of this term to address a particular source category for a particular purpose.

*B. Emission Limitations in SIPs Must Apply Continuously During All Modes of Operation, Without Automatic or Discretionary Exemptions or Overly Broad Enforcement Discretion Provisions That Would Bar Enforcement by the EPA or by Other Parties in Federal Court Through a Citizen Suit*

In accordance with CAA section 302(k), SIPs must contain emission limitations that "limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis." All of the specific requirements of a SIP emission limitation must be discernible in the SIP, for clarity preferably within a single section or provision; must meet the applicable substantive and stringency requirements of the CAA; and must be legally and practically enforceable.

To the extent that a SIP provision allows any period of time when a source is *not* subject to any requirement that limits emissions, the requirements limiting the source's emissions by definition cannot do so "on a continuous basis." Such a source would not be subject to an "emission limitation," as required by the definition of that term under section 302(k). However, the CAA allows SIP provisions that include numerical limitations, specific technological control requirements and/or work practice requirements that limit emissions during startup and shutdown as components of a continuously applicable emission limitation, as

discussed in section XI.C of this document.

Accordingly, automatic or discretionary exemption provisions applicable during SSM events are impermissible in SIPs. This impermissibility applies even for "brief" exemptions from limits on emissions, because such exemptions nevertheless render the limitation noncontinuous. Furthermore, the fact that a SIP provision includes prerequisites to qualifying for an SSM exemption does not mean those prerequisites are themselves an "alternative emission limitation" applicable during SSM events.

*Automatic exemptions.* A typical SIP provision that includes an impermissible automatic exemption would provide that a source has to meet a specific emission limitation during all modes of operation except startup, shutdown and malfunction; by definition any excess emissions during such events would not be violations and thus there could be no enforcement based on those excess emissions. With respect to automatic exemptions from emission limitations in SIPs, the EPA's longstanding interpretation of the CAA is that such exemptions are impermissible because they are inconsistent with the fundamental requirements of the CAA. Automatic exemptions from otherwise applicable emission limitations render those emission limitations less than continuous as required by CAA sections 302(k), 110(a)(2)(A) and 110(a)(2)(C), thereby inconsistent with a fundamental requirement of the CAA and thus substantially inadequate as contemplated in CAA section 110(k)(5).

*Discretionary exemptions.* A typical SIP provision that includes an impermissible "director's discretion" component would purport to authorize air agency personnel to modify existing SIP requirements under certain conditions, *e.g.*, to grant a variance from an otherwise applicable emission limitation if the source could not meet the requirement in certain circumstances.<sup>406</sup> Director's discretion provisions operate to allow air agency personnel to make unilateral decisions on an *ad hoc* basis, up to and including the granting of complete exemptions for

<sup>406</sup> The EPA notes that problematic "director's discretion" provisions are not limited only to those that purport to authorize alternative emission limitations from those required in a SIP. Other problematic director's discretion provisions include those that purport to provide for discretionary changes to other substantive requirements of the SIP, such as applicability, operating requirements, recordkeeping requirements, monitoring requirements, test methods or alternative compliance methods.

emissions during SSM events, thereby negating any possibility of enforcement for what would be violations of the otherwise applicable emission limitation. With respect to such director's discretion provisions in SIPs, the EPA interprets the CAA to prohibit these if they provide unbounded discretion to allow what would amount to a case-specific revision of the SIP without meeting the statutory requirements of the CAA for SIP revisions. In particular, the EPA interprets the CAA to preclude SIP provisions that provide director's discretion authority to create discretionary exemptions for violations when the CAA would not allow such exemptions in the first instance.

If an air agency elects to have SIP provisions that contain a director's discretion feature, then to be consistent with CAA requirements the provisions must be structured so that any resulting variances or other deviations from the emission limitation or other SIP requirements have no federal law validity, unless and until the EPA specifically approves that exercise of the director's discretion as a SIP revision. Barring such a later ratification by the EPA through a SIP revision, the exercise of director's discretion is only valid for state (or tribal) law purposes and would have no bearing in the event of an action to enforce the provision of the SIP as it was originally approved by the EPA.

*Adoption of the EPA's NSPS or NESHAP that have not yet been revised.* The EPA has recently begun revising and will continue to revise NSPS and NESHAP as needed, to make the EPA's regulations consistent with CAA requirements by removing exemptions and affirmative defense provisions applicable to SSM events, and generally on the same legal basis as for this action. A state should not submit an NSPS or NESHAP for inclusion into its SIP as an emission limitation (whether through incorporation by reference or otherwise) unless either: (i) That NSPS or NESHAP does not include an exemption or affirmative defense for SSM events; or (ii) the state takes action as part of the SIP submission to render such exemption or affirmative defense inapplicable to the SIP emission limitation. Because SIP provisions must apply continuously, including during SSM events, the EPA can no longer approve SIP submissions that include any emission limitations with such exemptions, even if those emission limitations are NSPS or NESHAP regulations that the EPA has not yet revised to make consistent with CAA requirements. Alternatively, states may elect to adopt an existing NSPS or

NESHAP as a SIP provision, so long as the SIP provision excludes the exemption or affirmative defense applicable to SSM events.<sup>407</sup> States may also wish to replace the SSM exemption in NSPS or NESHAP regulations with appropriately developed alternative emission limitations that apply during startup and shutdown in lieu of the SSM exemption. Otherwise, the EPA's approval of the deficient SSM exemption provisions into the SIP would contravene CAA requirements for SIP provisions and would potentially result in misinterpretation or misapplication of the standards by regulators, regulated entities, courts and members of the public. The EPA emphasizes that the inclusion of an NSPS or NESHAP as an emission limitation in a state's SIP is different and distinct from reliance on such standards indirectly, such as reliance on the NSPS or NESHAP as a source of emission reductions that may be taken into account for SIP planning purposes in emissions inventories or attainment demonstrations. For those uses, states may continue to rely on the EPA's NSPS and NESHAP regulations, even those that have not yet been revised to remove inappropriate exemptions, in accordance with the requirements applicable to those SIP planning functions.

*Other modes of normal operation.* SIPs also may not create automatic or discretionary exemptions from otherwise applicable emission limitations during periods such as "maintenance," "load change," "soot-blowing," "on-line operating changes" or other similar normal modes of operation. Like startup and shutdown, the EPA considers all of these to be modes of normal operation at a source, for which the source can be designed, operated and maintained in order to meet an applicable emission limitations and during which the source should be expected to control and minimize emissions. Excess emissions that occur during planned and predicted periods should be treated as violations of applicable emission limitations. Accordingly, exemptions for emissions during these periods of normal source operation are not consistent with CAA requirements.

<sup>407</sup> Under CAA section 116, states have the explicit general authority to regulate more stringently than the EPA. Indeed, under section 116 states can regulate sources subject to EPA regulations promulgated under section 111 or section 112 so long as they do not regulate them less stringently. According, the EPA believes that states may elect to adopt EPA regulations under section 111 or section 112 as SIP provisions and expressly eliminate the exemptions for emissions during SSM events.

It may be appropriate for an air agency to establish an alternative numerical limitation or other form of control measure that applies during these modes of source operation, as for startup and shutdown events, but any such alternative emission limitation should be developed using the same criteria that the EPA recommends for alternative emission limitations applicable during startup and shutdown. Similarly, any SIP provision that includes an emission limitation for sources that includes alternative emission limitations applicable to modes of operation such as "maintenance," "load change," "soot-blowing" or "on-line operating changes" must also meet the applicable level of stringency for that type of emission limitation and be practically and legally enforceable.

*C. Emission Limitations in SIPs May Contain Components Applicable to Different Modes of Operation That Take Different Forms, and Numerical Emission Limitations May Have Differing Levels and Forms for Different Modes of Operation*

There are approaches other than exemptions that would be consistent with CAA requirements for SIP provisions that states can use to address excess emissions during certain events. While automatic exemptions and director's discretion exemptions from otherwise applicable emission limitations for SSM events are not consistent with the CAA, SIPs may include criteria and procedures for the use of enforcement discretion by air agency personnel, as described in section XI.E of this document. Similarly, SIPs may, rather than exempt excess emissions, include emission limitations that subject those emissions to alternative numerical limitations or other control requirements during startup and shutdown events or other normal modes of operation, so long as those components of the emission limitations meet applicable CAA requirements and are legally and practically enforceable.

The EPA does not interpret section 110(a)(2) or section 302(k) to require that an emission limitation in a SIP provision be composed of a single, uniformly applicable numerical emission limitation. The text of section 110(a)(2) and section 302(k) does not require states to impose emission limitations that include a static, inflexible standard. The critical aspect for purposes of section 302(k) is that the SIP provision impose limits on emissions on a continuous basis, regardless of whether the emission

limitation as a whole is expressed numerically or as a combination of numerical limitations, specific control technology requirements and/or work practice requirements applicable during specific modes of operation, and regardless of whether the emission limitation is static or variable. Thus, emission limitations in SIP provisions do not have to be composed solely of numerical emission limitations applicable at all times. For example, so long as the SIP provision meets other applicable requirements, it may impose different numerical limitations for startup and shutdown. Also, for example, SIPs can contain numerical emission limitations applicable only to some periods and other forms of controls applicable only to some periods, with certain periods perhaps subject to both types of limitation. Thus, SIP emission limitations: (i) Do not need to be numerical in format; (ii) do not have to apply the same limitation (*e.g.*, numerical level) at all times; and (iii) may be composed of a combination of numerical limitations, specific technological control requirements and/or work practice requirements, with each component of the emission limitation applicable during a defined mode of source operation. In practice, it may be that numerical emission limitations are the most appropriate from a regulatory perspective (*e.g.*, to be legally and practically enforceable) and thus the emission limitation would need to be established in this form to meet CAA requirements. It is important to emphasize, however, that regardless of how the state structures or expresses a SIP emission limitation—whether solely as one numerical limitation, as a combination of different numerical limitations or as a combination of numerical limitations, specific technological control requirements and/or work practice requirements that apply during certain modes of operation such as startup and shutdown—the emission limitation as a whole must be continuous, must meet applicable CAA stringency requirements and must be legally and practically enforceable.<sup>408</sup>

Startup and shutdown are part of the normal operation of a source and should be accounted for in the design and

operation of the source.<sup>409</sup> It should be possible to determine an appropriate form and degree of emission control during startup and shutdown and to achieve that control on a regular basis. Thus, sources should be required to meet defined SIP emission limitations during startup and shutdown. However, the EPA interprets the CAA to permit SIP emission limitations that include alternative emission limitations specifically applicable during startup and shutdown. Regarding startup and shutdown periods, the EPA considers the following to be the correct approach to creating an emission limitation: (i) The emission limitation contains no exemption for emissions during SSM events; (ii) the component of any alternative emission limitation that applies during startup and shutdown is clearly stated and obviously is an emission limitation that applies to the source; (iii) the component of any alternative emission limitation that applies during startup and shutdown meets the applicable stringency level for this type of emission limitation; and (iv) the emission limitation contains requirements to make it legally and practically enforceable. Section XI.D of this document contains more specific recommendations to states for developing alternative emission limitations.

In contrast to startup and shutdown, a malfunction is unpredictable as to the timing of the start of the malfunction event, its duration and its exact nature. The effect of a malfunction on emissions is therefore unpredictable and variable, making the development of an alternative emission limitation for malfunctions problematic. There may be rare instances in which certain types of malfunctions at certain types of sources are foreseeable and foreseen and thus are an expected mode of source operation. In such circumstances, the EPA believes that sources should be expected to meet the otherwise applicable emission limitation in order to encourage sources to be properly designed, maintained and operated in order to prevent or minimize any such malfunctions. To the extent that a given type of malfunction is so foreseeable and foreseen that a state considers it a

normal mode of operation that is appropriate for a specifically designed alternative emission limitation, then such alternative should be developed in accordance with the recommended criteria for alternative emission limitations. The EPA does not believe that generic general-duty provisions, such as a general duty to minimize emissions, is sufficient as an alternative emission limitation for any type of event including malfunctions.

States developing SIP revisions to remove impermissible exemption provisions from emissions limitations may choose to consider reassessing particular emission limitations, for example to determine whether limits originally applicable only during non-SSM periods can be revised such that well-managed emissions during planned operations such as startup and shutdown would not exceed the revised emission limitation, while still protecting air quality and meeting other applicable CAA requirements. Such a revision of an emission limitation will need to be submitted as a SIP revision for EPA approval if the existing limitation to be changed is already included in the SIP or if the existing SIP relies on the particular existing emission limitation to meet a CAA requirement.

Some SIPs contain other generic regulatory requirements frequently referred to as “general duty” type requirements, such as a general duty to minimize emissions at all times, a general duty to use good engineering judgment at all times or a general duty not to cause a violation of the NAAQS at any time. To the extent that such other general-duty requirement is properly established and legally and practically enforceable, the EPA would agree that it may be an appropriate separate requirement to impose upon sources in addition to the (continuous) emission limitation. The EPA itself imposes separate general duties of this type in appropriate circumstances. The existence of these generic provisions does not, however, legitimize exemptions for emissions during SSM events in a SIP provision that imposes an emission limitation.

General-duty requirements that are not clearly part of or explicitly cross-referenced in a SIP emission limitation cannot be viewed as a component of a continuous emission limitation. Even if clearly part of or explicitly cross-referenced in the SIP emission limitation, however, a given general-duty requirement may not be consistent with the applicable stringency requirements for SIP provisions that should apply during startup and

<sup>408</sup> The EPA notes that CAA section 123 explicitly prohibits certain intermittent or supplemental controls on sources. In a situation where an emission limitation is continuous, by virtue of the fact that it has components applicable during all modes of source operation, the EPA would not interpret the components that applied only during certain modes of operation, *e.g.*, startup and shutdown, to be prohibited intermittent or supplemental controls.

<sup>409</sup> Every source is designed, maintained and operated with the expectation that the source will at least occasionally start up and shut down, and thus these modes of operation are “normal” in the sense that they are to be expected. The EPA uses this term in the ordinary sense of the word to distinguish between such predictable modes of source operation and genuine “malfunctions,” which are by definition supposed to be unpredictable and unforeseen events that could not have been precluded by proper source design, maintenance and operation.

shutdown. In general, the EPA believes that a legally and practically enforceable alternative emission limitation applicable during startup and shutdown should be expressed as a numerical limitation, a specific technological control requirement or a specific work practice applicable to affected sources during specifically defined periods or modes of operation. Accordingly, while states are free to include general-duty provisions in their SIPs as separate additional requirements, for example, to ensure that owners and operators act consistent with reasonable standards of care, the EPA does not recommend using these background standards to bridge unlawful interruptions in an emission limitation.<sup>410</sup>

#### *D. Recommendations for Development of Alternative Emission Limitations Applicable During Startup and Shutdown*

A state can develop special, alternative emission limitations that apply during startup or shutdown if the source cannot meet the otherwise applicable emission limitation in the SIP. SIP provisions may include alternative emission limitations for startup and shutdown as part of a continuously applicable emission limitation when properly developed and otherwise consistent with CAA requirements. However, if a non-numerical requirement does not itself (or in combination with other components of the emission limitation) limit the quantity, rate or concentration of air pollutants on a continuous basis, then the non-numerical standard (or overarching requirement) does not meet the statutory definition of an emission limitation under section 302(k).

In cases in which measurement of emissions during startup and/or shutdown is not reasonably feasible, it may be appropriate for an emission limitation to include as a component a control for startup and/or shutdown periods other than a numerically expressed emission limitation.

The federal NESHAP and NSPS regulations and the technical materials in the public record for those rules may provide assistance for states as they develop and consider emission limitations and alternative emission limitations for sources in their states,

and definitions of startup and shutdown events and work practices for them found in these regulations may be appropriate for adoption by the state in certain circumstances. In particular, the NSPS regulations should provide very relevant information for sources of the same type, size and control equipment type, even if the sources were not constructed or modified within a date range that would make them subject to the NSPS. The EPA therefore encourages states to explore these approaches.

The EPA recommends that, in order to be approvable (*i.e.*, meet CAA requirements), alternative requirements applicable to the source during startup and shutdown should be narrowly tailored and take into account considerations such as the technological limitations of the specific source category and the control technology that is feasible during startup and shutdown. The EPA recommends the following seven specific criteria as appropriate considerations for developing emission limitations in SIP provisions that apply during startup and shutdown:

(1) The revision is limited to specific, narrowly defined source categories using specific control strategies (*e.g.*, cogeneration facilities burning natural gas and using selective catalytic reduction);

(2) Use of the control strategy for this source category is technically infeasible during startup or shutdown periods;

(3) The alternative emission limitation requires that the frequency and duration of operation in startup or shutdown mode are minimized to the greatest extent practicable;

(4) As part of its justification of the SIP revision, the state analyzes the potential worst-case emissions that could occur during startup and shutdown based on the applicable alternative emission limitation;

(5) The alternative emission limitation requires that all possible steps are taken to minimize the impact of emissions during startup and shutdown on ambient air quality;

(6) The alternative emission limitation requires that, at all times, the facility is operated in a manner consistent with good practice for minimizing emissions and the source uses best efforts regarding planning, design, and operating procedures; and

(7) The alternative emission limitation requires that the owner or operator's actions during startup and shutdown periods are documented by properly signed, contemporaneous operating logs or other relevant evidence.

If a state elects to create an emission limitation with different levels of

control applicable during specifically defined periods of startup and shutdown than during other normal modes of operation, then the resulting emission limitation must meet the substantive requirements applicable to the type of SIP provision at issue, meet the applicable level of stringency for that type of emission limitation and be legally and practically enforceable. Alternative emission limitations applicable during startup and shutdown cannot allow an inappropriately high level of emissions or an effectively unlimited or uncontrolled level of emissions, as those would constitute impermissible *de facto* exemptions for emissions during certain modes of operation.

#### *E. Enforcement Discretion Provisions*

One approach other than exemptions that would be consistent with CAA requirements for SIP provisions that states can use to address excess emissions during SSM events is to include in the SIP criteria and procedures for the use of enforcement discretion by air agency personnel. SIPs may contain such provisions concerning the exercise of discretion by the air agency's own personnel, but such provisions cannot bar enforcement by the EPA or by other parties through a citizen suit.

Pursuant to the CAA, all parties with authority to bring an enforcement action to enforce SIP provisions (*i.e.*, the state, the EPA or any parties who qualify under the citizen suit provision of section 304) have enforcement discretion that they may exercise as they deem appropriate in any given circumstances. For example, if the event that causes excess emissions is an actual malfunction that occurred despite reasonable care by the source operator to avoid malfunctions, then each of these parties may decide that no enforcement action is warranted. In the event that any party decides that an enforcement action is warranted, then it has enforcement discretion with respect to what remedies to seek from the court for the violation (*e.g.*, injunctive relief, compliance order, monetary penalties or all of the above), as well as the type of injunctive relief and/or amount of monetary penalties sought.<sup>411</sup>

As part of state programs governing enforcement, states can include regulatory provisions or may adopt policies setting forth criteria for how they plan to exercise their own

<sup>410</sup> For example, the EPA has concerns the some general-duty provisions, if at any point relied upon as the sole requirement purportedly limiting emissions, could undermine the ability to ensure compliance with SIP emission limitations relied on to achieve the NAAQS and other relevant CAA requirements at all times. See section 110(a)(2)(A), (C); *US Magnesium, LLC v. EPA*, 690 F.3d 1157, 1161–62 (10th Cir. 2012).

<sup>411</sup> The EPA notes that only the state and the Agency have authority to seek criminal penalties for knowing and intentional violation of CAA requirements. The EPA has this explicit authority under CAA section 113(c).

enforcement authority. Under section 110(a)(2), states must have adequate authority to enforce provisions adopted into the SIP, but states can establish criteria for how they plan to exercise that authority. Such enforcement discretion provisions cannot, however, impinge upon the enforcement authority of the EPA or of others pursuant to the citizen suit provision of the CAA. Such enforcement discretion provisions in a SIP would be inconsistent with the enforcement structure provided in the CAA. Specifically, the statute provides explicit independent enforcement authority to the EPA under CAA section 113 and to citizens under CAA section 304. Thus, the CAA contemplates that the EPA and citizens have authority to pursue enforcement for a violation even if the state elects not to do so. The EPA and citizens, and any federal court in which they seek to pursue an enforcement claim for violation of SIP requirements, must retain the authority to evaluate independently whether a source's violation of an emission limitation warrants enforcement action. Potential for enforcement by the EPA or through a citizen suit provides an important safeguard in the event that the state lacks resources or ability to enforce violations and provides additional deterrence. Accordingly, a SIP provision that operates at the state's election to eliminate the authority of the EPA or the public to pursue enforcement actions in federal court would undermine the enforcement structure of the CAA and would thus be substantially inadequate to meet fundamental requirements of the CAA.

Also, states should not adopt overly broad enforcement discretion provisions for inclusion in their SIPs, even for their own personnel. Section 110(a)(2) requires states to have adequate enforcement authority, and overly broad enforcement discretion provisions would run afoul of this requirement if they have the effect of precluding adequate state authority to enforce SIP requirements. If such provisions are sufficiently specific, provide for sufficient public process and are sufficiently bounded, so that it is possible to anticipate at the time of the EPA's approval of the SIP provision how that provision will actually be applied and the potential adverse impacts thereof, then such a provision might meet basic CAA requirements. In essence, if it is possible to anticipate and evaluate in advance how the exercise of enforcement discretion could affect compliance with other CAA requirements, then it may be possible to determine in advance that the

preauthorized exercise of director's discretion will not interfere with other CAA requirements, such as providing for attainment and maintenance of the NAAQS.

When using enforcement discretion in determining whether an enforcement action is appropriate in the case of excess emissions during a malfunction, satisfaction of the following criteria should be considered:

(1) To the maximum extent practicable the air pollution control equipment, process equipment or processes were maintained and operated in a manner consistent with good practice for minimizing emissions;

(2) Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized, to the extent practicable, to ensure that such repairs were made as expeditiously as practicable;

(3) The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

(4) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality; and

(5) The excess emissions are not part of a recurring pattern indicative of inadequate design, operation or maintenance.

#### *F. Affirmative Defense Provisions in SIPs*

The EPA believes that SIP provisions that function to alter the jurisdiction or discretion of the federal courts under CAA section 113 and section 304 to determine liability and to impose remedies are inconsistent with fundamental legal requirements of the CAA, especially with respect to the enforcement regime explicitly created by statute. Affirmative defense provisions by their nature purport to limit or eliminate the authority of federal courts to find liability or to impose remedies through factual considerations that differ from, or are contrary to, the explicit grants of authority in section 113(b) and section 113(e). These provisions are not appropriate under the CAA, no matter what type of event they apply to, what criteria they contain or what forms of remedy they purport to limit or eliminate.

Section 113(b) provides courts with explicit jurisdiction to determine liability and to impose remedies of various kinds, including injunctive relief, compliance orders and monetary

penalties, in judicial enforcement proceedings. This grant of jurisdiction comes directly from Congress, and the EPA is not authorized to alter or eliminate this jurisdiction under the CAA or any other law. With respect to monetary penalties, CAA section 113(e) explicitly includes the factors that federal courts and the EPA are required to consider in the event of judicial or administrative enforcement for violations of CAA requirements, including SIP provisions. Because Congress has already given federal courts the jurisdiction to determine what monetary penalties are appropriate in the event of judicial enforcement for a violation of a SIP provision, neither the EPA nor states can alter or eliminate that jurisdiction by superimposing restrictions on that jurisdiction and discretion granted by Congress to the courts. Accordingly, pursuant to section 110(k) and section 110(l), the EPA cannot approve any such affirmative defense provision in a SIP. If such an affirmative defense provision is included in an existing SIP, the EPA has authority under section 110(k)(5) to require a state to remove that provision.

Couching an affirmative defense provision in terms of merely defining whether the emission limitation applies and thus whether there is a "violation," as suggested by some commenters, is also problematic. If there is no "violation" when certain criteria or conditions for an "affirmative defense" are met, then there is in effect no emission limitation that applies when the criteria or conditions are met; the affirmative defense thus operates to create an exemption from the emission limitation. As explained in the February 2013 proposal, the CAA requires that emission limitations must apply continuously and cannot contain exemptions, conditional or otherwise. This interpretation is consistent with the decision in *Sierra Club v. Johnson* concerning the term "emission limitation" in section 302(k).<sup>412</sup> Characterizing the exemptions as an "affirmative defense" runs afoul of the requirement that emission limitations must apply continuously.

The EPA wishes to be clear that the absence of affirmative defense provisions in SIPs does not alter the legal rights of sources under the CAA. In the event of an enforcement action for an exceedance of a SIP emission limitation, a source can elect to assert any common law or statutory defenses that it determines are supported, based upon the facts and circumstances surrounding the alleged violation.

<sup>412</sup> 551 F.3d 1019 (D.C. Cir. 2008).

Under section 113(b), courts have explicit authority to impose injunctive relief, issue compliance orders, assess monetary penalties or fees and impose any other appropriate relief. Under section 113(e), federal courts are required to consider the enumerated statutory factors when assessing monetary penalties, including “such other factors as justice may require.” For example, if the exceedance of the SIP emission limitation occurs due to a malfunction, that exceedance is a violation of the applicable emission limitation but the source retains the ability to defend itself in an enforcement action and to oppose the imposition of particular remedies or to seek the reduction or elimination of monetary penalties, based on the specific facts and circumstances of the event. Thus, elimination of a SIP affirmative defense provision that purported to take away the statutory jurisdiction of the federal court to exercise its authority to impose remedies does not disarm sources in potential enforcement actions. Sources retain all of the equitable arguments they could have made under an affirmative defense provision; they must simply make such arguments to the reviewing court as envisioned by Congress in section 113(b) and section 113(e).

Once impermissible SSM exemptions are removed from the SIP, then any excess emissions during such events may be the subject of an enforcement action, in which the parties may use any appropriate evidence to prove or disprove the existence and scope of the alleged violation and the appropriate remedy for an established violation. Any alleged violation of an applicable SIP emission limitation, if not conceded by the source, must be established by the party bearing the burden of proof in a legal proceeding. The degree to which evidence of an alleged violation may derive from a specific reference method or any other credible evidence must be determined based upon the facts and circumstances of the exceedance of the emission limitation at issue.<sup>413</sup> Congress vested the federal courts with the authority to judge how best to weigh the evidence in an enforcement action.

<sup>413</sup> For example, the degree to which data from continuous opacity monitoring systems (COMS) is evidence of violations of SIP opacity or PM mass emission limitations is a factual question that must be resolved on the facts and circumstances in the context of an enforcement action. See, e.g., *Sierra Club v. Pub. Serv. Co. of Colorado, Inc.*, 894 F.Supp. 1455 (D. Colo. 1995) (allowing use of COMS data to prove opacity limit violations).

### G. Anti-Backsliding Considerations

The EPA recognizes that one important consideration for air agencies as they evaluate how best to revise their SIP provisions in response to this SIP call is the nature of the analysis that will be necessary for the resulting SIP revisions under section 110(k)(3), section 110(l) and section 193. Under section 110(l), the EPA is prohibited from approving any SIP revision that would interfere with any applicable requirement concerning attainment and reasonable further progress or any other requirements of the CAA. Section 193 prohibits states from modifying regulations in place prior to November 15, 1990, unless the modification ensures equivalent or greater reductions of the pollutant. SIP revision must be evaluated for compliance with section 110(l) and section 193 on the facts and circumstances of the specific revision. Section X of this document provides three example scenarios in which a state might remove an impermissible SSM provision from its SIP, including how sections 110(l) and 193 considerations might apply. These examples are intended to provide general guidance on the considerations and the nature of the analysis that may be appropriate for different types of SIP revisions. Air agencies should contact their respective EPA Regional Offices (see the **SUPPLEMENTARY INFORMATION** section of this document) for further recommendations and assistance concerning the analysis appropriate for specific SIP revisions involving changes in SSM provisions.

### XII. Environmental Justice Consideration

The final action restates the EPA’s interpretation of the statutory requirements of the CAA. Through the SIP calls issued to certain states as part of this SIP call action under CAA section 110(k)(5), the EPA is only requiring each affected state to revise its SIP to comply with existing requirements of the CAA. The EPA’s action therefore leaves to each affected state the choice as to how to revise the SIP provision in question to make it consistent with CAA requirements and to determine, among other things, which of the several lawful approaches to the treatment of excess emissions during SSM events will be applied to particular sources. The EPA has not performed an environmental justice analysis for purposes of this action, because it cannot geographically locate or quantify the resulting source-specific emission reductions. Nevertheless, the EPA believes this action will provide

environmental protection for all areas of the country.

### XIII. References

The following is a list of documents that are specifically referenced in this document. Some listed documents also include a document ID number associated with the docket for this rulemaking.

1. 1982 SSM Guidance (Memorandum to Regional Administrators, Region I–X from Kathleen M. Bennett, Assistant Administrator for Air, Noise and Radiation, Subject: Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions, dated September 28, 1982), EPA–HQ–OAR–2012–0322–0005.
2. 1983 SSM Guidance (Memorandum to Regional Administrators, Region I–X from Kathleen M. Bennett, Assistant Administrator for Air, Noise and Radiation, Subject: Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions, dated February 15, 1983), EPA–HQ–OAR–2012–0322–0006.
3. 1999 SSM Guidance (Memorandum to EPA Regional Administrators, Regions I–X from Steven A. Herman and Robert Perciasepe, USEPA, Subject: State Implementation Plans: Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown, dated September 20, 1999), EPA–HQ–OAR–2012–0322–0007.
4. 2001 SSM Guidance (Memorandum to EPA Regional Administrators, Regions I–X from Eric Schaeffer, Director, Office of Regulatory Enforcement, Office of Enforcement and Compliance Assurance, and John S. Seitz, Director, Office of Air Quality Planning and Standards, Office of Air and Radiation, dated December 5, 2001), EPA–HQ–OAR–2012–0322–0038.
5. “Action to Ensure Authority To Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Substantial Inadequacy and SIP Call; Final rule,” 75 FR 77698 (December 13, 2010), EPA–HQ–OAR–2012–0322–0014.
6. *Am. Farm Bureau Fedn v. United States EPA*, 984 F.Supp.2d 289 (M.D. Pa. 2013).
7. *Appalachian Power Co. v. EPA*, 249 F.3d 1032 (D.C. Cir. 2001).
8. *Appalachian Power Co. v. EPA*, 251 F.3d 1026 (D.C. Cir. 2001).
9. “Approval and Disapproval and Promulgation of Air Quality Implementation Plans; Colorado; Revisions to Regulation 1; Notice of proposed rulemaking,” 75 FR 42342 (July 21, 2010), EPA–HQ–OAR–2012–0322–0015, finalized as proposed at 76 FR 4540 (January 26, 2011), EPA–HQ–OAR–2012–0322–0016.
10. “Approval and Promulgation of Air Quality Implementation Plans; New Hampshire; Reasonably Available Control Technology for the 1997 8-Hour Ozone Standard; Direct final rule,” 77 FR 66388 (November 5, 2012).



11. "Approval and Promulgation of Air Quality Implementation Plans; New Hampshire; Reasonably Available Control Technology Update To Address Control Techniques Guidelines Issued in 2006, 2007, and 2008; Direct final rule," 77 FR 66921 (November 8, 2012).
12. "Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; Redesignation, Maintenance Plan, and Emissions Inventories for Reading; Ozone Redesignations Policy Change; Final rule," 62 FR 24826 (May 7, 1997).
13. "Approval and Promulgation of Air Quality Implementation Plans; Utah; Redesignation Request and Maintenance Plan for Salt Lake County; Utah County; Ogden City PM<sub>10</sub> Nonattainment Area; Proposed rule," 74 FR 62717 (December 1, 2009).
14. "Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; State of Arizona; Redesignation of Phoenix-Mesa Area to Attainment for the 1997 8-Hour Ozone Standard; Final rule," 79 FR 55645 (September 17, 2014).
15. "Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Ohio; Redesignation of the Ohio Portion of the Huntington-Ashland 1997 Annual Fine Particulate Matter Nonattainment Area to Attainment; Final rule," 77 FR 76883 (December 31, 2012).
16. "Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; State of Arizona; Redesignation of the Phoenix-Mesa Nonattainment Area to Attainment for the 1997 8-Hour Ozone Standard; Proposed rule," 79 FR 16734 (March 26, 2014).
17. "Approval and Promulgation of Implementation Plans; Arkansas; Revisions for the Regulation and Permitting of Fine Particulate Matter; Final rule," 80 FR 11573 (March 4, 2015).
18. "Approval and Promulgation of Implementation Plans; Corrections to the Arizona and Nevada State Implementation Plans; Direct final rule," 74 FR 57051 (November 3, 2009), EPA-HQ-OAR-2012-0322-0018.
19. "Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; State of California; PM-10; Revision of Designation; Redesignation of the San Joaquin Valley Air Basin PM-10 Nonattainment Area to Attainment; Approval of PM-10 Maintenance Plan for the San Joaquin Valley Air Basin; Approval of Commitments for the East Kern PM-10 Nonattainment Area; Proposed rule," 73 FR 22307 (April 25, 2008).
20. "Approval and Promulgation of Implementation Plans; Kentucky; Approval of Revisions to the Jefferson County Portion of the Kentucky SIP; Emissions During Startups, Shutdowns, and Malfunctions," proposed at 78 FR 29683 (May 21, 2013) and finalized at 79 FR 33101 (June 10, 2014), EPA-HQ-OAR-2012-0322-0890.
21. "Approval and Promulgation of Implementation Plans; North Dakota; Revisions to the Air Pollution Control Rules; Final rule," 79 FR 63045 (October 22, 2014).
22. "Approval and Promulgation of Implementation Plans; Texas; Excess Emissions During Startup, Shutdown, Maintenance, and Malfunction Activities," 75 FR 68989 (November 10, 2010), EPA-HQ-OAR-2012-0322-0892.
23. "Approval and Promulgation of Implementation Plans; Texas; Revisions to the New Source Review (NSR) State Implementation Plan (SIP); Prevention of Significant Deterioration (PSD), Nonattainment NSR (NNSR) for the 1997 8-Hour Ozone Standard, NSR Reform, and a Standard Permit; Proposed rule," 74 FR 48467 (September 23, 2009).
24. "Approval and Promulgation of Implementation Plans; Wyoming; Revisions to the Air Quality Standards and Regulations," 79 FR 62859 (October 21, 2014).
25. "Approval and Promulgation of State Implementation Plans; Call for Sulfur Dioxide SIP Revisions for Billings/Laurel, MT [Montana]," 58 FR 41430 (August 4, 1993).
26. "Approval and Promulgation of State Implementation Plans; Michigan," 63 FR 8573 (February 20, 1998), EPA-HQ-OAR-2012-0322-0023.
27. *Arizona Public Service Co. v. EPA*, 562 F.3d 1116 (10th Cir. 2009).
28. *ATK Launch Systems, Inc. v. EPA*, 651 F.3d 1194 (10th Cir. 2011).
29. *Auer v. Robbins*, 519 U.S. 452 (1997).
30. CAA of 1970, Pub. L. 91-604, section 4(a), 84 Stat. 1676 (December 31, 1970).
31. *Catawba County, North Carolina v. EPA*, 571 F.3d 20 (D.C. Cir. 2009).
32. *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984).
33. "Clean Air Act Full Approval of Partial Operating Permit Program; Allegheny County; Pennsylvania; Direct final rule," 66 FR 55112 (November 1, 2001), EPA-HQ-OAR-2012-0322-0020.
34. *Conn. Light & Power Co. v. NRC*, 673 F.2d 525 (D.C. Cir. 1982).
35. "Correction of Implementation Plans; American Samoa, Arizona, California, Hawaii, and Nevada State Implementation Plans; Notice of proposed rulemaking," 61 FR 38664 (July 25, 1996), EPA-HQ-OAR-2012-0322-0034, finalized at 62 FR 34641 (June 27, 1997), EPA-HQ-OAR-2012-0322-0035.
36. "Corrections to the California State Implementation Plan," 69 FR 67062 (November 16, 2004), EPA-HQ-OAR-2012-0322-0017.
37. "Credible Evidence Revisions; Final rule," 62 FR 8314 (February 24, 1997).
38. "Draft Emissions Inventory Guidance for Implementation of Ozone [and Particulate Matter]\* National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations," April 11, 2014.
39. *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7 (D.C. Cir. 2012) *rev'd*, 134 S. Ct. 1584 (2014).
40. "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations," Appendix B, August 2005, EPA-454/R-05-001.
41. "Federal Implementation Plan for the Billings/Laurel, MT [Montana], Sulfur Dioxide Area," 73 FR 21418 (April 21, 2008), EPA-HQ-OAR-2012-0322-0009.
42. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009).
43. February 2013 proposal ("State Implementation Plans: Response to Petition for Rulemaking; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction; Proposed rule," 78 FR 12459, February 22, 2013), EPA-HQ-OAR-2012-0322-0055.
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#### XIV. Statutory and Executive Order Reviews

##### A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a "significant regulatory action" that was submitted to the Office of Management and Budget (OMB) for review because it raises novel legal or policy issues. Any changes made in response to OMB recommendations have been documented in the docket.

##### B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA. This action merely reiterates the EPA's interpretation of the statutory requirements of the CAA and does not require states to collect any additional information. Through the SIP calls issued to certain states as part of this action under CAA section 110(k)(5), the EPA is only requiring each affected state to revise its SIP to comply with existing requirements of the CAA.

##### C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. Any agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to this rule. This action

will not impose any requirements on small entities. Instead, the action merely reiterates the EPA's interpretation of the statutory requirements of the CAA. Through the SIP calls issued to certain states as part of this SIP call action under CAA section 110(k)(5), the EPA is only requiring each affected state to revise its SIP to comply with existing requirements of the CAA. The EPA's action therefore leaves to each affected state the choice as to how to revise the SIP provision in question to make it consistent with CAA requirements and to determine, among other things, which of the several lawful approaches to the treatment of excess emissions during SSM events will be applied to particular sources.

#### *D. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any federal mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no new enforceable duty on any state, local or tribal governments or the private sector. The regulatory requirements of this action apply to certain states for which the EPA is issuing a SIP call. To the extent that such affected states allow local air districts or planning organizations to implement portions of the state's obligation under the CAA, the regulatory requirements of this action do not significantly or uniquely affect small governments because those governments have already undertaken the obligation to comply with the CAA.

#### *E. Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

#### *F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications as specified in Executive Order 13175. In this action, the EPA is not addressing any tribal implementation plans. This action is limited to states. Thus, Executive Order 13175 does not apply to this action.

#### *G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern

environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because, in prescribing the EPA's action for states regarding their obligations for SIPs under the CAA, it implements specific standards established by Congress in statutes.

#### *H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use*

This action is not a “significant energy action” because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. This action merely prescribes the EPA's action for states regarding their obligations for SIPs under the CAA.

#### *I. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards.

#### *J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. The action is intended to ensure that all communities and populations across the affected states, including minority, low-income and indigenous populations overburdened by pollution, receive the full human health and environmental protection provided by the CAA. This action concerns states' obligations regarding the treatment they give, in rules included in their SIPs under the CAA, to excess emissions during startup, shutdown and malfunctions. This action requires that certain states bring their treatment of these emissions into line with CAA requirements, which will lead to certain sources' having greater incentives to control emissions during such events.

#### *K. Determination Under Section 307(d)*

Pursuant to CAA section 307(d)(1)(V), the Administrator determines that this action is subject to the provisions of section 307(d). Section 307(d) establishes procedural requirements specific to rulemaking under the CAA. Section 307(d)(1)(V) provides that the provisions of section 307(d) apply to

“such other actions as the Administrator may determine.”

#### *L. Congressional Review Act (CRA)*

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

#### **XV. Judicial Review**

The Administrator determines that this action is “nationally applicable” within the meaning of section 307(b)(1) of the CAA. This action in scope and effect extends to numerous judicial circuits because the action on the Petition extends to states throughout the country. In these circumstances, section 307(b)(1) and its legislative history authorize the Administrator to find the action to be of “nationwide scope or effect” and thus to indicate the venue for challenges to be in the D.C Circuit. Thus, any petitions for review must be filed in the U.S. Court of Appeals for the District of Columbia Circuit.

In addition, pursuant to CAA section 307(d)(1)(V), the EPA is determining that this rulemaking action is subject to the requirements of section 307(d), which establish procedural requirements specific to rulemaking under the CAA. In the event there is a judicial challenge to this action and a court determines that the EPA has erred with respect to any portion of this action, the EPA intends the components of this action to be severable.

#### **XVI. Statutory Authority**

The statutory authority for this action is provided by CAA section 101 *et seq.* (42 U.S.C. 7401 *et seq.*).

#### **List of Subjects in 40 CFR Part 52**

Environmental protection, Affirmative defense, Air pollution control, Carbon dioxide, Carbon dioxide equivalents, Carbon monoxide, Excess emissions, Greenhouse gases, Hydrofluorocarbons, Incorporation by reference, Intergovernmental relations, Lead, Methane, Nitrogen dioxide, Nitrous oxide, Ozone, Particulate matter, Perfluorocarbons, Reporting and recordkeeping requirements, Startup, shutdown and malfunction, State implementation plan, Sulfur hexafluoride, Sulfur oxides, Volatile organic compounds.

Dated: May 22, 2015.

**Gina McCarthy,**  
Administrator.

[FR Doc. 2015–12905 Filed 6–11–15; 8:45 am]

**BILLING CODE 6560–50–P**

## **Exhibit 2**

# **Alternative Control Techniques Document— Nitric and Adipic Acid Manufacturing Plants**

**Emission Standards Division**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Air and Radiation  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711**

**December 1991**

**ALTERNATIVE CONTROL TECHNIQUES DOCUMENTS**

This report is issued by the Emission Standards Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, to provide information to State and local air pollution control agencies. Mention of trade names and commercial products is not intended to constitute endorsement or recommendation for use. Copies of this report are available—as supplies permit—from the Library Services Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711 [(919) 541-2777] or, for a nominal fee, from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 [(800) 553-NTIS].



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## 1.0 INTRODUCTION

Congress, in the Clean Air Act Amendments of 1990 (CAAA), amended Title I of the Clean Air Act (CAA) to address ozone nonattainment areas. A new Subpart 2 was added to Part D of Section 103. Section 183(c) of the new Subpart 2 provides that:

Within 3 years after the date of the enactment of the [CAAA], the Administrator shall issue technical documents which identify alternative controls for all categories of stationary sources of ... oxides of nitrogen which emit, or have the potential to emit 25 tons per year or more of such air pollutant.

These documents are to be subsequently revised and updated as the Administrator deems necessary.

Nitric and adipic acid manufacturing have been identified as categories of stationary sources that emit more than 25 tons of nitrogen oxides (NO<sub>x</sub>) per year. This alternative control techniques (ACT) document provides technical information for use by State and local agencies to develop and implement regulatory programs to control NO<sub>x</sub> emissions from nitric and adipic acid manufacturing facilities. The decision to include both categories in a single ACT document is based on similarities in the process sources of NO<sub>x</sub> emissions from nitric and adipic acid plants.

The information in this ACT document was generated from previous EPA documents and literature searches and contacts with acid manufacturers, engineering and construction firms, control equipment vendors, and Federal, State, and local regulatory agencies. Chapter 2.0 presents a summary of the findings of this study. Chapter 3.0 provides process descriptions and industry characterizations of nitric and adipic acid manufacturing. A



discussion of NO<sub>x</sub> emission levels is presented in Chapter 4.0. Alternative control techniques and achievable controlled emission levels are discussed in Chapter 5.0. Chapter 6.0 presents control costs and cost effectiveness for each control technique. Environmental and energy impacts associated with using NO<sub>x</sub> control techniques are discussed in Chapter 7.0.

## **2.0 SUMMARY**

The purpose of this document is to provide technical information that State and local agencies can use to develop strategies for reducing NO<sub>x</sub> emissions from nitric and adipic acid manufacturing plants. This section presents a summary of the information contained in this document, including uncontrolled and controlled NO<sub>x</sub> emissions data, ACTs, capital and annual costs, and cost effectiveness. Section 2.1 presents a summary of the information relating to nitric acid plants. Section 2.2 presents a summary of the information relating to adipic acid plants.

### **2.1 SUMMARY FOR NITRIC ACID PLANTS**

Approximately 65 plants in the United States produce nitric acid. The ammonia-oxidation process is the most commonly used process for producing weak (50 to 70 percent) nitric acid. The absorption tower, common to all ammonia-oxidation nitric acid production facilities, is the primary source of NO<sub>x</sub> emissions. Three control techniques are predominantly used to reduce the level of NO<sub>x</sub> emissions in the absorber tail gas: (1) extended absorption, (2) nonselective catalytic reduction (NSCR), and (3) selective catalytic reduction (SCR). This section presents a summary of NO<sub>x</sub> control performance, control cost data, and environmental impacts for each of the three control techniques applied to each of three model plants.

Table 2-1 is a summary of NO<sub>x</sub> emissions and a cost comparison of the three alternative NO<sub>x</sub> control techniques used in model plants sized at 200, 500, and 1,000 tons of nitric acid produced per day. Annual uncontrolled NO<sub>x</sub> emissions were

**TABLE 2-1. NO<sub>x</sub> EMISSIONS AND COST COMPARISON OF ALTERNATIVE CONTROL TECHNIQUES USED IN NITRIC ACID PLANTS**

| Plant size,<br>tons/d | Uncon-<br>trolled NO <sub>x</sub><br>emissions,<br>tons/yr <sup>a</sup> | Control<br>technique    | NO <sub>x</sub> removed,<br>tons/yr | Costs, \$10 <sup>3</sup> |        | Cost<br>effectiveness,<br>\$/ton NO <sub>x</sub><br>removed |
|-----------------------|---|-------------------------|-------------------------------------|--------------------------|--------|---|
|                       |   |                         |                                     | Capital                  | Annual |   |
| 200                   | 718   | Extended                | 679                                 | 919                      | 202    | 297   |
| 500                   | 1,800   | Absorption <sup>b</sup> | 1,700                               | 1,610                    | 250    | 147   |
| 1,000                 | 3,590   |                         | 3,400                               | 2,470                    | 257    | 76  |
|                       |   |                         |                                     |                          |        |   |
| 200                   | 718   |                         | 701                                 | 1,070                    | 501    | 715   |
| 500                   | 1,800   | NSCR <sup>c</sup>       | 1,760                               | 1,860                    | 1,020  | 580   |
| 1,000                 | 3,590   |                         | 3,510                               | 2,820                    | 1,780  | 507   |
|                       |   |                         |                                     |                          |        |   |
| 200                   | 718   |                         | 616                                 | 314                      | 188    | 305   |
| 500                   | 1,800   | SCR <sup>d</sup>        | 1,550                               | 409                      | 442    | 285   |
| 1,000                 | 3,590   |                         | 3,090                               | 553                      | 714    | 231   |
|                       |   |                         |                                     |                          |        |   |
| 250                   | 898   | SCR <sup>e</sup>        | 873                                 | 548                      | 252    | 289   |

<sup>a</sup>Based on the following: (1) uncontrolled NO<sub>x</sub> emissions factor of 20 lb/ton,  
(2) plant operating 359 days per year.

<sup>b</sup>Average control efficiency, 94.6 percent. Based on actual operating data.

<sup>c</sup>Average control efficiency, 97.7 percent. Based on actual operating data.

<sup>d</sup>Control efficiency, 86 percent (required to reduce uncontrolled NO<sub>x</sub> emission level down to new source performance standard (NSPS) level, 3.0 lb/ton).  
Estimates provided by Engelhard Corporation.

<sup>e</sup>Control efficiency, 97.2 percent. Based on actual operating data.

calculated based on an uncontrolled emission factor of 20 pounds per ton (lb/ton) of nitric acid produced. Annual NO<sub>x</sub> emissions reductions were calculated using the average control efficiency for each control technique. The average control efficiencies used in the calculations are as follows:

1. Extended absorption—94.6 percent;
2. NSCR—97.7 percent; and
3. SCR—86 percent and 97.2 percent (see Table 2-1).

Table 2-2 summarizes the environmental impacts of the NO<sub>x</sub> control techniques used in nitric acid manufacturing plants.

## **2.2 SUMMARY FOR ADIPIC ACID PLANTS**



**TABLE 2-2. ENVIRONMENTAL AND ENERGY IMPACTS OF ALTERNATIVE CONTROL TECHNIQUES USED IN NITRIC ACID PLANTS**

| Control technique   | Environmental impacts                                  |        |                                      |   |
|---------------------|--|--------|--------------------------------------|---|
|                     | Air  | Liquid | Solid                                | Energy  |
| Extended adsorption | Reduces NO <sub>x</sub> ; no secondary impacts         | None   | None                                 | Pumps and refrigeration                         |
| NSCR                | Reduces NO <sub>x</sub> ; possible HC and CO emissions | None   | Catalyst disposal (3- to 8-yr life)  | Natural gas consumption; heat recovery possible |
| SCR                 | Reduces NO <sub>x</sub> ; possible ammonia emissions   | None   | Catalyst disposal (2- to 10-yr life) | Pumps, fans; minimal energy consumption         |

**TABLE 2-3. NO<sub>x</sub> EMISSIONS AND COST COMPARISON OF ALTERNATIVE CONTROL TECHNIQUES USED IN ADIPIC ACID PLANTS**

| Plant size, 10 <sup>3</sup> tons/yr | Uncontrolled NO <sub>x</sub> emissions, tons/yr | Control technique   | NO <sub>x</sub> removed, tons/yr | Costs, \$10 <sup>3</sup> |        | Cost effectiveness, \$/ton NO <sub>x</sub> removed |
|-------------------------------------|---|---------------------|----------------------------------|--------------------------|--------|--|
|                                     |   |                     |                                  | Capital                  | Annual |  |
| 190                                 | 5,040   | Extended adsorption | 4,330                            | 2,830                    | 425    | 98   |
| 300                                 | 7,950   | Thermal reduction   | 6,480                            | 7,050                    | 3,240  | 500  |
| 350                                 | 9,280   | Thermal reduction   | 7,560                            | 8,000                    | 3,720  | 492  |

**TABLE 2-4. ENVIRONMENTAL AND ENERGY IMPACTS OF ALTERNATIVE CONTROL TECHNIQUES USED IN ADIPIC ACID PLANTS**

| Control technique   | Environmental impacts                                      |        |       | Energy  |
|---------------------|--|--------|-------|---|
|                     | Air  | Liquid | Solid |   |
| Extended absorption | Reduces NO <sub>x</sub> ; no abatement of N <sub>2</sub> O | None   | None  | Pumps and refrigeration used                    |
| Thermal reduction   | Reduces NO <sub>x</sub> ; possible HC and CO emissions     | None   | None  | Natural gas consumption; heat recovery possible |

Four plants in the United States produce adipic acid. Three of the plants, producing over 98 percent of the total output, manufacture adipic acid using the cyclohexane-oxidation process. The NO<sub>x</sub> absorption tower, common to all three plants, is the major source of NO<sub>x</sub> emissions. Two control techniques are used to reduce the level of NO<sub>x</sub> emissions in the absorber tail gas: (1) extended adsorption and (2) thermal reduction. The fourth plant, which produces adipic acid as a byproduct of caprolactam production, uses the phenol-hydrogenation process. The major sources of NO<sub>x</sub> emissions from this plant are nitric acid storage tanks and the adipic acid reactors. Fumes containing NO<sub>x</sub> from these sources are recovered by suction and recycled to the caprolactam process. This section presents a summary of NO<sub>x</sub> control performance, control cost data, and environmental impacts for extended absorption and thermal reduction.

Table 2-3 is a summary of NO<sub>x</sub> emissions and a cost comparison the two alternative control techniques used in the three adipic acid plants. Annual uncontrolled NO<sub>x</sub> emissions were calculated based on an uncontrolled emission factor of 53 lb/ton of adipic acid produced. Annual NO<sub>x</sub> emission reductions were calculated using controlled emission factors estimated from reported data and data obtained from an adipic acid screening study performed in 1976. Table 2-4 summarizes the environmental and energy impacts of the NO<sub>x</sub> control techniques used in adipic acid manufacturing plants.





### **3.0 DESCRIPTION OF NITRIC/ADIPIC ACID MANUFACTURING**

This chapter describes nitric and adipic acid manufacturing. Section 3.1 deals primarily with "weak" nitric acid and its uses, production processes, and industry characterization. Concentrated nitric acid, though produced in considerably lesser quantities, is also presented with a brief process description. Adipic acid manufacturing is described in Section 3.2. Similarly, this section characterizes the adipic acid industry, discusses various uses of adipic acid, and describes the two principal production processes.

#### **3.1 NITRIC ACID MANUFACTURING**

Nitric acid,  $\text{HNO}_3$ , is considered to be one of the four most important inorganic acids in the world and places in the top 10 chemicals produced in the United States. This nearly colorless, liquid acid is (1) a strong acid due to its high proportion of hydrogen ion, (2) a powerful oxidizing agent, attacking most metals except gold and the platinum metals, and (3) a source of fixed nitrogen, which is particularly important to the fertilizer industry.<sup>1</sup>

##### **3.1.1 Uses and Industry Characterization**

The largest use, about 70 percent, of nitric acid is in producing ammonium nitrate. This compound is primarily used for fertilizer.

The second largest use of nitric acid, consuming 5 to 10 percent, is for organic oxidation in adipic acid manufacturing. Terephthalic acid (an intermediate used in polyester) and other organic compounds are also obtained from organic oxidation using nitric acid.<sup>2,3,4</sup> Nitric acid is also used commercially for organic nitrations. A principal use is for

nitration in explosives manufacturing, but nitric acid nitration is also used extensively in producing chemical intermediates such as nitrobenzene and dinitrotoluenes.

In 1990 there were 67 nitric acid production facilities in the United States, including government-owned munitions plants. Twenty-four of these plants had a capacity of at least 180,000 tons per year, as compared to only 13 plants with such capacity in 1984. Total plant capacity was about 11.3 million tons of nitric acid as of January 1990.<sup>4,5</sup> Actual production has remained steady from 1984 to 1988, with an average annual production of about 7.5 million tons of acid.<sup>6</sup>

Since a principal use of nitric acid is to produce ammonium nitrate for fertilizer, the heaviest concentrations of nitric acid production facilities are located in agricultural regions, primarily in the Midwest, the South Central, and the Gulf States.

### **3.1.2      Production Process**

Nitric acid is commercially available in two forms: weak (50 to 70 percent nitric acid) and concentrated (greater than 95 percent nitric acid). Different processes are required to produce these two forms of acid. For its many uses, weak nitric acid is produced in far greater quantities than is the concentrated form. Concentrated nitric acid production is discussed in Section 3.1.4.

Virtually all commercial production of weak nitric acid in the United States utilizes three common steps: (1) catalytic oxidation of ammonia ( $\text{NH}_3$ ) to nitric oxide ( $\text{NO}$ ), (2) oxidation of nitric oxide with air to nitrogen dioxide ( $\text{NO}_2$ ), and (3) absorption of nitrogen dioxide in water to produce "weak" nitric acid.<sup>2</sup> The basic process is shown in Figure 3-1

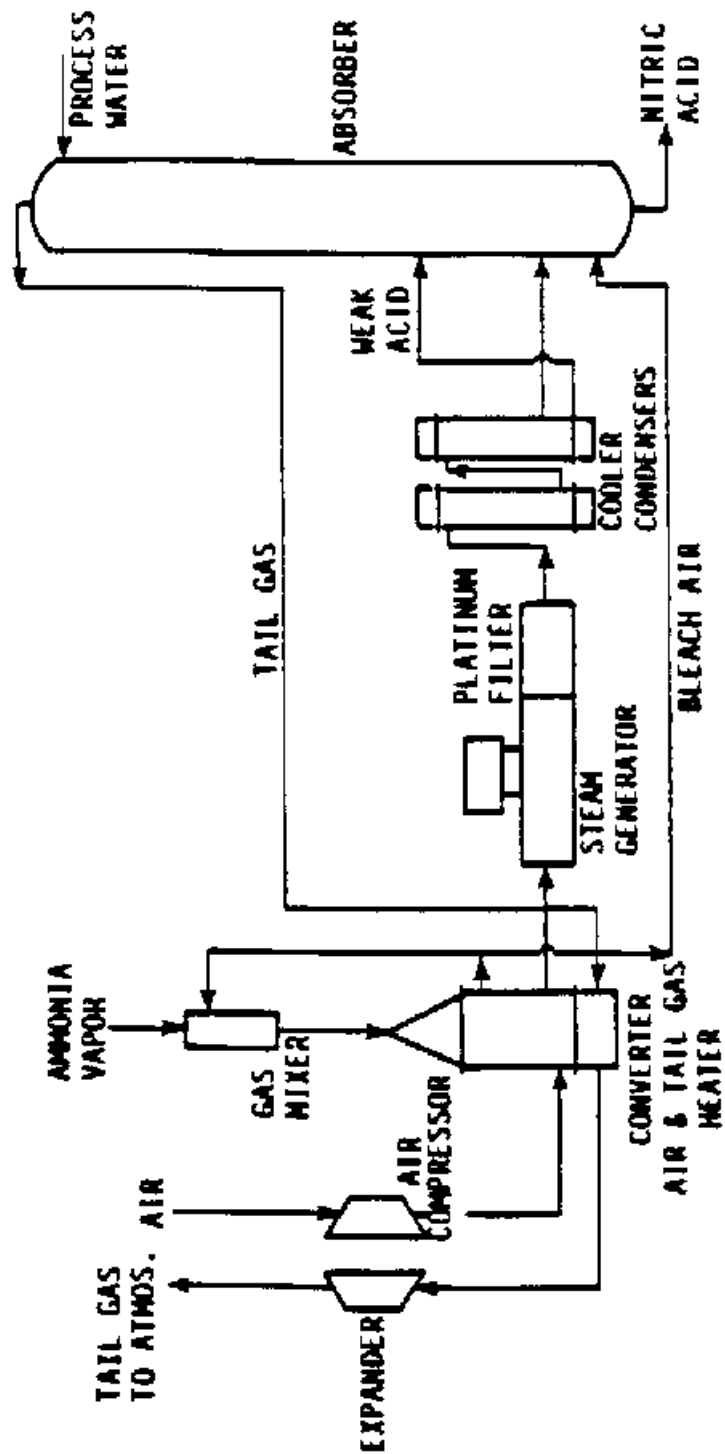


Figure 3-1. Basic nitric acid production process.<sup>7</sup>

**3.1.2.1 Oxidation of Ammonia.** The first step of the acid production process involves oxidizing anhydrous ammonia over a platinum-rhodium gauze catalyst to produce nitric oxide and water. The exothermic reaction occurs as follows:<sup>8</sup>



This extremely rapid reaction proceeds almost to completion, evolving 906 kilojoules per mole (kJ/mole) (859 British thermal units per mole [Btu/mole]) of heat. Typical ammonia conversion efficiency ranges from 93 to 98 percent with good reactor design.<sup>8</sup>

Air is compressed, filtered, and preheated by passing through a heat exchanger. The air is mixed with vaporized anhydrous ammonia and passed to the converter. Since the explosive limit of ammonia is approached at concentrations greater than 12 mole percent, plant operation is normally maintained at 9.5 to 10.5 mole percent.<sup>9</sup> In the converter, the ammonia-air mixture is catalytically converted to nitric oxide and excess air. The most common catalyst consists of 90 percent platinum and 10 percent rhodium gauze constructed from squares of fine wire.<sup>9</sup> Up to 5 percent palladium is used to reduce costs.<sup>2</sup>

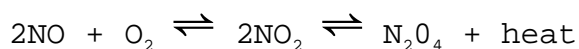
Operating temperature and pressure in the converter have been shown to have an influence on ammonia conversion efficiency.<sup>8</sup> Generally, reaction efficiency increases with gauze temperature. Oxidation temperatures typically range from 750° to 900°C (1380° to 1650°F). Higher catalyst temperatures increase reaction selectivity toward NO production, while lower catalyst temperatures are more selective toward less useful nitrogen (N<sub>2</sub>) and nitrous oxide (N<sub>2</sub>O).<sup>9</sup> The high-temperature advantage is offset by the increased loss of the precious metal catalyst. Industrial experience has demonstrated and the industry has generally accepted conversion efficiency values of 98 percent for atmospheric pressure plants at 850°C (1560°F) and 96 percent for

plants operating at 0.8 megaPascals (MPa) (8 atmospheres [atm]) and 900°C (1650°F).<sup>2</sup>

As mentioned earlier, the ammonia oxidation reaction is highly exothermic. In a well-designed plant, the heat byproduct is usually recovered and utilized for steam generation in a waste heat boiler. The steam can be used for liquid ammonia evaporation and air preheat in addition to nonprocess plant requirements.

As higher temperatures are used, it becomes necessary to capture platinum lost from the catalyst. Consequently, a platinum recovery unit is frequently installed on the cold side of the waste heat boiler. The recovery unit, composed of ceramic-fiber filters, is capable of capturing 50 to 75 percent of the lost platinum.<sup>10</sup>

**3.1.2.2 Oxidation of Nitric Oxide.** The nitric oxide formed during the ammonia oxidation process is cooled in the cooler/condenser apparatus, where it reacts noncatalytically with oxygen to form nitrogen dioxide and its liquid dimer, dinitrogen tetroxide.<sup>4</sup> The exothermic reaction, evolving 113 kJ/mole (107 Btu/mole), proceeds as follows:<sup>3</sup>



This slow, homogeneous reaction is highly temperature- and pressure-dependent. Lower temperatures, below 38°C (100°F), and higher pressures, up to 800 kilopascals (kPa) (8 atm), ensure maximum production of NO<sub>2</sub> and minimum reaction time.<sup>4</sup> Furthermore, lower temperatures and higher pressures shift the reaction to the production of N<sub>2</sub>O<sub>4</sub>, preventing the reverse reaction (dissociation to NO and O<sub>2</sub>) from occurring.<sup>2</sup>

**3.1.2.3 Absorption of Nitrogen Dioxide.** The final step for producing weak nitric acid involves the absorption of NO<sub>2</sub> and N<sub>2</sub>O<sub>4</sub> in water to form nitric acid (as N<sub>2</sub>O<sub>4</sub> is absorbed, it releases gaseous NO). The rate of this reaction is controlled by three steps: (1) the oxidation of nitrogen oxide to NO<sub>2</sub> in the gas

phase, (2) the physical diffusion of the reacting oxides from the gas phase to the liquid phase, and (3) the chemical reaction in the liquid phase.<sup>7</sup> The exothermic reaction, evolving 135 kJ/mole (128 Btu/mole), proceeds as follows:<sup>2</sup>



The absorption process takes place in a stainless steel tower containing numerous layers of either bubble cap or sieve trays. The number of trays varies according to pressure, acid strength, gas composition, and operating temperature. Nitrogen dioxide gas from the cooler/condenser effluent is introduced at the bottom of the absorption tower, while the liquid dinitrogen tetroxide enters at a point higher up the tower. Deionized process water is added at the top, and the gas flows countercurrent to both liquids. Oxidation occurs in the free space between the trays, while absorption takes place in the trays. Because of the high order of the oxidation process in absorbers, roughly one-half the volume of the absorber is required to absorb the final 3 percent of nitrogen oxide gas concentration.<sup>9</sup> Because lower temperatures are favorable for maximum absorption, cooling coils are placed in the trays. Nitric acid in concentrations of 55 to 65 percent is withdrawn at the bottom of the tower.

Secondary air is used to improve oxidation in the absorption tower and to bleach remaining nitrogen oxides from the product acid. Absorption efficiency is further increased by utilizing high operating pressure in the absorption process. High-pressure absorption improves efficiency and increases the overall absorption rate.

Absorber tail gas is reheated using recovered process heat and expanded through a power recovery turbine. In a well-designed plant, the exhaust gas turbine can supply all the power needed for air compression with excess steam available for export.<sup>10</sup>



### 3.1.3 Plant Design

Corrosive effects of nitric acid under pressure precluded the use of pressures greater than atmospheric in early plant designs. With the advent of corrosion-resistant materials, nitric acid producers were able to take advantage of the favorable effects of increased pressure in the NO oxidation and absorption processes. All modern plants incorporate increased pressure at some point in the process. Currently, two plant pressure designs are in use: single-pressure and dual-pressure processes.

**3.1.3.1 Single-Pressure Process.** The single-pressure process is the most commonly employed method of nitric acid production in the United States. This process uses a single pressure—low (atmospheric), medium (400 to 800 kPa [4 to 8 atm])—or high (800 to 1,400 kPa [8 to 14 atm]) in both the ammonia oxidation and nitrogen oxides absorption phases of production. The majority of new smaller capacity (less than 300 tons per day) nitric acid plants use the high-pressure process. Operating at atmospheric pressure offers advantages over higher-pressure processes: the catalyst lasts longer (6 months) and ammonia conversion efficiency is increased. These advantages are far outweighed, however, by low absorption and NO oxidation rates (prompting the need for several large absorption towers).<sup>8</sup> Atmospheric plants still in existence generally operate in a standby capacity, and no new atmospheric plants are likely to be built.<sup>7</sup> The medium-pressure process utilizes a single higher pressure throughout the process. Though ammonia conversion efficiency and catalyst life are somewhat decreased, the economic benefits of medium pressure downstream are substantial. Single-pressure-type plants require significantly smaller, less expensive equipment for oxidation, heat exchange, and absorption.<sup>7</sup> A simplified single-pressure process flow diagram is shown in Figure 3-2

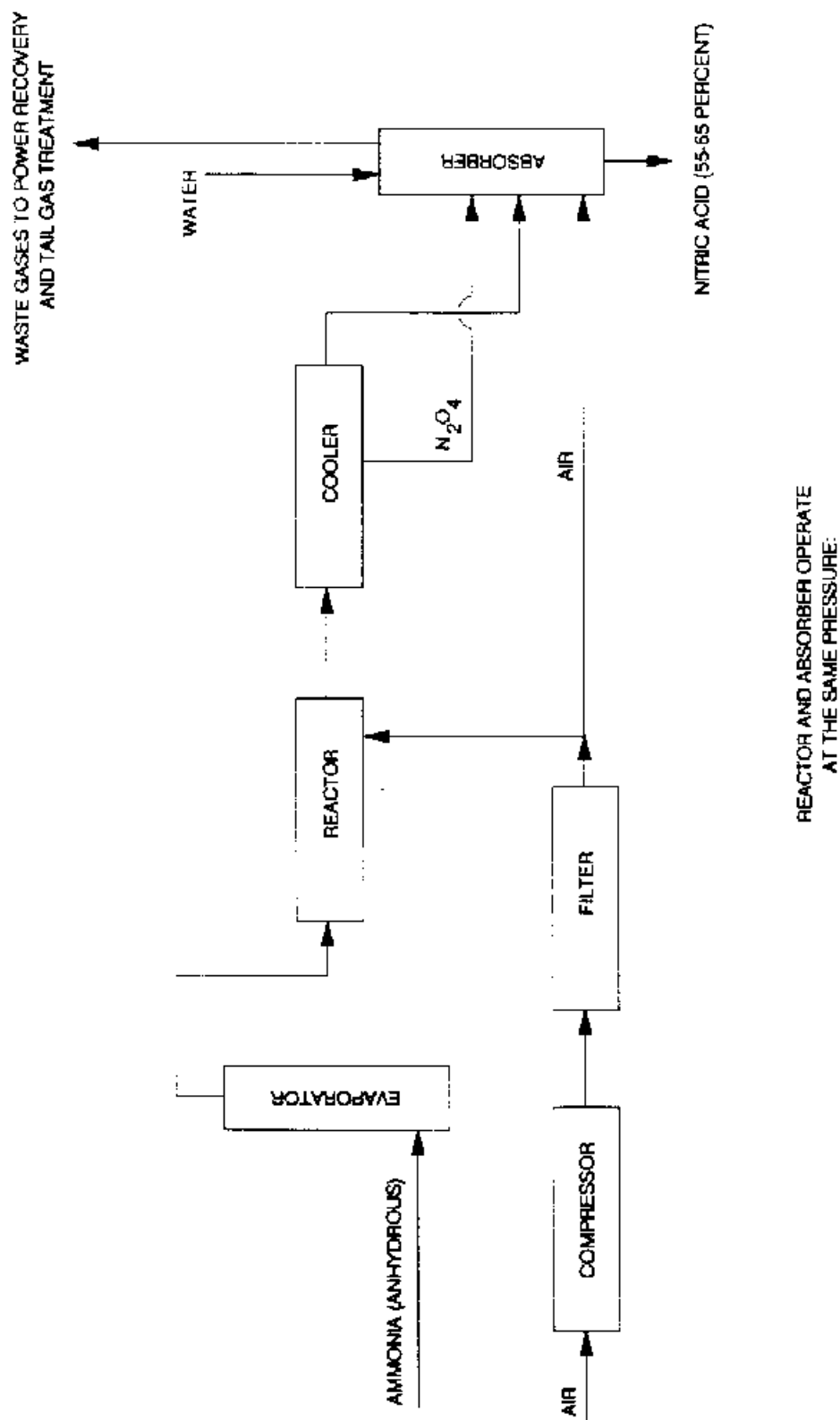


Figure 3-2. Single-pressure nitric acid manufacturing process.<sup>11</sup>

.  
**3.1.3.2 Dual-Pressure Process.** The dual-pressure process combines the attributes of low-pressure ammonia oxidation with high-pressure absorption, thus optimizing the economic benefits of each. Popularized in Europe, this process is finding increasing utility in the United States. A simplified dual-pressure process flow diagram is shown in Figure 3-3

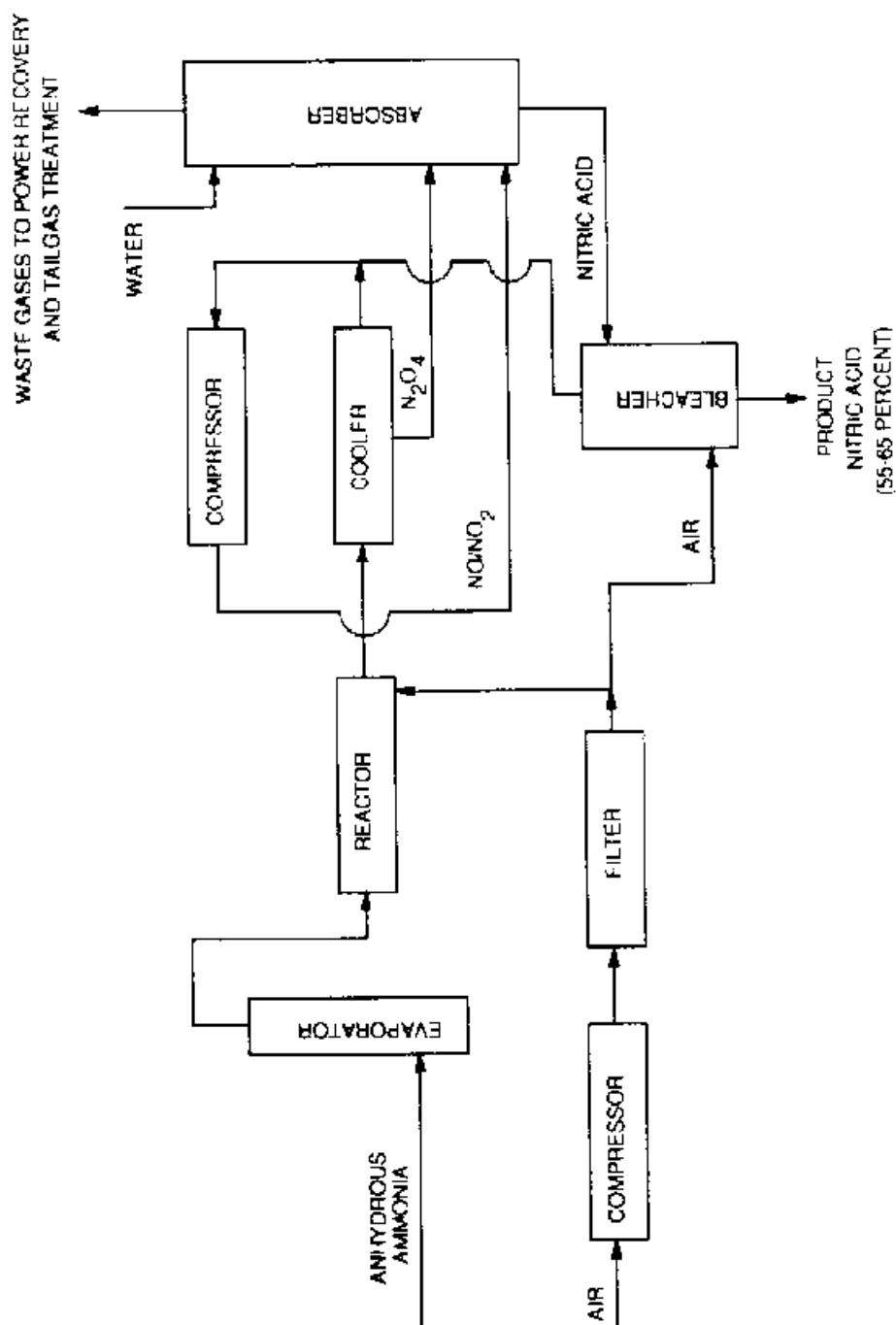


Figure 3-3. Dual-pressure nitric acid manufacturing process.<sup>12</sup>

In the dual-pressure process, ammonia oxidation is usually carried out at pressures from slightly negative to about (400 kPa [4 atm]).<sup>2</sup> This maintains the advantages of high ammonia conversion efficiency and extended catalyst life. The heat of reaction is recovered by the waste heat boiler, which supplies steam for the turbine-driven compressor. After passing through the cooler/condenser, the gases are compressed to the absorber pressure of 800 to 1,400 kPa (8 to 14 atm). Absorption is further enhanced by internal water cooling, which results in acid concentrations up to 70 percent and absorber efficiency to 96 percent. Nitric acid formed in the absorber is usually routed through an external bleacher where air is used to remove (bleach) dissolved oxides of nitrogen. The bleacher gases are then compressed and passed through the absorber. Using excess ammonia oxidation heat, tail gas is reheated to about 200°C (392°F) and expanded in the power-recovery turbine.<sup>4,7,8</sup>

Atmospheric ammonia conversion is limited (due to low gas loading at atmospheric pressure) to about 100 tons per day of equivalent acid.<sup>2,9</sup> Consequently, for large plants, several ammonia converters and waste heat boilers are required. Moreover, nitrous gas compression requires the use of stainless-steel compressors. These costs require an investment for dual-pressure plants from one and one-half to two times the amount for single-pressure plants. However, these costs are offset by improved ammonia efficiency, reduction of platinum catalyst loss, higher absorption efficiency, and higher power recovery.<sup>2,7</sup>

#### **3.1.4 Concentrated Nitric Acid Process**

In some instances, such as organic nitrations, nitric acid concentrations as high as 99 percent are required. Nitric acid forms an azeotrope with water at 68.8 weight percent (simple distillation will not separate the water from the acid). The method most commonly employed in the United States for attaining highly concentrated nitric acid is extractive distillation. Another method, the direct strong nitric process, can produce 95 to 99 percent nitric acid directly from ammonia.<sup>2,8</sup> However, this

process has found limited commercial application in the United States.

The extractive distillation method uses concentrated sulphuric acid as a dehydrating agent to produce 98 to 99 percent nitric acid. The process is shown in Figure 3-4

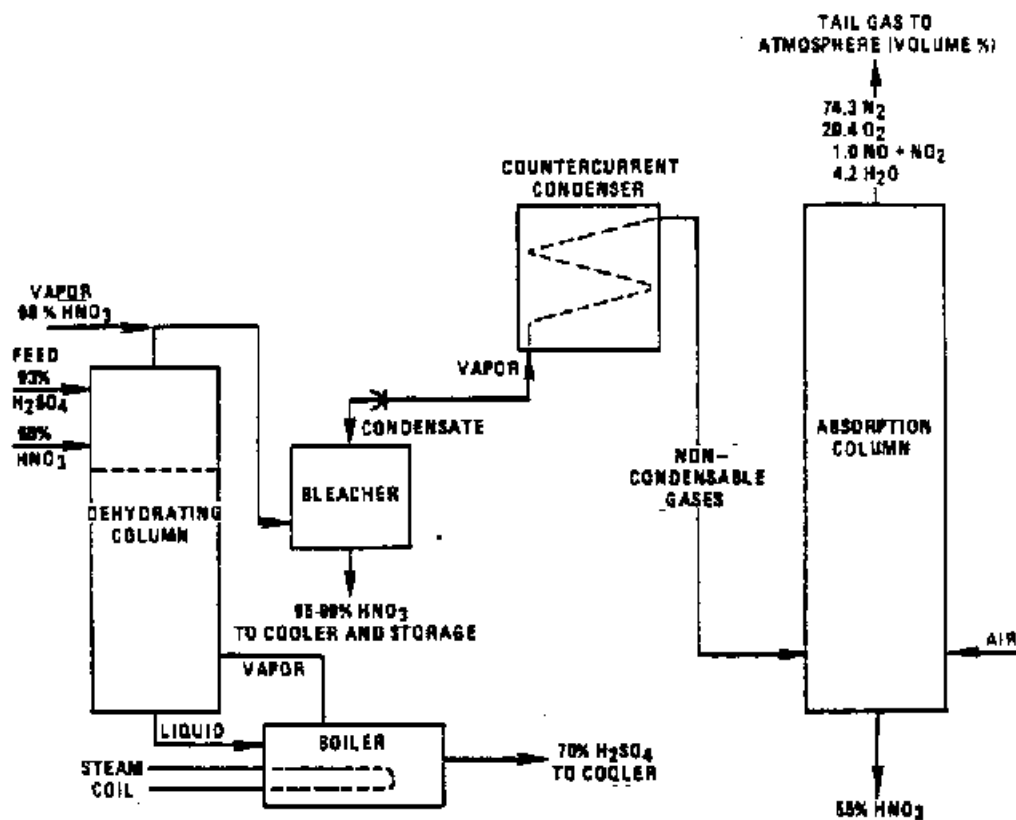


Figure 3-4. Nitric acid concentration using extractive distillation.<sup>13</sup>

. Strong sulfuric acid (typically 60 percent concentration) mixed with 55 to 65 percent nitric acid enters the top of a packed tower and flows countercurrent to ascending vapors. Ninety-nine percent nitric acid vapor containing small amounts of  $\text{NO}_x$  is recovered at the top of the tower. The vapors are then bleached and condensed, leaving weak nitric acid,  $\text{NO}_x$ , and oxygen. The gases are subsequently passed to an absorber, where they are converted to nitric acid and recovered.<sup>2,8</sup>

The direct strong nitric acid process (DSN) produces concentrated nitric acid directly from ammonia. While several DSN processes exist, the Uhde process has demonstrated commercial application in the United States. The Uhde process is shown in Figure 3-5



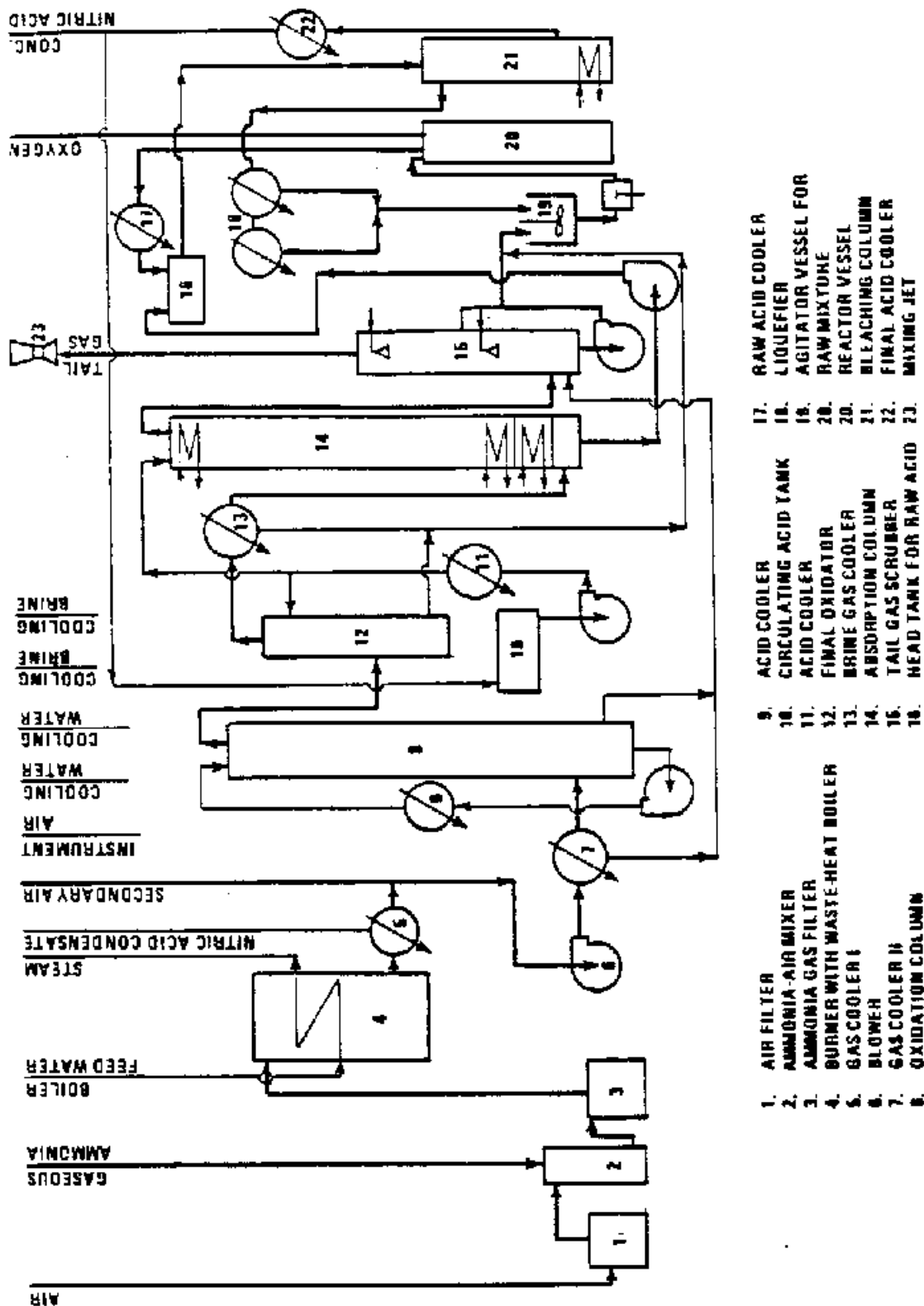


Figure 3-5. Nitric acid concentration using the direct strong nitric process (Uhde process).<sup>14</sup>

. Air and gaseous ammonia are mixed and reacted. Heat of reaction produces steam in the burner/waste-heat boiler. Upon cooling, the reaction products condense to form weak nitric acid. After separating the liquid nitric acid, the remaining NO is oxidized to NO<sub>2</sub> by passing through two oxidizing columns. The vapors are then compressed and cooled to form liquid dinitrogen tetroxide. At a pressure of 5 MPa (50 atm), the liquid N<sub>2</sub>O<sub>4</sub> reacts with O<sub>2</sub> to form strong nitric acid of 95 to 99 percent concentration. Because NO<sub>x</sub> from the absorber is a valuable raw material, tail gas emissions are scrubbed with water and condensed N<sub>2</sub>O<sub>4</sub>. The scrubber effluent is then mixed with the concentrated acid from the absorber column. The combined product is oxidized in the reactor vessel, cooled, and bleached, producing concentrated nitric acid.<sup>8</sup>

### **3.1 ADIPIC ACID MANUFACTURING**

Adipic acid, COOH-(CH<sub>2</sub>)<sub>3</sub>-COOH, was the 48th-highest-volume chemical produced in the United States in 1985 and is considered one of the most important commercially available aliphatic dicarboxylic acids. Typically, it is a white crystalline solid, soluble in alcohol and acetone.<sup>15</sup>

#### **3.2.1 Uses and Industry Characterization**

Ninety percent of adipic acid manufactured in the United States is used to produce nylon 6/6 fiber and plastics. Esters used for plasticizers and lubricants are the next largest consumer. Small quantities of adipic acid are also used as food acidulants.<sup>8,16</sup>

There are four adipic acid manufacturing facilities in operation: (1) Allied-Signal, Inc., in Hopewell, Virginia, with an annual production capacity of 15,000 tons; (2,3) DuPont Chemicals in Orange and Victoria, Texas, with annual production capacities of 190,000 and 350,000 tons, respectively; and (4) Monsanto Chemical Company in Pensacola, Florida, with an annual production capacity of 300,000 tons.<sup>5</sup> Total annual production reached 865,000 tons in 1989.<sup>17</sup>

#### **3.2.2 Production Process**

Two methods of producing adipic acid are currently in use.  
The basic process is shown in Figure 3-6

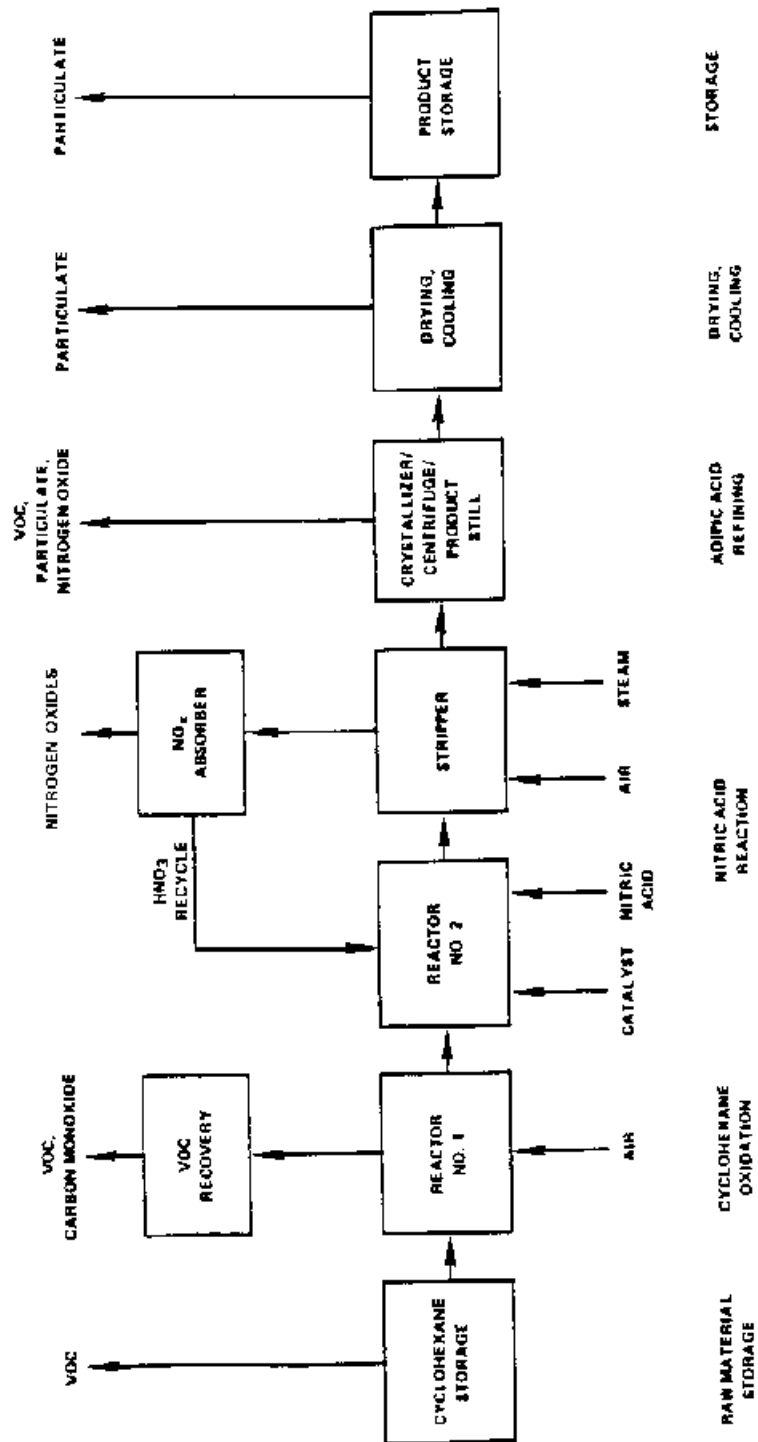


Figure 3-6. Basic adipic acid manufacturing process.<sup>18</sup>

. Ninety-eight percent of adipic acid produced in the United States is manufactured from cyclohexane in a continuous operation. Cyclohexane is air-oxidized, producing a cyclohexanol-cyclohexanone (ketone-alcohol, or KA) mixture. This mixture is then catalytically oxidized using 50 to 60 percent nitric acid, producing adipic acid. Phenol hydrogenation followed by nitric acid oxidation is the lesser-used method.<sup>8,16</sup>

**3.2.2.1 Oxidation of Cyclohexane.** In commercial use, two approaches predominate the air oxidation of cyclohexane process: cobalt-catalyzed oxidation and borate-promoted oxidation. A third method, the high-peroxide process, has found limited commercial use.

Cobalt-catalyzed air oxidation of cyclohexane is the most widely used method for producing adipic acid. Cyclohexane is oxidized with air at 150° to 160°C (302° to 320°F) and 810 to 1,013 kPa (about 8 to 10 atm) in the presence of the cobalt catalyst in a sparged reactor or multistaged column contactor. Several oxidation stages are usually necessary to avoid over-oxidizing the KA mixture. Oxidizer effluent is distilled to recover unconverted cyclohexane then recycled to the reactor feed. The resultant KA mixture may then be distilled for improved quality before being sent to the nitric acid oxidation stage. This process yields 75 to 80 mole percent KA, with a ketone to alcohol ratio of 1:2.<sup>16</sup>

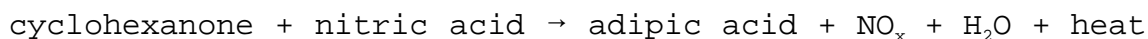
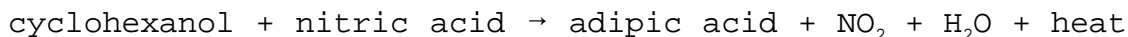
Borate-promoted oxidation demonstrates improved alcohol yields. Boric acid reacts with cyclohexanol to produce a borate that subsequently decomposes to a thermally stable borate ester, highly resistant to further oxidation or degradation. Another key feature of the borate-promoted oxidation system is the removal of byproduct water from the reactors using inert gas and hot cyclohexane vapor. Reaction yields of 87 percent and a K:A ratio of 1:10 have been achieved.<sup>16</sup>

The high-peroxide process is an alternative to maximizing selectivity. Noncatalytic oxidation in a passivated reactor results in maximum production of cyclohexylhydroperoxide. This

is followed by controlled decomposition to KA. Achievable reaction yield is as high as 84 percent KA.<sup>16</sup>

**3.2.2.2 Phenol Hydrogenation.** Phenol hydrogenation is another method of producing cyclohexanol and cyclohexanone. Molten phenol is typically hydrogenated at 140°C (284°F) and 200 to 1800 kPa (2 to 18 atm) hydrogen pressure over a nickel, copper, or chromium oxide catalyst. These catalysts predominantly yield cyclohexanol. Cyclohexanone, typically an intermediate product for manufacturing caprolactam, is favored by using a palladium catalyst. Cyclohexanol yield is typically 97 to 99 percent; however, given sufficient reactor residence time, conversion efficiency of 99+ percent is achievable.<sup>16,19,20</sup>

**3.2.2.3 Nitric Acid Oxidation of Cyclohexanol-Cyclohexanone.** The second step in commercial production of adipic acid is nitric acid oxidation of the cyclohexanol-cyclohexanone mixture. The reaction proceeds as follows:<sup>8</sup>



As the reaction is highly exothermic, heat of reaction is usually dissipated by maintaining a high ratio (40:1) of nitric acid to KA mixture.<sup>19</sup>

Nitric acid (50 to 60 percent) and a copper-vanadium catalyst are reacted with the KA mixture in a reactor vessel at 60° to 80°C and 0.1 to 0.4 MPa. Conversion yields of 92 to 96 percent are attainable when using high-purity KA feedstock. Upon reaction, nitric acid is reduced to nitrogen oxides: NO<sub>2</sub>, NO, N<sub>2</sub>O, and N<sub>2</sub>. The dissolved oxides are stripped from the reaction product using air in a bleaching column and subsequently recovered as nitric acid in an absorption tower.<sup>16,19</sup>

The stripped adipic acid/nitric acid solution is chilled and sent to a crystallizer, where crystals of adipic acid are formed. The crystals are separated from the mother liquor in a centrifuge

and transported to the adipic acid drying and/or melting facilities. The mother liquor is separated from the remaining uncrystallized adipic acid in the product still and recycled to the reactors.

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## SIONS

**4.0 CHARACTERIZATION OF NO<sub>x</sub> EMIS**

This section presents a description of NO<sub>x</sub> formation and emission levels from nitric and adipic acid manufacturing. Section 4.1 describes uncontrolled NO<sub>x</sub> emissions from nitric acid manufacturing. The uncontrolled NO<sub>x</sub> emissions from manufacturing adipic acid are described in Section 4.2.

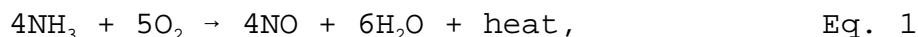
**4.1 NO<sub>x</sub> EMISSIONS FROM NITRIC ACID MANUFACTURING**

Nitric acid production is one of the larger chemical industry sources of NO<sub>x</sub>. Unlike NO<sub>x</sub> found in combustion flue gas, NO<sub>x</sub> from nitric acid production is part of the process stream and is recoverable with some economic value. Vent gas containing NO<sub>x</sub> is released to the atmosphere when the gas becomes too impure to recycle or too low in concentration for recovery to be economically practical.<sup>1</sup>

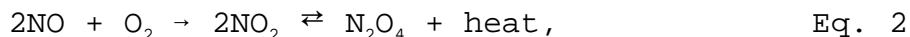
Section 4.1.1 describes how NO<sub>x</sub> is formed as a result of the basic ammonia oxidation process of nitric acid manufacturing. Several factors affect the level of NO<sub>x</sub> emissions from a typical nitric acid plant. These factors are presented in Section 4.1.2. Finally, Section 4.1.3 discusses the sources of NO<sub>x</sub> emissions and typical levels of uncontrolled NO<sub>x</sub> emissions. Furthermore, this section describes how tail gas plume color and opacity are related to the level of NO<sub>x</sub> in the gas.

**4.1.1 NO<sub>x</sub> Formation**

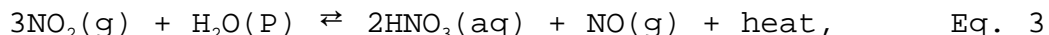
The chemical reactions for each of the nitric acid production process steps (Chapter 3) demonstrate that NO<sub>x</sub> must first be created before nitric acid can be produced. The first reaction,



shows NO forming from the reaction of  $\text{NH}_3$  and air. The NO is then oxidized in the second step,



producing  $\text{NO}_2$ . The  $\text{NO}_2$  is subsequently absorbed in water to produce nitric acid. However, as the absorption reaction,



shows, one mole of NO is produced for every three moles of  $\text{NO}_2$  absorbed, making complete absorption of the  $\text{NO}_x$  impossible. The unabsorbed  $\text{NO}_x$ , if not controlled, is emitted in the absorber tail gas.

#### **4.1.2 Factors Affecting NO<sub>x</sub> Emission Levels**

Many interrelated factors affect the efficiency of the absorber and the level of uncontrolled  $\text{NO}_x$  emissions. These factors are described below.

As noted in the previous section, the production of nitric acid necessarily results in the formation of NO. Using bleacher air, NO must be reoxidized to  $\text{NO}_2$  prior to being reabsorbed. Two limiting factors are present. First, reoxidation of NO to  $\text{NO}_2$  is a very slow reaction. As more air is added, the reaction becomes increasingly slower as the reactants become diluted with excess nitrogen. Second, increased temperatures due to the exothermic absorption reaction tend to reverse the reaction equation (Equation 3).<sup>2</sup> These factors impose economic limits on absorption efficiency and, consequently, must be addressed when considering absorber design.

Maximum absorber efficiency is a primary concern of process designers. Higher absorber efficiency translates to lower  $\text{NO}_x$  emissions. Maximum efficiency is achieved by operating at low temperatures, high pressure, low throughput, and low acid strength with a long residence time.<sup>2</sup> Altering any of these design criteria affects the level of  $\text{NO}_x$  emissions. Furthermore, proper operation and maintenance practices are vital to minimizing  $\text{NO}_x$  emissions.

Low temperature (less than  $38^\circ\text{C}$  [ $100^\circ\text{F}$ ]) is a key factor for high absorption efficiency but is also one that is difficult and

expensive to control.<sup>3</sup> The difficulty of maintaining a low temperature arises from the addition of heat from two sources: heat of reaction and ambient heat. Heat from the exothermic absorption reaction is carried away by cooling water that is circulated through the absorption tower. However, high ambient temperature reduces the heat removal capacity of heat transfer equipment.<sup>4</sup> This, in turn, reduces absorber efficiency and increases  $\text{NO}_x$  emissions.

Operating pressure is another important consideration for increasing absorber efficiency. Gas volume in the tower contracts as the absorption reaction proceeds; therefore, completion of the reaction is aided by increased pressure.<sup>2</sup> As mentioned in Chapter 3, most new nitric acid plants use high pressure (800 to 1,400 kPa [8 to 14 atm]) in the absorption tower to increase absorber efficiency.

Nitric acid plants are designed for a specified production rate, or throughput. Throughput ranges from 50 to 1,000 tons per day (100 percent nitric acid). Operating outside of the optimal throughput affects the levels of  $\text{NO}_x$  emissions. Increasing the production rate typically increases the  $\text{NO}_x$  emission rate by decreasing residence time in the absorption tower. Typical residence time for absorption of  $\text{NO}_x$  in water is on the order of seconds for  $\text{NO}_2$  absorption and minutes for  $\text{NO} + \text{O}_2$  absorption reaction ( $\text{NO}$  does not absorb into water).<sup>5</sup> Decreasing the residence time minimizes the oxidation of  $\text{NO}$  to  $\text{NO}_2$  and decreases the absorption of  $\text{NO}_2$ . Conversely, operating below design throughput increases residence time, and lower  $\text{NO}_x$  emissions would be expected.<sup>6</sup>

It is not always true that  $\text{NO}_x$  emissions are a function of plant rate. Since the hot gas expander acts as a restriction device in the tail gas system, increasing the rate actually increases the pressure and conversely lowers emissions because of greater absorption efficiency. The absorber volume requirement is a function of the cube of the absorber pressure; therefore, unless the tail gas is vented or bypassed around the expander,

NO<sub>x</sub> will be lower leaving the absorber if all other variables remain the same.<sup>7</sup>

Acid strength is another factor designed into the process. Increasing acid strength beyond design specifications (e.g., 60 percent nitric acid) typically increases NO<sub>x</sub> emissions. Lower emissions would be expected from reduced acid strength.<sup>6</sup>

Finally, good maintenance practices and careful control of operations play important roles in reducing emissions of NO<sub>x</sub>. Repairing internal leaks and performing regular equipment maintenance help to ensure that NO<sub>x</sub> levels are kept to a design minimum.<sup>1</sup>

#### **4.1.3      Uncontrolled NO<sub>x</sub> Emission Levels**

The main source of atmospheric NO<sub>x</sub> emissions from nitric acid manufacturing is the tail gas from the absorption tower.<sup>1,6,8</sup> Uncontrolled NO<sub>x</sub> emission levels vary from plant to plant due to differences in plant design and other factors previously discussed. Typically uncontrolled emission levels of 3,000 ppm (with equal amounts of NO and NO<sub>2</sub>) are found in low-pressure (atmospheric) plants. Medium- and high-pressure plants exhibit lower uncontrolled emission levels, 1,000 to 2,000 ppm, due to improved absorption efficiency.<sup>6,8,9</sup> These levels apply to single- and dual-pressure plants.

Typical uncontrolled NO<sub>x</sub> emissions factors range from 7 to 43 kg/Mg (14 to 86 lb/ton) of acid (expressed as 100 percent HNO<sub>3</sub>).<sup>9</sup> This range includes atmospheric, medium-, and high-pressure plants. Factors that affect the emission rate are discussed in Section 4.1.2. The average emission factor (from AP-42) for uncontrolled tail gas emissions is 22 kg/Mg (43 lb/ton) of acid.<sup>9</sup> As discussed in Chapter 3 (Section 3.1.3.1), atmospheric plants operate only in a standby capacity and no new atmospheric plants are likely to be built. Using the average NO<sub>x</sub> concentration (1,500 ppm) for medium- and high-pressure plants, an uncontrolled NO<sub>x</sub> emission factor of 10 kg/metric ton (20 lb/ton) can be calculated. This emission factor will be used throughout this text for uncontrolled NO<sub>x</sub> emissions from nitric acid plants. This emission factor is

typical for steady-state, continuous operation. Startups, shutdowns, and malfunctions increase the uncontrolled emission levels.<sup>6</sup> A typical NO<sub>x</sub> emission level from concentrated nitric acid production is 5 kg/Mg (10 lb/ton) of 98 percent nitric acid.<sup>9</sup>

Color and opacity of the tail gas plume are indicators of the presence and concentration of NO<sub>x</sub>, specifically NO<sub>2</sub> (NO is colorless). A reddish-brown plume reveals the presence of NO<sub>2</sub>. Plume opacity is directly related to NO<sub>2</sub> concentration and stack diameter. The rule of thumb is that the stack plume has a reddish-brown color when the NO<sub>2</sub> concentration exceeds 6,100 ppm divided by the stack diameter in centimeters.<sup>1</sup>

Nitrogen oxides emissions may occur during filling of storage tanks.<sup>9</sup> However, there is no information on the magnitude of these emissions.

## **4.2 NO<sub>x</sub> EMISSIONS FROM ADIPIC ACID MANUFACTURING**

Nitrogen oxides created in the adipic acid production process, like those created in the production of nitric acid, are considered part of the process stream and are recoverable with some economic value. Tail gas from the NO<sub>x</sub> absorber is released to the atmosphere when the gas becomes too low in concentration for recovery to be economically practical.

Section 4.2.1 describes how NO<sub>x</sub> is formed as a result of the KA oxidation process (using nitric acid) used in producing adipic acid. Factors affecting the level of uncontrolled NO<sub>x</sub> emissions in the absorber tail gas are discussed in Section 4.2.2. Section 4.2.3 describes the source of NO<sub>x</sub> emissions and presents data showing typical levels of uncontrolled NO<sub>x</sub> emissions.

### **4.2.1 NO<sub>x</sub> Formation**

Adipic acid is produced by oxidizing a ketone-alcohol mixture (cyclohexanone-cyclohexanol) using nitric acid as follows:<sup>10,11</sup>

Cyclohexanone + nitric acid → adipic acid + NO<sub>x</sub> + water Eq. 1

Cyclohexanol + nitric acid → adipic acid + NO<sub>x</sub> + water Eq. 2

The oxidation process creates oxides of nitrogen in the form of NO, NO<sub>2</sub>, and N<sub>2</sub>O, with some N<sub>2</sub> also forming.<sup>11,12</sup>

The  $\text{NO}_x$  is stripped from the reaction product using air in a bleaching column, and  $\text{NO}$  and  $\text{NO}_2$  are subsequently recovered as nitric acid in an absorption tower. The  $\text{N}_2$  and  $\text{N}_2\text{O}$  are released to the atmosphere. The absorption tower functions in the same manner as the absorption tower used in the nitric acid production process. Nitrogen oxides, entering the lower portion of the absorber, flow countercurrent to a water stream, which enters near the top of the absorber. Unabsorbed  $\text{NO}_x$  is vented from the top while diluted nitric acid is withdrawn from the bottom of the absorber and recycled to the adipic acid process.

#### **4.2.2 Factors Affecting $\text{NO}_x$ Emission Levels**

The absorption tower used in adipic acid production functions in the same manner as the  $\text{NO}_x$  absorber used in nitric acid production. Consequently, factors affecting uncontrolled  $\text{NO}_x$  emissions from both absorbers are expected to be similar. These factors are described in detail in Section 4.1.2 and include the following: high absorber pressure, low temperature in the absorber, long residence time, and low throughput.

#### **4.2.3 Uncontrolled $\text{NO}_x$ Emission Levels**

The main source of atmospheric  $\text{NO}_x$  emissions from adipic acid manufacturing is the tail gas from the absorption tower.<sup>10,11</sup> Other sources of  $\text{NO}_x$  emissions include nitric acid storage tanks and off-gas from the adipic acid refining process. However,  $\text{NO}_x$  emissions from these two sources are minor in comparison. All four adipic acid manufacturing plants were contacted in order to obtain uncontrolled  $\text{NO}_x$  emissions data. The data received did not contain any uncontrolled  $\text{NO}_x$  emissions factors. However, one plant did report uncontrolled  $\text{NO}_x$  concentrations of 7,000 parts per million by volume (ppmv) in the tail gas of the KA oxidation absorber.<sup>13</sup> The 1976 screening study reported uncontrolled  $\text{NO}_x$  emission rates for two plants (capacities of 150,000 and 175,000 tons/yr of adipic acid) as 1,080 and 1,400 pounds per hour.<sup>5</sup>

The AP-42 cites an emission factor of 27 kg per metric ton of adipic acid produced (53 lb/ton) for uncontrolled  $\text{NO}_x$  emissions in the absorption tower tail gas.<sup>14</sup> This emission

factor represents NO<sub>x</sub> in the form of NO and NO<sub>2</sub> only. Large quantities of nitrous oxide (N<sub>2</sub>O) are also formed during the oxidation process. The effect of N<sub>2</sub>O on the ozone layer is currently under investigation by the Air and Energy Engineering Research Laboratory. However, one plant reports that the N<sub>2</sub>O produced at that facility is recovered by a private company to be used in dental offices.<sup>15</sup>

The adipic acid refining process, which includes chilling, crystallizing, and centrifuging, is a minor source of NO<sub>x</sub> emissions. The AP-42 cites an uncontrolled NO<sub>x</sub> emission factor of 0.3 kg per metric ton (0.6 lb/ton) of adipic acid produced for the refining process.<sup>9</sup> No emissions factor for the nitric acid storage tanks was reported; however, one plant cited an uncontrolled NO<sub>x</sub> concentration of 9,000 ppmv.<sup>13</sup>

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## **5.0 CONTROL TECHNIQUES FOR NITROGEN OXIDES FROM NITRIC/ADIPIC ACID MANUFACTURING**

This chapter describes the techniques used to control NO<sub>x</sub> emissions from nitric and adipic acid manufacturing plants. Section 5.1 discusses control techniques for nitric acid manufacturing and Section 5.2 discusses control techniques for adipic acid manufacturing. Each of these sections describes the control techniques, discusses factors affecting the performance of each control, and presents data illustrating the achieved levels of control for each device.

### **5.1 NITRIC ACID MANUFACTURING**

Several control techniques have been demonstrated that reduce NO<sub>x</sub> emissions from nitric acid manufacturing plants. Of the available control techniques, three methods are used predominantly: (1) extended absorption, (2) nonselective catalytic reduction (NSCR), and (3) selective catalytic reduction (SCR). All three of these control techniques are suitable for new and existing plant applications. Sections 5.1.1, 5.1.2, and 5.1.3 describe these control techniques, discuss factors affecting their performance, and provide data that demonstrate the level of achievable NO<sub>x</sub> control. In Section 5.1.4, a table is presented that summarizes the level of control and control efficiency. Section 5.1.5 briefly describes other NO<sub>x</sub> control techniques with more limited use: (1) wet chemical scrubbing (ammonia, urea, and caustic), (2) chilled absorption (CDL/VITOK and TVA), and (3) molecular sieve adsorption.

#### **5.1.1 Extended Absorption**

Extended absorption reduces NO<sub>x</sub> emissions by increasing absorption efficiency and is achieved by either installing a

single large tower, extending the height of an existing absorption tower, or by adding a second tower in series with the existing tower.<sup>1</sup> Increasing the volume and the number of trays in the absorber results in more NO<sub>x</sub> being recovered as nitric acid (1 to 1.5 percent more acid) and reduced emission levels.<sup>2</sup> Extended absorption can be applied to new and existing plants; however, it is considered an add-on control only when applied to existing plants. Typically, retrofit applications involve adding a second tower in series with an existing tower. New plants are generally designed with a single large tower that is an integral component of the new plant design. New nitric acid plants have been constructed with absorption systems designed for 99.7+ percent NO<sub>x</sub> recovery.<sup>1</sup>

The following sections discuss extended absorption used as a NO<sub>x</sub> control technique for nitric acid plants. Section 5.1.1.1 describes single- and dual-tower extended absorption systems. Factors affecting the performance of extended absorption are discussed in Section 5.1.1.2; and Section 5.1.1.3 presents emissions test data and discusses NO<sub>x</sub> control performance.

#### **5.1.1.1 Description of Extended Absorption Systems.**

Figure 5-1

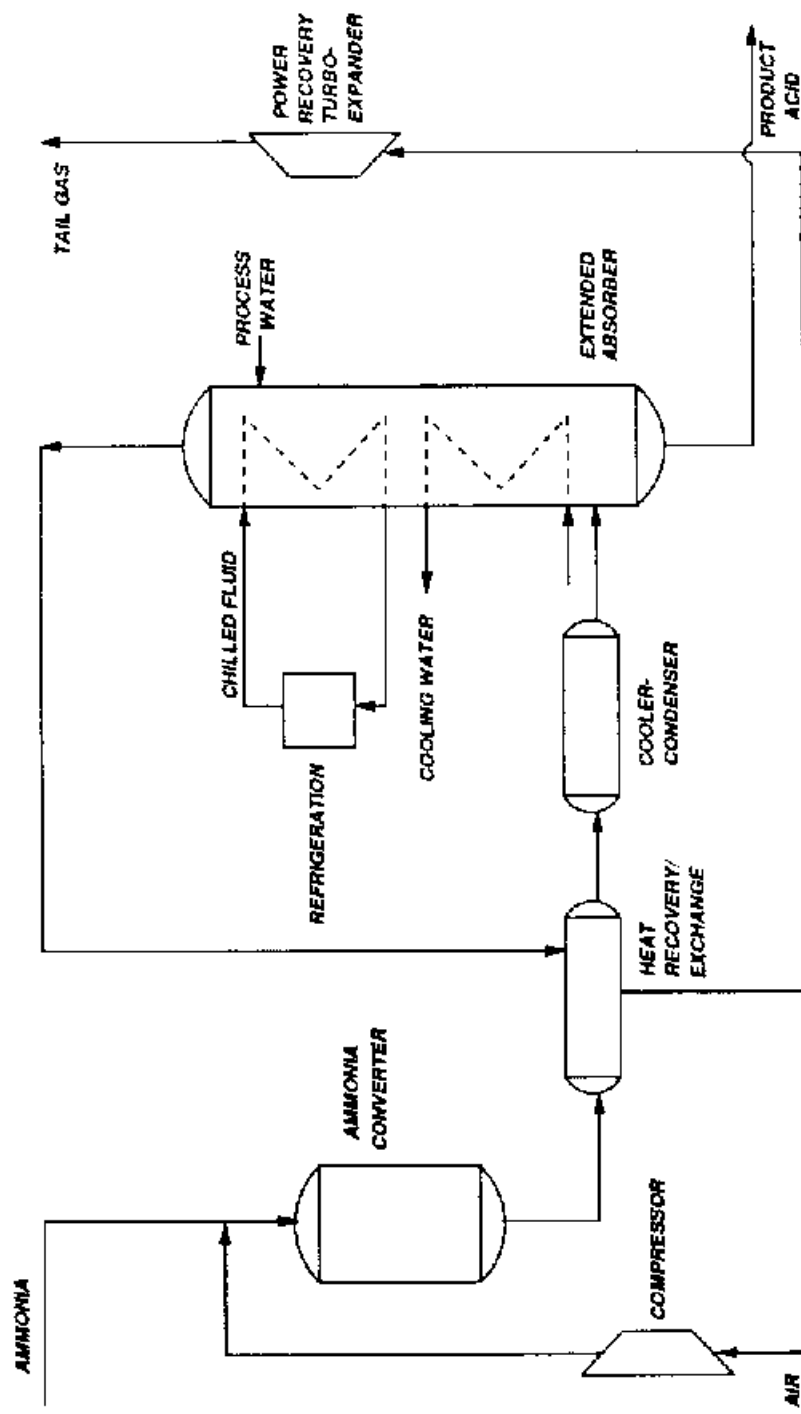


Figure 5-1. Extended absorption system using one large absorber for NO<sub>x</sub> control at nitric acid plants.<sup>4</sup>

is a flow diagram for a typical nitric acid plant with an extended absorption system using a single large (typically 100 to 130 feet tall) tower.<sup>1,3</sup> Following the normal ammonia oxidation process as described in Chapter 3,  $\text{NO}_x$  is absorbed in the "extended" absorption tower. The lower portion (approximately 40 percent of the trays) of the tower is cooled by normal cooling water available at the plant site. The remaining trays are cooled by water or coolant to approximately 2° to 7°C (37° to 45°F), which is usually achieved by a closed-loop refrigeration system using Freon or part of the plant ammonia vaporization system.<sup>1,5,6</sup> Absorber tail gas is then heated in a heat exchanger, which utilizes the heat of the ammonia conversion reaction. The heat is subsequently converted to power in a turboexpander.

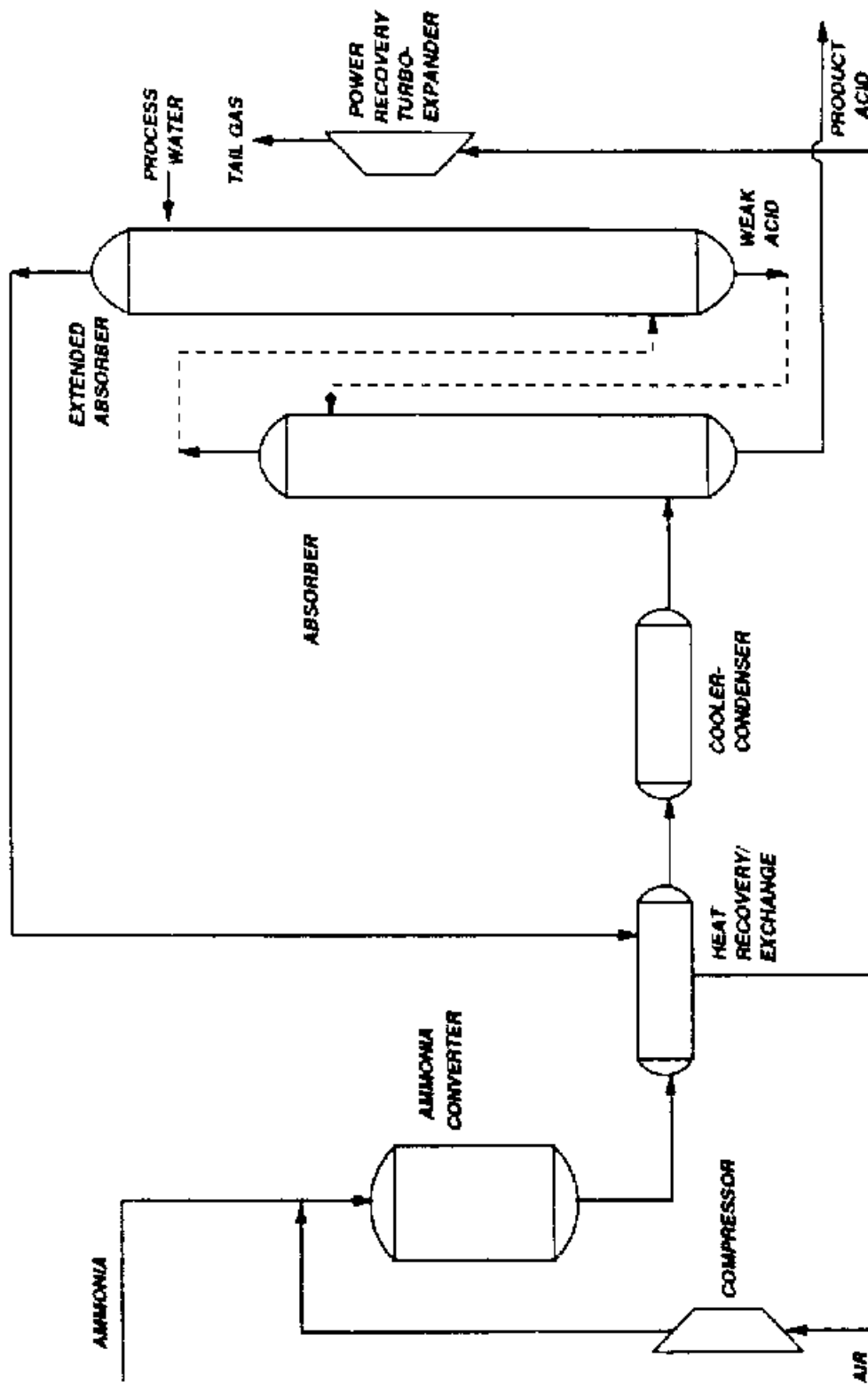


Figure 5-2. Extended absorption system using second absorber for NO<sub>x</sub> control at nitric acid plants.<sup>7</sup>

is a flow diagram for a nitric acid plant with an extended absorption system using a second absorption tower. The second tower is the "extended" portion of the absorption system. Following the normal ammonia oxidation process as described in Chapter 3,  $\text{NO}_x$  is absorbed in the first absorption tower. The tail gas from the first absorber is routed to the base of the second absorber. As the gas flows countercurrent to the process water in the second absorber, the remaining  $\text{NO}_x$  is absorbed to form additional nitric acid. The weak acid from the second absorber is then recycled to the upper trays of the first absorber. Consequently, no liquid effluent waste is generated. The weak acid entering the top of the first tower absorbs rising  $\text{NO}_x$  gases, producing the product nitric acid. Tail gas from the second absorber is heated in a heat exchanger and recovered as power generated in a turboexpander. In order to minimize the size of the second absorption tower, inlet gas to the first absorber is generally pressurized to at least 730 kPa (7.3 atm) and additional cooling is provided. One company's process uses two cooling water systems to chill both absorbers. The entire second absorber and approximately one-third of the trays of the first absorber are cooled by refrigerated water at about 7°C (45°F). The remaining trays in the first absorber are cooled by normal plant cooling water.<sup>1,5,8</sup>

**5.1.1.2 Factors Affecting Performance.** Specific operating parameters must be precisely controlled in order for extended absorption to reduce  $\text{NO}_x$  emissions significantly. Because this control technique is essentially an extension of the absorber, a component common to all weak nitric acid production processes, the factors that affect its performance are the same as those that affect uncontrolled emissions levels as discussed in detail in Chapter 4. These factors include maximum  $\text{NO}_x$  absorption efficiency achieved by operating at low temperature, high pressure, low throughput and acid strength (i.e., throughput and acid concentration within design specifications), and long residence time.

5.1.1.3 Performance of Extended Absorption. Table 5-1

**TABLE 5-1. NITROGEN OXIDES EMISSIONS FROM NITRIC ACID PLANTS  
USING EXTENDED ABSORPTION<sup>10</sup>**

| Plant | Absorber | Absorber inlet pressure, atm | Nitric acid production rate, tons/d | Acid strength, % | Average emission factor lb/ton acid | Control efficiency, % <sup>a</sup> |
|-------|----------|------------------------------|-------------------------------------|------------------|-------------------------------------|------------------------------------|
| C     | Single   | 9                            | 271                                 | 56               | 1.3                                 | 97                                 |
| D     | Single   | 9                            | 538                                 | 57               | 2.75                                | 93.6                               |
| G     | Single   | NA                           | 375                                 | 62               | 2.55                                | 94                                 |
| I     | Single   | NA                           | 300                                 | 55               | 2.74                                | 93.6                               |
| J     | Single   | 9                            | 530                                 | 56               | 2.13                                | 95                                 |
| H     | Dual     | 9                            | 1,056                               | 54               | 2.81                                | 93.5                               |
| E     | Dual     | 7                            | 220                                 | 57               | 1.8                                 | 96                                 |

NA = not available.

<sup>a</sup>These figures calculated using average uncontrolled emissions level of 43 lb/ton (from AP-42).

**Notes:** The following are provided for comparative purposes.

1. From AP-42, NO<sub>x</sub> emission levels from nitric acid plants
  - a. Emissions:
    - uncontrolled--22 kg/metric ton; 43 lb/ton
    - extended absorption--0.9 kg/metric ton; 1.8 lb/ton
  - b. Control efficiency:
    - uncontrolled--0%
    - extended absorption--95.8%
2. From NSPS, allowable NO<sub>x</sub> emission levels from nitric acid plants
  - Emissions:
    - 1.5 kg/metric ton; 3.0 lb/ton



illustrates the levels to which extended absorption can reduce  $\text{NO}_x$  emissions from nitric acid plants. The emission factors are based on compliance tests (using EPA Method 7) performed on seven new plants using extended absorption that are subject to the new source performance standards (NSPS) since the 1979 review. Actual production capacities during testing ranged from 200 to 960 metric tons (220 to 1,060 tons per day [tons/d]) expressed as 100 percent nitric acid. Acid concentration is similar for six of the plants, ranging from 54 to 57 percent, while one plant produces acid at a concentration of 62 percent. Five plants operate with a single large absorption tower, and two use a second tower.

The emission factors range from 0.59 to 1.28 kg of  $\text{NO}_x$  per metric ton (1.3 to 2.81 lb/ton). No trends are indicated relating  $\text{NO}_x$  emission levels to plant size, production capacity, or acid strength. Additionally, there is no correlation between absorber design (single vs. dual) and controlled emission levels. However, the emissions data do illustrate the effectiveness of extended absorption on reducing  $\text{NO}_x$  emissions. From AP-42, the average uncontrolled emissions level for nitric acid plants is 22 kg per metric ton (43 lb/ton) of nitric acid.<sup>9</sup> Furthermore, AP-42 gives an average control efficiency of 95.8 percent for extended absorption. From the emissions data in Table 5-1, the control efficiency for extended absorption at the seven plants ranges from 93.5 to 97 percent. For further comparison, the data demonstrate that for all seven plants, extended absorption reduces  $\text{NO}_x$  emissions below the NSPS level of 1.5 kg per metric ton (3.0 pounds per ton).

#### **5.1.2 Nonselective Catalytic Reduction**

Nonselective catalytic reduction uses a fuel and a catalyst to (1) consume free oxygen in the absorber tail gas, (2) convert  $\text{NO}_2$  to NO for decolorizing the tail gas, and (3) reduce NO to elemental nitrogen. The process is called nonselective because the fuel first depletes all the oxygen present in the tail gas and then removes the  $\text{NO}_x$ . Nonselective catalytic reduction was widely used in new plants between 1971 and 1977. It can achieve

higher NO<sub>x</sub> reductions than can extended absorption. However, rapid fuel price escalations caused a decline in the use of NSCR for new nitric acid plants, many of which opted for extended absorption.

Despite the associated high fuel costs, NSCR offers advantages that continue to make it a viable option for new and retrofit applications. Flexibility adds to the attractiveness of NSCR, especially for retrofit considerations. An NSCR unit generally can be used in conjunction with other NO<sub>x</sub> control techniques. Furthermore, NSCR can be operated at any pressure.<sup>5</sup> Additionally, heat generated by operating an NSCR unit can be recovered in a waste heat boiler and a tail gas expander. The heat recovered can supply the energy for process compression needs with additional steam available for export.<sup>11</sup>

The following sections discuss NSCR used as a NO<sub>x</sub> control technique for nitric acid plants. Section 5.1.2.1 describes an NSCR system including its components and operation. Factors affecting the performance of NSCR units are discussed in Section 5.1.2.2, while Section 5.1.2.3 presents data and discusses NO<sub>x</sub> control performance.

**5.1.2.1 Description of Nonselective Catalytic Reduction Systems**. Figure 5-3

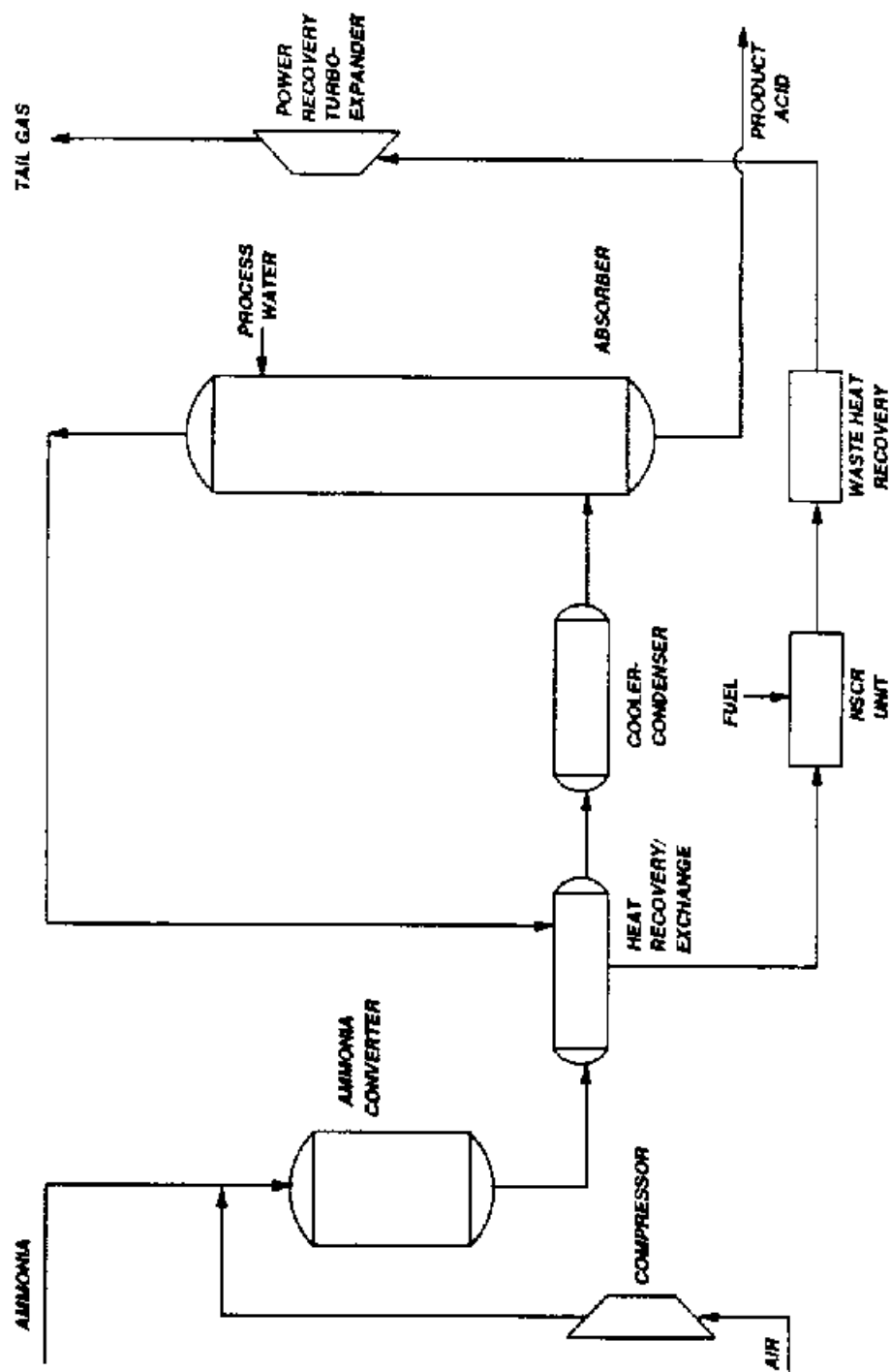


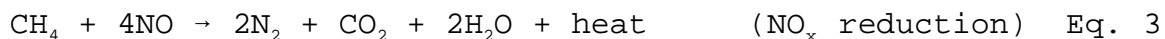
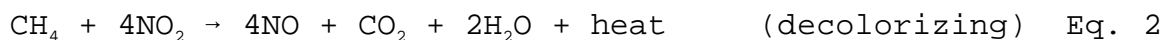
Figure 5-3. Nonselective catalytic reduction system for NO<sub>x</sub> control at nitric acid plants.

is a flow diagram for a typical nitric acid plant using nonselective catalytic reduction. Absorber tail gas is heated to the required ignition temperature using ammonia converter effluent gas in a heat exchanger, and fuel (usually natural gas) is added. Available reducing fuels and associated ignition temperatures are as follows:<sup>5,6</sup>

| <u>Fuel</u>                      | <u>Temperature, °C (°F)</u> |
|----------------------------------|-----------------------------|
| Natural gas (methane)            | 450-480 (842-896)           |
| Propane/butane/naphtha           | 340 (644)                   |
| Ammonia plant purge gas/hydrogen | 250 (482)                   |
| Carbon monoxide                  | 150-200 (302-392)           |

The gas/fuel mixture then passes through the catalytic reduction unit where the fuel reacts in the presence of a catalyst with NO<sub>x</sub> and oxygen to form elemental nitrogen, water, and carbon dioxide when hydrocarbon fuels are used.

The following reactions occur when natural gas is used as the reducing fuel:<sup>5</sup>



The second reaction is known as the decolorizing step. Though total NO<sub>x</sub> emissions are not decreased, the tail gas is decolorized by converting reddish-brown NO<sub>2</sub> to colorless NO. Not until the final reaction does NO<sub>x</sub> reduction actually occur.

Heat from the catalytic reduction reactions is recovered as power in a turboexpander. Depending on the type of NSCR unit, single-stage or two-stage, heat exchangers or quenchers may be required to reduce the outlet gas temperature of the NSCR unit because of thermal limitations of the turboexpander. Temperature rise associated with the use of NSCR is discussed in greater detail in the following paragraphs.

Catalyst metals predominantly used in NSCR are platinum or mixtures of platinum and rhodium. Palladium exhibits better reactivity and is cheaper than platinum. However, palladium tends to crack hydrocarbon fuels to elemental carbon under upset conditions that produce excessively fuel-rich mixtures (greater

than 140 percent of stoichiometry). Consequently, excess oxygen reacts with deposited carbon and produces a surface temperature sufficiently high to melt the ceramic support. Platinum catalysts have been known to operate over extended periods of time at 150 to 200 percent of stoichiometry (fuel: O<sub>2</sub>) on natural gas without exhibiting coking.<sup>12</sup> Catalyst supports are typically made of alumina pellets or a ceramic honeycomb substrate, although the honeycomb is preferred due to its higher gas space velocities. Gas space velocity is the measure of the volume of feed gas per unit of time per unit volume of catalyst. The gas space velocity (volumetric flue gas flow rate divided by the catalyst volume) is an indicator of gas residence time in the catalyst unit. The lower the gas space velocity, the higher the residence time, and the higher the potential for increased NO<sub>x</sub> reduction. Typical gas space velocities are 100,000 and 30,000 volumes per hour per volume for honeycomb and pellet-type substrates, respectively.<sup>5,12</sup>

The reactions occurring within the reduction unit are highly exothermic. Exit temperature typically rises about 130°C (266°F) for each percent of oxygen consumed when hydrocarbon fuels are used. Alternatively, if hydrogen fuel is used, the corresponding temperature rise is 150°C (302°F) for each percent of oxygen consumed. Due to catalyst thermal limitations, the final reduction reaction must be limited to a temperature of 843°C (1550°F). This corresponds to a maximum tail gas oxygen content of about 2.8 percent to prevent catalyst deactivation.<sup>5</sup> Therefore, the gas must be cooled if oxygen content exceeds 2.8 percent.

Energy recovery imposes greater temperature constraints due to construction material thermal limitations (650°C [1200°F]) of the turboexpander. To compensate for these temperature limitations, two methods of nonselective catalytic reduction have been developed, single-stage and two-stage reduction.

Single-stage units can only be used when the oxygen content of the absorber tail gas is less than 2.8 percent. The effluent gas from these units must be cooled by a heat exchanger or

quenched to meet the temperature limitation of the turboexpander.

Because of the specific temperature rise associated with the oxygen consumption and  $\text{NO}_x$  removal, two-stage units with an internal quench section are used when the oxygen content is over 3 percent.<sup>2</sup> Two systems of two-stage reduction are used. One system uses two reactor stages with interstage heat removal. The other two-stage reduction system involves preheating 70 percent of the feed to  $482^\circ\text{C}$  ( $900^\circ\text{F}$ ), adding fuel, and passing the mixture over the first-stage catalyst. The fuel addition to the first-stage is adjusted to obtain the desired outlet temperature. The remaining 30 percent of the tail gas feed, preheated to only  $121^\circ\text{C}$  ( $250^\circ\text{F}$ ), is used to quench the first-stage effluent. The two streams plus the fuel for complete reduction are mixed and passed over the second-stage catalyst. The effluent gas then passes directly to the turboexpander for power recovery. This system eliminates the need for coolers and waste-heat boilers; however, performance of the two-stage system has been less satisfactory than that of the single-stage system.<sup>5,8</sup>

**5.1.2.2 Factors Affecting Performance.** Factors that can affect the performance of an NSCR unit include oxygen content of the absorber tail gas; fuel type, concentration, and flow distribution; type of catalyst support; and inlet  $\text{NO}_x$  concentration. The oxygen content of the tail gas entering the catalytic unit must be known and controlled. As mentioned in the previous section, excess oxygen content can have a detrimental effect on the catalyst support and turboexpanders. Even minor oxygen surplus can lead to catalyst deactivation.

The type of fuel selected is based largely upon availability. However, it is important to select a fuel that is compatible with the thermal constraints of the catalytic reduction system. The temperature rise resulting from oxygen consumption is higher for hydrogen than for hydrocarbon fuels.<sup>2</sup> Fuel concentration is also important in achieving maximum  $\text{NO}_x$  reduction. Natural gas must be added at 10 to 20 percent over stoichiometry to ensure completion of all three reduction reactions. Less surplus fuel is required when hydrogen is used.<sup>5</sup>

Poor control of the fuel/oxygen ratio can result in carbon deposition on the catalyst, thereby reducing its effectiveness. Excessive fuel consumption can be minimized by close control of fuel/tail gas mixing and adequate flow gas distribution into the catalyst bed (to prevent rich or lean gas pockets).<sup>12</sup>

Although similar catalyst metals are typically used, differences in catalyst support can have an effect on the system performance. Honeycomb supports offer relatively low pressure drop and high space velocity. The increased surface area of the honeycomb structure allows greater exposure of the tail gas to the catalytic material, thereby resulting in improved NO<sub>x</sub> conversion. However, honeycombs are more easily damaged by overheating. Alternatively, pellet beds have proved to be more durable but offer less gas space velocity. Furthermore, catalyst fines from pellet beds have been reported to cause turboexpander blade erosion.<sup>12,13</sup>

Malfunctions upstream of the catalytic reduction unit will also affect the level of NO<sub>x</sub> reduction. Upsets in the absorption column that result in NO<sub>x</sub> concentrations in the 9,000 to 10,000 ppm range can inhibit catalytic activity by chemisorption (weak chemical bonds formed between the gas and the catalyst surface). The effects of chemisorption of NO<sub>2</sub> are not permanent, however, and the bed recovers immediately after the upstream abnormality is corrected.<sup>12</sup>

#### **5.1.2.3 Performance of Nonselective Catalytic Reduction.**

Table 5-2

**TABLE 5-2. NITROGEN OXIDES EMISSIONS FROM NITRIC ACID PLANTS USING NONSELECTIVE CATALYTIC REDUCTION**

| Plant           | Design capacity, tons/d | Actual production, % design | No. of stages | Fuel        | Catalyst support <sup>a</sup> | Emission factor, lb/ton <sup>b</sup> | Control efficiency, % <sup>c</sup> |
|-----------------|-------------------------|-----------------------------|---------------|-------------|-------------------------------|--------------------------------------|------------------------------------|
| A <sup>14</sup> | 195                     | 89                          | 1             | Natural gas | NA                            | 1.13                                 | 97.4                               |
| B <sup>15</sup> | 350                     | 107                         | 2             | Natural gas | H                             | 0.4                                  | 99.1                               |
| C <sup>15</sup> | 55                      | 127                         | 1             | Purge gas   | P                             | 2.3                                  | 94.7                               |
| D <sup>15</sup> | 55                      | 100                         | 1             | Purge gas   | H                             | 0.7                                  | 98.4                               |
| E <sup>16</sup> | 900                     | NA                          | NA            | Natural gas | P                             | 0.4                                  | 99.1                               |

NA = not available.

<sup>a</sup>H = honeycomb; P = pellet.

<sup>b</sup>From test reports (EPA method 7).

<sup>c</sup>These figures calculated using average uncontrolled emissions level of 43 lb/ton (from AP-42).

Notes: The following is provided for comparative purposes.

- From AP-42, NO<sub>x</sub> emission levels for nitric acid plants using NSCR
  - Natural gas--0.2 kg/metric ton; 0.4 lb/ton
  - Hydrogen--0.4 kg/metric ton; 0.8 lb/ton
  - Natural gas/hydrogen (25%/75%)--0.5 kg/metric ton; 1.0 lb/ton
- From AP-42, control efficiency for nitric acid plants using NSCR
  - Natural gas--99.1%
  - Hydrogen--97-99.8%
  - Natural gas/hydrogen (25%/75%)--98-98.5%
- From NSPS, allowable NO<sub>x</sub> emission levels from nitric acid plants  
Emissions:
  - 1.5 kg/metric ton; 3.0 lb/ton



illustrates the level of control that has been demonstrated by five nitric acid plants using NSCR as the exclusive means of NO<sub>x</sub> control. Production capacities range from 50 to 819 metric tons (55 to 900 tons) per day (expressed as 100 percent nitric acid). Both pellet bed and honeycomb catalyst supports are equally used, although single-stage units are the predominant NSCR method. Two common fuel types are used: natural gas (methane) and ammonia plant purge gas (65 percent hydrogen).

The emissions data for plants A and E are taken from test reports and represent the average of multiple test runs (EPA Method 7) at each plant. Emissions data for plants B, C, and D are taken from summaries of test reports and represent the average of three test runs (EPA Method 7). Emission factors range from 0.2 to 1.0 kg of NO<sub>x</sub> per metric ton (0.4 to 2.3 lb/ton) of nitric acid (expressed as 100 percent acid). On limited data, no trends are apparent relating the catalytic unit (i.e., the number of stages, fuel type, and catalyst support) to emission factors. However, it should be noted that the plant operating at 127 percent of its design production capacity has the highest NO<sub>x</sub> emission factor. Regarding fuel type, AP-42 cites NO<sub>x</sub> emission factors of 1.5 pounds per ton for purge gas and 0.6 pounds per ton for natural gas. A possible correlation can be made between control efficiency and the rate of acid production. As discussed in Chapter 4, production rates in excess of design can adversely affect absorber efficiency. Consequently, the NO<sub>x</sub> concentration of the gas at the inlet of the NSCR unit may be increased to the point of inhibiting catalyst activity (discussed in Section 5.1.2.2), resulting in decreased control efficiency.

The data in Table 5-2 indicate NO<sub>x</sub> control efficiencies ranging from 94.7 to 99.1 percent. This demonstrated level of control is consistent with the control efficiency data presented in AP-42.

### **5.1.3 Selective Catalytic Reduction**

Selective catalytic reduction uses a catalyst and ammonia in the presence of oxygen to reduce NO<sub>x</sub> to elemental nitrogen. The

process is called selective because the ammonia preferentially reacts with  $\text{NO}_x$  in the absorber tail gas. The following sections discuss SCR used as a  $\text{NO}_x$  control technique for nitric acid plants. Section 5.1.3.1 describes an SCR system including its components and operation. Factors affecting the performance of SCR units are discussed in Section 5.1.3.2. Section 5.1.3.3 presents emission test data and discusses  $\text{NO}_x$  control performance.

5.1.3.1 Description of SCR Systems. Figure 5-4

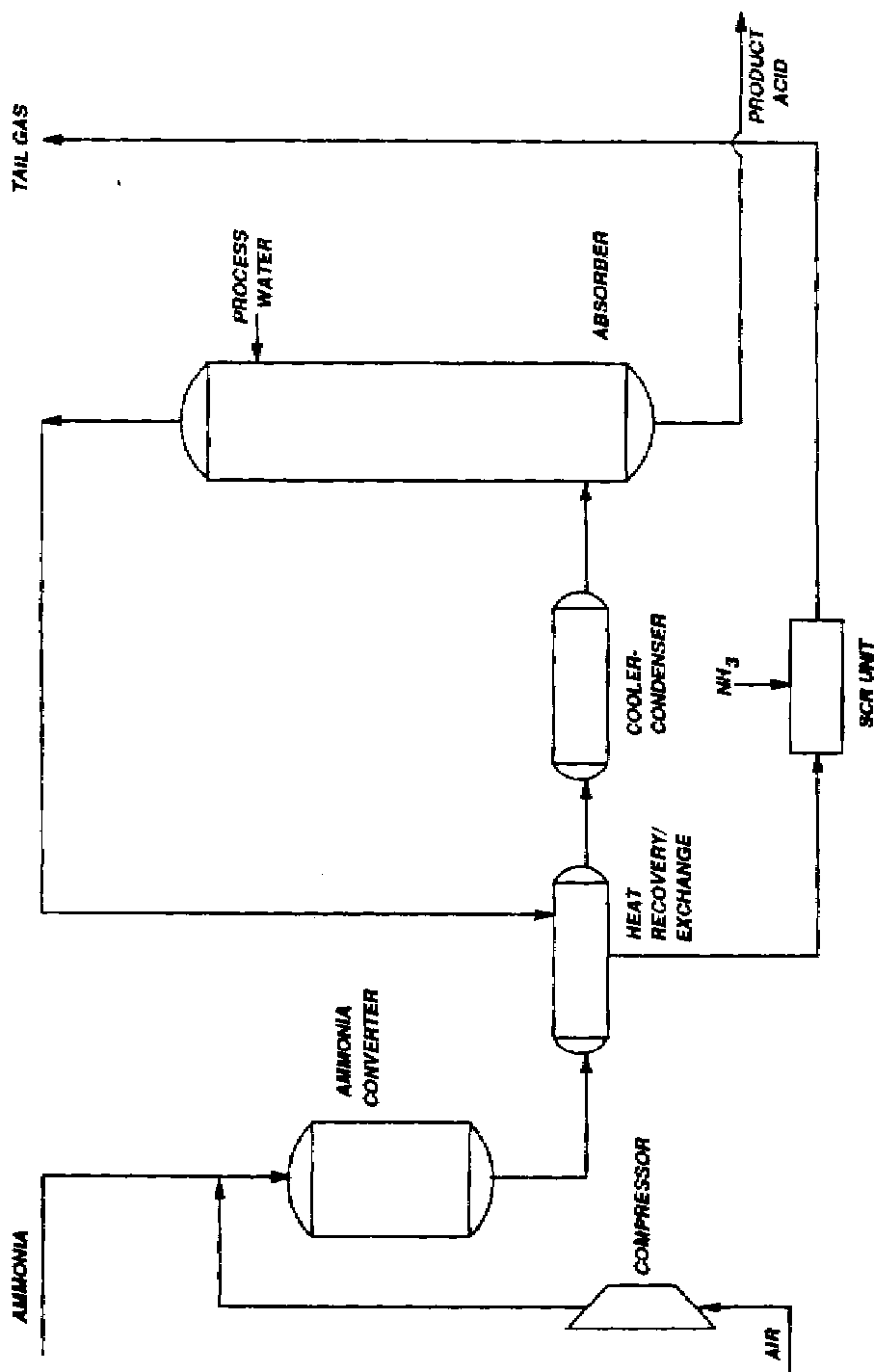
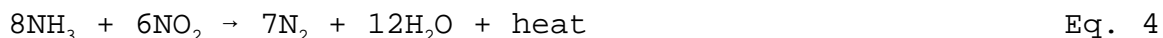


Figure 5-4. Selective catalytic reduction system for NO<sub>x</sub> control at nitric acid plants.

is a flow diagram for a typical nitric acid plant using SCR. Following the normal ammonia oxidation process, absorber tail gas is passed through a heat exchanger to ensure that the temperature of the gas is within the operating temperature range (discussed below) of the SCR unit. The gas enters the SCR unit, where it is mixed with ammonia ( $\text{NH}_3$ ) and passed over a catalyst, reducing the  $\text{NO}_x$  to elemental nitrogen ( $\text{N}_2$ ).

The reactions occurring in an SCR unit proceed as follows:<sup>1,13</sup>



Reactions 4 and 5 proceed at much faster rates than Reaction 6. Therefore,  $\text{NO}_x$  is reduced without appreciable oxygen removal. Proper operation of the process requires close control of the tail gas temperature. Reduction of  $\text{NO}_x$  to  $\text{N}_2$  must be carried out within a narrow temperature range, typically  $210^\circ$  to  $410^\circ\text{C}$  ( $410^\circ$  to  $770^\circ\text{F}$ ).<sup>17</sup> The optimum operating temperature range varies with the type of catalyst used. The SCR catalysts are typically honeycombs or parallel plates, allowing the flue gas to flow through with minimum resistance and pressure drop while maximizing surface area. Several catalyst materials are available. In general, precious metal catalysts (e.g., platinum, palladium) yield higher conversions of  $\text{NO}_x$  to  $\text{N}_2$  with low excess ammonia usage at lower temperatures than the base metal oxides (e.g., titanium, vanadium) or zeolites.<sup>12,19</sup> However, titania/vanadia catalysts are most commonly used in nitric acid plants.<sup>20</sup>

Reducing  $\text{NO}_x$  using SCR results in a reduction in acid yield and increased ammonia use.<sup>12</sup> Acid yield is slightly reduced because  $\text{NO}_x$  is destroyed rather than recovered as with extended absorption. Although ammonia is an expensive reagent, less fuel is required than for NSCR because complete  $\text{O}_2$  consumption is not required. Furthermore, ammonia is readily available since it is consumed as feedstock in the nitric acid process.<sup>8</sup>

Several advantages of SCR make it an attractive alternate control technique. The SCR process can operate at any pressure. The lack of pressure sensitivity makes SCR a viable retrofit control device for existing low-pressure nitric acid plants.<sup>5</sup> Selective catalytic reduction is also well suited for new plant applications. Cost savings are a primary benefit of SCR. Because the temperature rise through the reactor bed is small (2° to 12°C [36° to 54°F]), energy recovery equipment is not required. The need for waste-heat boilers and high-temperature turboexpanders as used for NSCR is eliminated.<sup>5</sup>

**5.1.3.2 Factors Affecting Performance.** Three critical factors affect the NO<sub>x</sub> removal efficiency of SCR units: (1) NH<sub>3</sub>/NO<sub>x</sub> mole ratio, (2) gas stream temperature, and (3) gas residence time.<sup>20</sup> The reaction equations in the previous section show that the stoichiometric ratio of NH<sub>3</sub> to NO<sub>x</sub> is 1:1. Therefore, stoichiometric quantities of ammonia must be added to ensure maximum NO<sub>x</sub> reduction. Ammonia injected over stoichiometric conditions permits unreacted ammonia to be emitted, or to "slip." Figure 5-5

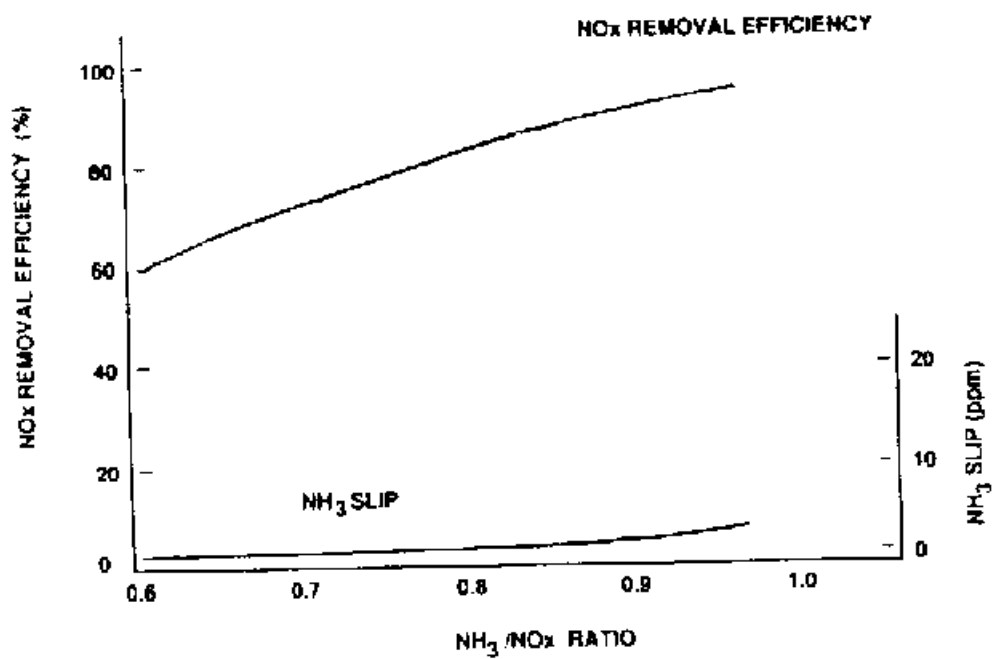


Figure 5-5. SCR catalyst performing as a function of  $\text{NH}_3/\text{NO}_x$  mole ratio.<sup>18</sup>

illustrates NO<sub>x</sub> removal efficiency and NH<sub>3</sub> slip as a function of NH<sub>3</sub>/NO<sub>x</sub> mole ratio. Ammonia slip can be monitored and is easily controlled to levels below 20 ppm (where odor may become a problem).<sup>19</sup>

Catalyst activity varies according to the catalyst composition and temperature. The active temperature range of catalysts used in nitric acid plants are typically 210° to 330°C (410° to 626°F).<sup>17</sup> The gas temperature in the SCR reactor chamber must be within the active temperature range of the catalyst to obtain efficient operation. At lower temperatures, ammonium nitrate salts can be formed, causing possible damage to the downstream turboexpander and piping system. Above 270°C (518°F), NO can be produced by the reaction between NH<sub>3</sub> and O<sub>2</sub> as follows:<sup>13</sup>



Older plants may require preheating of the tail gas prior to the SCR unit in order to accommodate the catalyst temperature limitations.<sup>20</sup>

Gas residence time is primarily a function of the flue gas flow and the catalyst volume or surface area. Residence time is expressed as space velocity in m<sup>3</sup>/hr/m<sup>3</sup> or area velocity in m<sup>3</sup>/hr/m<sup>2</sup>. Figure 5-6



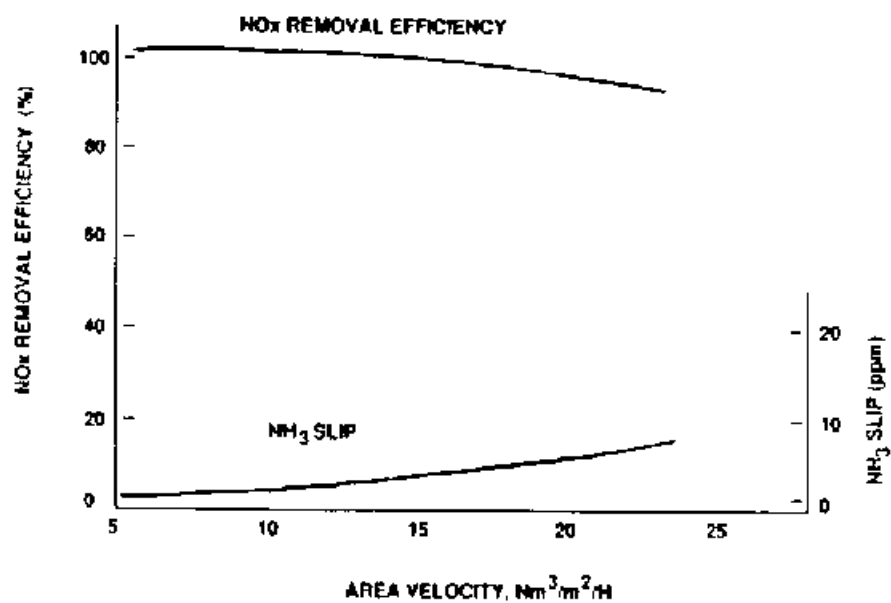


Figure 5-6. SCR catalyst performance as a function of area velocity.<sup>18</sup>

illustrates  $\text{NO}_x$  removal efficiency and  $\text{NH}_3$  slip as a function of area velocity. As the area velocity increases, the residence time of the gas within the catalytic unit decreases.

Consequently,  $\text{NO}_x$  removal efficiency decreases and unreacted ammonia begins to slip.

**5.1.3.3 Performance of Selective Catalytic Reduction.**

Selective catalytic reduction is used in many nitric acid plants in Europe and Japan. However, only three nitric acid plants using SCR have been identified in the United States: (1) First Chemical Corp. in Pascagoula, Mississippi, (2) E.I. DuPont de Nemours in Orange, Texas, and (3) E.I. DuPont de Nemours in Victoria, Texas.

**TABLE 5-3. NITROGEN OXIDES EMISSIONS FROM NITRIC ACID PLANTS  
USING RHONE-POULENC SCR TECHNOLOGY<sup>17</sup>**

| Location | Start date | NO <sub>x</sub> reduction, ppm |        | Control efficiency, % <sup>a</sup> | Emission factor, lb/ton <sup>b</sup> |
|----------|------------|--------------------------------|--------|------------------------------------|--------------------------------------|
|          |            | Inlet                          | Outlet |                                    |                                      |
| Greece   | 1985       | 1,300                          | 200    | 84.6                               | 2.87                                 |
| Greece   | 1985       | 1,500                          | 200    | 86.7                               | 2.87                                 |
| Greece   | 1985       | 1,200                          | 200    | 83.4                               | 2.87                                 |
| Finland  | 1986       | 1,500                          | 200    | 86.7                               | 2.87                                 |
| Norway   | 1987       | 1,200                          | 200    | 83.4                               | 2.87                                 |

<sup>a</sup>Calculated based on inlet/outlet data.

<sup>b</sup>Calculated based on NSPS ratio of 3.0 lb/ton:209 ppm. Example:

$$X \text{ lb/ton} = \text{outlet, ppm} \left( \frac{3.0 \text{ lb/ton}}{209 \text{ ppm}} \right) = 200 \text{ ppm} \left( \frac{3.0 \text{ lb/ton}}{209 \text{ ppm}} \right) = 2.87 \text{ lb/ton}$$

**TABLE 4-14. NITROGEN OXIDES EMISSIONS FROM NITRIC ACID PLANTS USING BASF SCR TECHNOLOGY<sup>18</sup>**

| Location | Start date | Capacity, tons/d | NO <sub>x</sub> reduction, ppm |        | Control efficiency, % <sup>a</sup> | Emission factor, lb/ton <sup>b</sup> |
|----------|------------|------------------|--------------------------------|--------|------------------------------------|--------------------------------------|
|          |            |                  | Inlet                          | Outlet |                                    |                                      |
| Germany  | 1975       | 270              | 450-800                        | <150   | 67-81                              | <2.15                                |
| Germany  | 1975       | 270              | 450-800                        | <150   | 67-81                              | <2.15                                |
| Germany  | 1976       | 225              | 1,300                          | <400   | >69                                | <5.74                                |
| Germany  | 1977       | 270              | 450-800                        | <150   | 67-81                              | <2.15                                |
| Germany  | 1977       | 270              | 450-800                        | <150   | 67-81                              | <2.15                                |
| Germany  | 1979       | 270              | 500                            | <200   | >60                                | <2.87                                |
| Sweden   | 1979       | 225              | 2,000-2,500                    | <500   | 75-80                              | <7.18                                |
| Sweden   | 1980       | 225              | 2,000-2,500                    | <500   | 75-80                              | <7.18                                |
| Sweden   | 1982       | 300              | 550                            | <200   | >64                                | <2.87                                |
| Portugal | 1982       | 360              | 500                            | <200   | >60                                | <2.87                                |
| Sweden   | 1982       | 390              | 2,000-3,000                    | <500   | 75-83                              | <7.18                                |
| France   | 1982       | 920              | 850-950                        | <500   | 41-47                              | <7.18                                |
| Portugal | 1982       | 360              | 500                            | <200   | >60                                | <2.87                                |
| Norway   | 1983       | 450              | 500                            | <200   | >60                                | <2.87                                |
| Belgium  | 1985       | 650              | 200                            | <110   | >45                                | <1.58                                |

<sup>a</sup>Calculated based on inlet/outlet data.

<sup>b</sup>Calculated based on NSPS ratio of 3.0 lb/ton:209 ppm. Example:

$$x \text{ lb/ton} = \text{outlet, ppm} \left( \frac{3 \text{ lb/ton}}{209 \text{ ppm}} \right) = 150 \text{ ppm} \left( \frac{3 \text{ lb/ton}}{209 \text{ ppm}} \right) = 2.15 \text{ lb/ton}$$

European plants using SCR. The data are from European technical papers discussing NO<sub>x</sub> reductions using SCR from two process licensors.<sup>17,18</sup> Descriptions of the test data and test methods are not reported. Control efficiencies are calculated using the inlet and outlet test data and range from 44 to 86.7 percent. Emission factors are calculated using a ratio established for the nitric acid NSPS (3.0 lb/ton:209 ppm) and the outlet NO<sub>x</sub> concentration. The emission factors range from less than 0.72 to 3.3 kg of NO<sub>x</sub> per metric ton (1.58 to 7.18 lb/ton) of nitric acid. The data do not indicate a trend relating SCR control performance to inlet NO<sub>x</sub> concentration. It should be noted, however, that high emission factors (greater than 3.0 lb/ton) may indicate less stringent standards rather than low SCR control efficiency.

First Chemical Corporation in Pascagoula, Mississippi, is a new nitric acid manufacturing facility producing 250 tons per day of nitric acid. Selective catalytic reduction is used in conjunction with extended absorption for NO<sub>x</sub> control. Compliance testing, using EPA Method 7, was performed in April 1991. A summary of the compliance testing data is as follows:<sup>21</sup>

NO<sub>x</sub> emission factor: 0.29 kg/metric ton (0.57 lb/ton);

NO<sub>x</sub> concentration: less than 60 ppm; and

Stack plume opacity: zero percent.

No information was obtained regarding the uncontrolled (exit the NO<sub>x</sub> absorber) NO<sub>x</sub> level. However, because First Chemical is a new facility, it is reasonable to assume an uncontrolled NO<sub>x</sub> emission factor of at least 10 kg per metric ton (20 lb/ton).<sup>7</sup> Based on this uncontrolled NO<sub>x</sub> emission factor of 10 kg per metric ton (20 lb/ton), the controlled NO<sub>x</sub> emission factor (0.29 kg/metric ton [0.57 lb/ton]) represents a control efficiency for SCR of 97.2 percent. Again for comparative purposes, the NO<sub>x</sub> emission data from First Chemical (0.57 lb/ton; <60 ppm) demonstrate that SCR is capable of reducing NO<sub>x</sub> emissions to well below NSPS levels (3.0 lb/ton; 209 ppm).

#### **5.1.4 Control Technique Performance Summary**

Table 5-5 summarizes the NO<sub>x</sub> control data presented in Tables 5-1 through 5-4. For each control technique, the

**TABLE 5-5. SUMMARY OF NO<sub>x</sub> CONTROL TECHNIQUE PERFORMANCE NITRIC ACID PLANTS**

| Control technique           | Emission factor, kg/metric (lb/ton) |               | Control efficiency, % |         |
|-----------------------------|-------------------------------------|---------------|-----------------------|---------|
|                             | Range                               | Average       | Range                 | Average |
| Extended adsorption         | 0.59-1.28 (1.3-2.81)                | 1.05 (2.3)    | 93.5-97.0             | 94.6    |
| NSCR                        | 0.2-1.05 (0.4-2.30)                 | 0.5 (1.0)     | 94.7-99.1             | 97.7    |
| SCR (European) <sup>a</sup> | 0.72-3.26 (1.58-7.18)               | <1.67 (<3.67) | 44-86.7               | 70.8    |
| SCR (U.S.) <sup>b</sup>     | 0.29 (0.57)                         |               | 97.2                  |         |

<sup>a</sup>SCR data are from European plants where less stringent (compared with U.S. standards) standards are imposed. The SCR is used to bring NO<sub>x</sub> emissions down to required levels only.

<sup>b</sup>Based on compliance test data from a single plant using SCR with extended absorption (First Chemical Corporation).chemical reaction.

following data are presented: range of achievable control, average achievable control, range of control efficiency, and average control efficiency.

#### **5.1.5 Other Control Techniques**

Several other control techniques for nitric plants have been developed and demonstrated. However, poor NO<sub>x</sub> control performance or other disadvantages have excluded these controls from common use. These NO<sub>x</sub> control techniques are (1) wet chemical scrubbing, (2) chilled absorption, and (3) molecular sieve adsorption. Each of these techniques is described briefly below.

**5.1.5.1 Wet Chemical Scrubbing.** These processes use ammonia, urea, or caustic chemicals to "scrub" NO<sub>x</sub> from the absorber tail gas, converting the NO<sub>x</sub> to nitrates or nitrites by 5.1.5.1.1 Ammonia scrubbing. Goodpasture, Inc., developed an ammonia scrubbing process in 1973 that is suitable to retrofit existing plants with inlet NO<sub>x</sub> concentrations of up to 10,000 ppm. Feed streams to this process are ammonia and water. Ammonium nitrate is produced as a byproduct of this process. Successful operation of this process requires that ammonium nitrite formation be kept to a minimum and any ammonium nitrite that forms must be oxidized to ammonium nitrate. A flow diagram for this process is shown in Figure 5-7



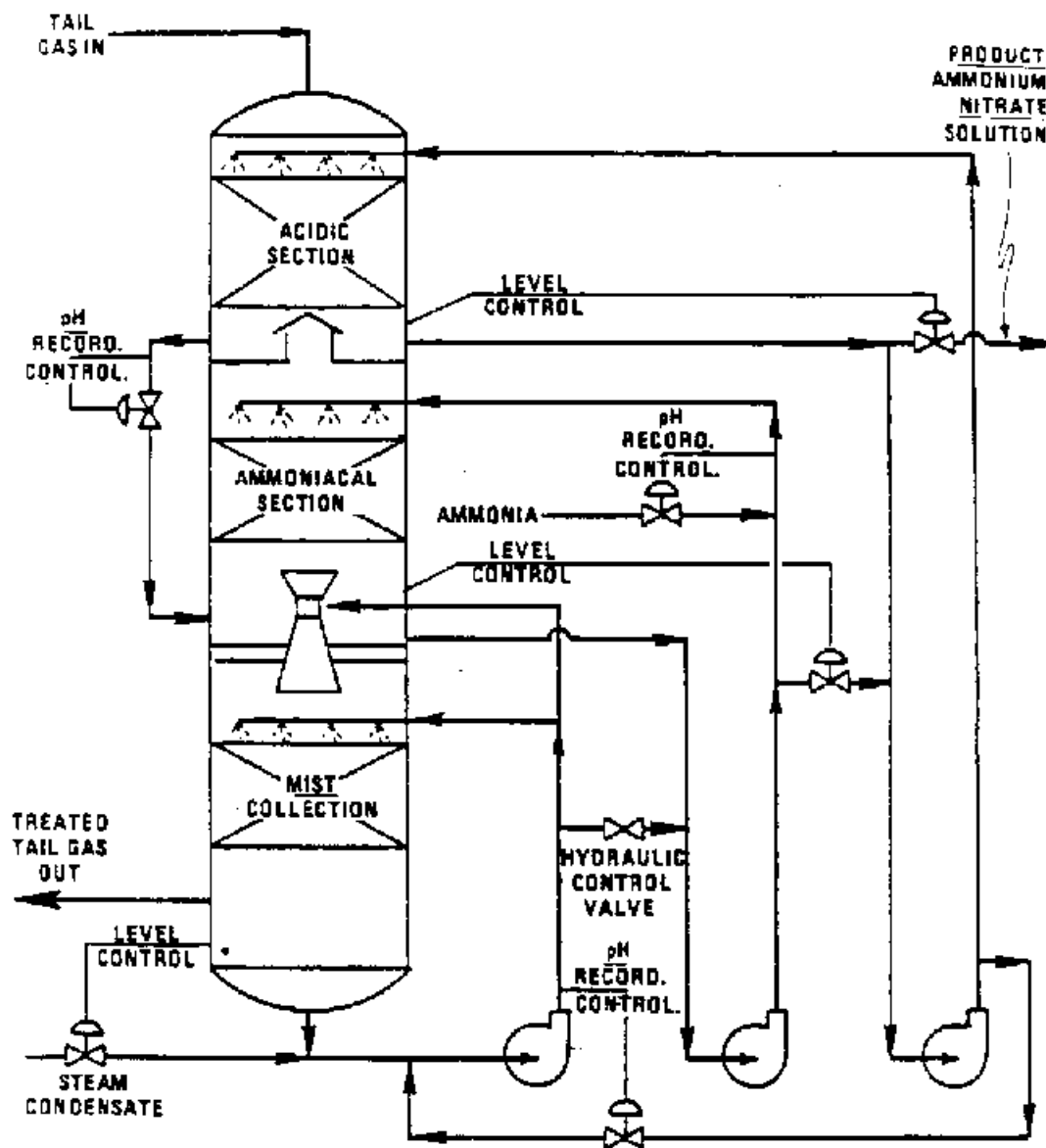


Figure 5-7. Process flow diagram for the Goodpasture process.<sup>22</sup>

. The entire process is conducted in a single packed bed absorption tower with three sections operated in concurrent flow. In the Goodpasture process, there are three distinct sections of the absorption tower:

1. A gas absorption and reaction section operating on the acidic side;
2. A second gas absorption and reaction section operating on the ammoniac side; and
3. A final mist collection and ammonia recovery section.

Tail gas enters the first or acidic section of the tower, where  $\text{NO}_x$  in the gas stream is converted to nitric acid. Ammonia is added to the process in the second section in sufficient amounts to maintain the pH at a level of 8.0 to 8.3. In this section of the tower, ammonia reacts with  $\text{NO}_x$  in the gas stream to form ammonium nitrate and ammonium nitrite; the proportion of each depends on the oxidation state of the  $\text{NO}_x$ . Product solution from the second section is fed to the first, where ammonium nitrite is oxidized to ammonium nitrate by the acidic conditions, and ammonium nitrate is formed directly from the reaction of free ammonia with nitric acid. The resulting solution is split into two streams. One stream is withdrawn from the process as product solution, while the other is fed to the second or ammoniacal section of the tower. Feed streams to the third and final section of the tower consist of process water or steam condensate in sufficient quantities to maintain the product ammonium nitrate solution in the 30 to 50 percent concentration range, and a small amount of solution from the acidic section to control the pH to approximately 7.0. In this section of the process, entrained droplets are removed, and any free ammonia is stripped from the solution. Product solution withdrawn from the first section of the process contains 35 to 40 percent ammonium nitrate and 0.05 percent ammonium nitrite. The ammonium nitrite can be oxidized by heating the solution to  $115^\circ\text{C}$  ( $240^\circ\text{F}$ ) or by simply holding it in a tank for 24 hours without heating.

Ammonia scrubbing systems have operated reliably. An advantage of this process is that the pressure losses are only

6.8 to 13.0 kPa (1-2 psi), which allows the process to be easily retrofitted for control of existing low-pressure nitric acid plants. Special precautions must be taken, however, to prevent deposition of ammonium nitrate on the power-recovery turboexpander blades. One potential disadvantage of the process is that the requirement for 85 percent ammonium nitrate solutions by modern fertilizer plants can necessitate additional evaporators to concentrate the 35 to 55 percent ammonium nitrate solution recovered as a byproduct from the Goodpasture process.<sup>5</sup> The Goodpasture process is designed to reduce inlet NO<sub>x</sub> concentrations as high as 10,000 ppm (65 kg per metric ton [144 lb/ton]) to within NSPS limits (1.5 kg per metric ton [3.0 lb/ton]).<sup>5</sup> However, nitric acid plants that use this process have not been identified. Therefore, no test data are available.

5.1.5.1.2 Urea scrubbing. The MASAR process serves as a representative example of urea scrubbing. A flow diagram for the MASAR process is shown in Figure 5-8

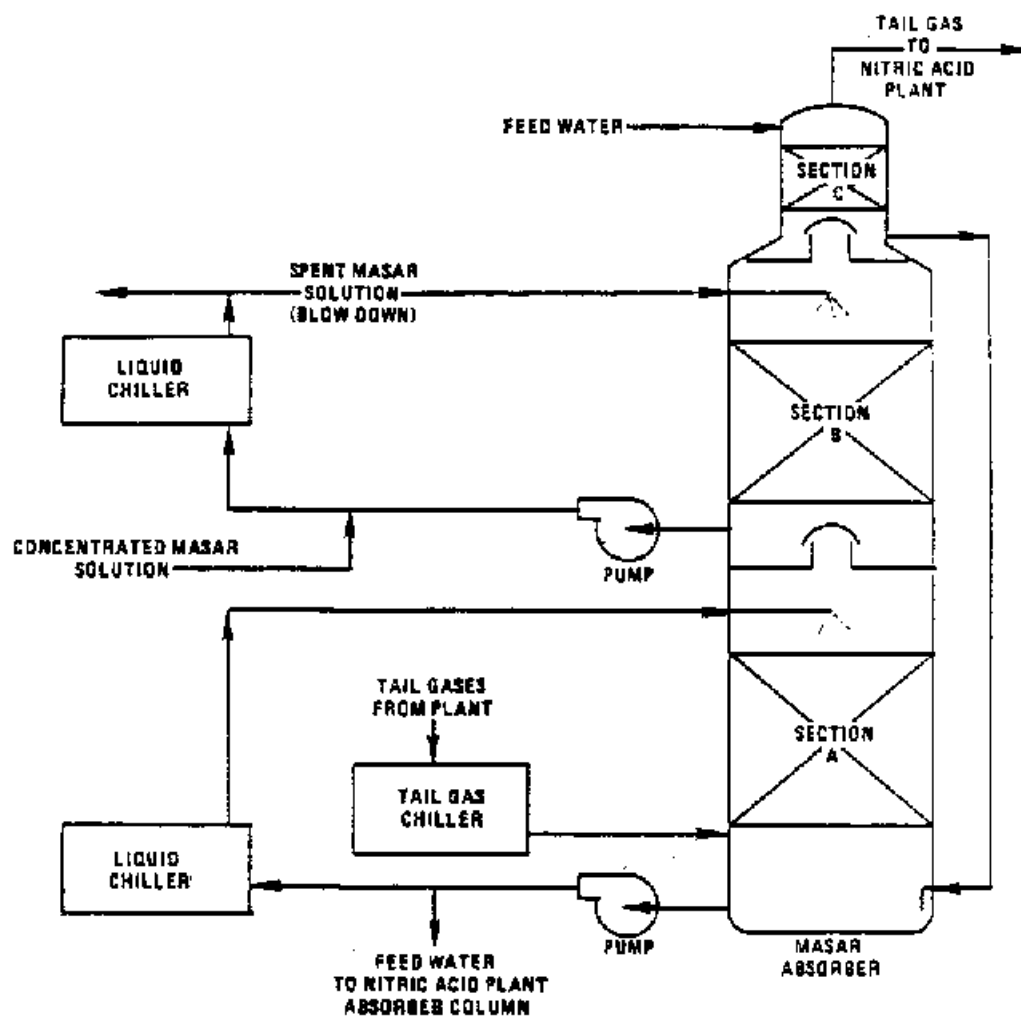
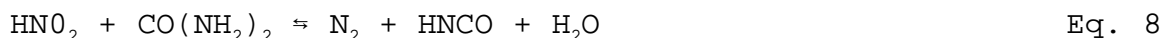


Figure 5-8. Flow diagram of the MASAR process.<sup>23</sup>

. The process control device consists of a three-stage absorption column with gas and liquid chillers on the feed gas and recirculated solvents. Liquid ammonia or some other form of refrigeration is used as the cooling medium. The chemical reaction mechanisms proposed for urea scrubbing are as follows:



Under actual process operating conditions, the last reaction listed above predominates so that the overall reaction is:



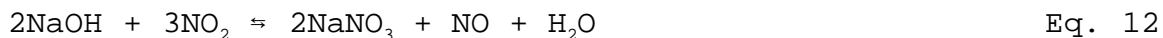
In the MASAR process, absorber tail gas is first cooled in a gas chiller, where condensation occurs and forms nitric acid. Normal plant absorber feedwater is chilled in the top section of the MASAR absorber and is then fed to the bottom section, where it flows countercurrent to the incoming chilled tail gas in the packed bed. After additional  $\text{NO}_x$  is scrubbed from the tail gas, the scrubbing water is recirculated through a chiller to remove reaction heat; this weak acid stream is used as feed to the nitric acid plant absorber. In the middle section of the MASAR absorber, the tail gas is scrubbed with the urea-containing solution, forming nitric acid and nitrous acid that reacts to form  $\text{CO}(\text{NH}_2)_2$ ,  $\text{N}_2$ , and  $\text{H}_2\text{O}$ . Recirculation of the scrubbing solution causes the concentration of nitric acid and ammonium nitrate to rise. Therefore, a bleed stream is required to keep the system in balance. Makeup urea/water solution is fed to the scrubbing system at a rate sufficient to maintain a specified minimum urea residual content. To maintain temperature control in the middle section, the recirculated scrubbing solution is pumped through a chiller to remove the heat of reaction. Prior to leaving the MASAR unit, the tail gas is again scrubbed with plant absorber feed water in the top section.<sup>5</sup>

This process has been reported to reduce  $\text{NO}_x$  emissions from 4,000 to 100 ppm (26 to 0.7 kg per metric ton [57 to 1.4 lb/ton]) and can theoretically be designed for zero liquid discharge.<sup>8</sup> In practice, however, liquid blowdown of 16 kg/hr (35 lb/hr) of urea

nitrate in 180 kg/h (396 lb/hr) of water is estimated for a plant with a capacity of 320 Mg of nitric acid/d (350 tons/d).

5.1.5.1.3 Caustic scrubbing. Caustic scrubbing involves treatment of the absorber tail gas with solutions of sodium hydroxide, sodium carbonate, or other strong bases to absorb  $\text{NO}_x$  in the form of nitrate or nitrite salts in a scrubbing tower.

Typical reactions for this process are:



One disadvantage of this process is that disposal of the spent scrubbing solution can require waste-water treatment. Also, the cost of the caustic can become prohibitive.<sup>1,5,8</sup>

5.1.5.2 Chilled Absorption. Chilled absorption provides additional cooling to the absorption tower. This process is frequently used in addition to other control techniques such as extended absorption. The principal advantage of chilled absorption is improved absorber efficiency due to lower absorption temperature. However, chilled absorption by itself typically cannot reduce  $\text{NO}_x$  emissions to the level that any of the three primary control techniques can achieve. Two types of chilled absorption are the CDL/VITOK and the Tennessee Valley Authority (TVA) processes.

In the CDL/VITOK process, tail gas enters the absorber, where the gases are contacted with a nitric acid solution to both chemically oxidize and physically absorb  $\text{NO}_x$ . A flow diagram of this process is shown in Figure 5-9

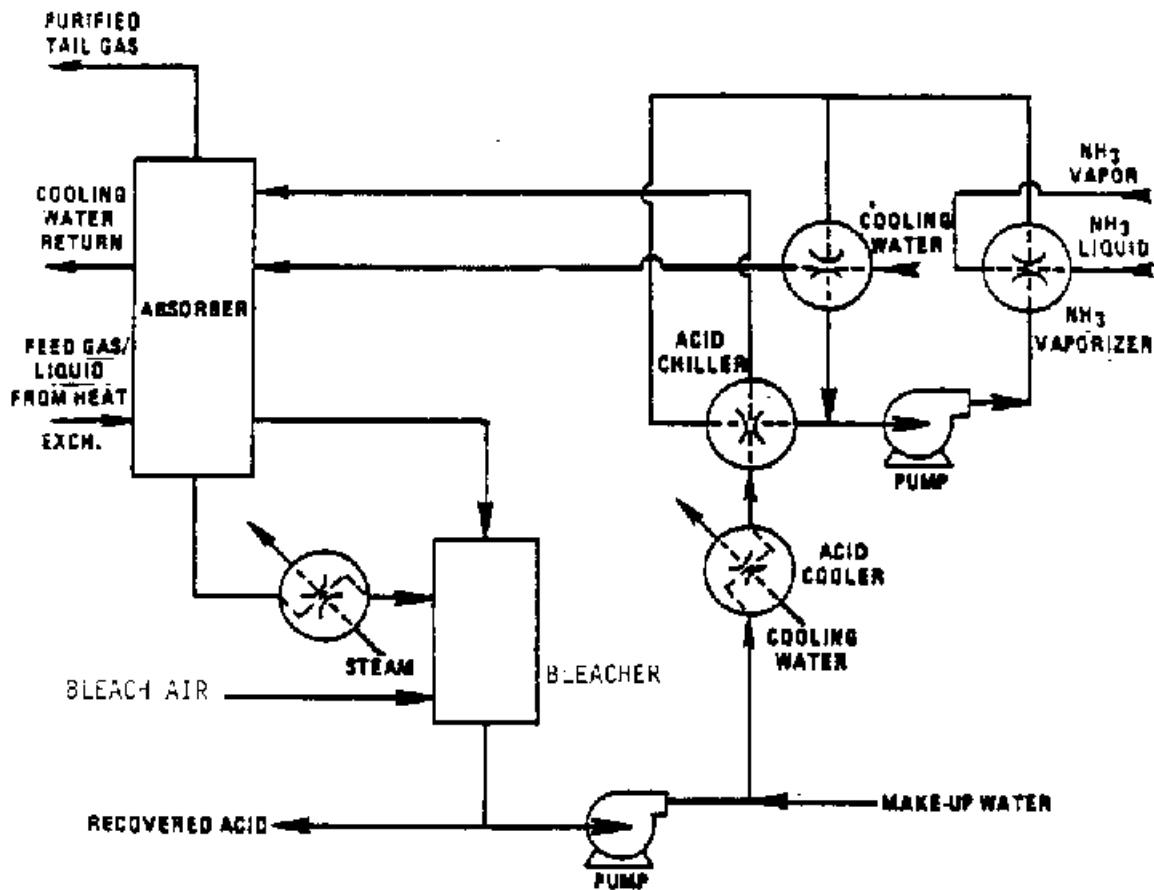


Figure 5-9. Schematic diagram of the CDL/VITOK NO<sub>x</sub> removal process.<sup>24</sup>

. The reaction of NO to NO<sub>2</sub> is catalyzed in the main absorber. The upper portion of the absorber is water-cooled to improve absorption. The nitric acid solution from the absorber is sent to a bleacher where air removes entrained gases and further oxidation occurs. The bleached nitric acid solution is then either sent to storage or recirculated to the absorber after makeup water is added. The process uses a closed-loop system to chill the recirculated acid solution and tower cooling water by ammonia evaporation.

One variation in this system proposed by CDL/VITOK includes adding an auxiliary bleacher operating in parallel with the primary unit. Another variation uses a secondary absorber with its own bleacher.<sup>8</sup>

The TVA designed and installed refrigeration for NO<sub>x</sub> abatement purposes on a nitric acid plant. This process uses ammonia from the ammonia oxidation process in a closed loop to cool the top trays of the absorber. Bleacher effluent gases are also recycled to the absorption tower. Effectiveness of the TVA process relies on high absorber inlet pressure. This process reduces product acid concentration.<sup>8,25</sup>

**5.1.5.3 Molecular Sieve Adsorption.** The molecular sieve process has been successful in controlling NO<sub>x</sub> emissions from existing plants. However, no new nitric acid plants have been built that use this form of NO<sub>x</sub> control.<sup>8</sup> The principal objections to the process are high capital and energy costs, the problems of coupling a cyclic system to a continuous acid plant operation, and bed fouling.

The pressure drop through the sieve bed is rather high and averages 34 kPa (5 psi). The average concentration of NO<sub>x</sub> in the treated tail gas discharged to the atmosphere is 50 ppm.<sup>5</sup>

Figure 5-10



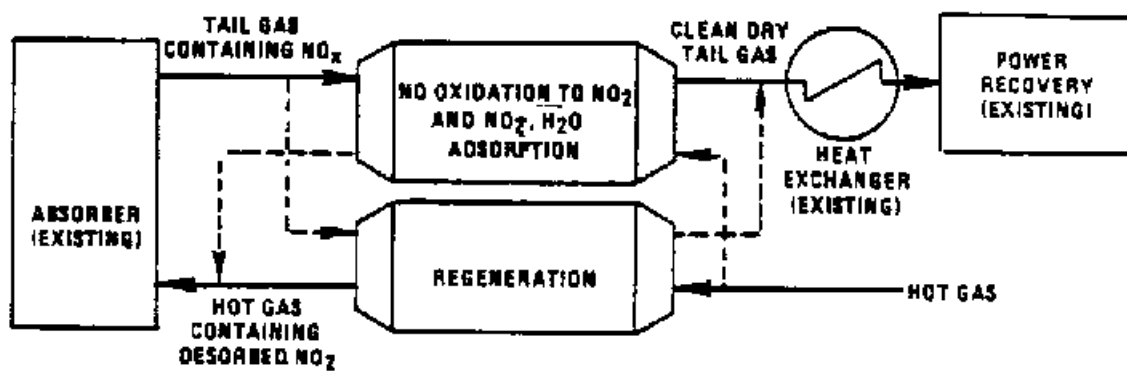


Figure 5-10. Molecular sieve system.<sup>26</sup>

shows a flow diagram of a typical molecular sieve system. The fundamental principle behind molecular sieve control is selective adsorption of  $\text{NO}_x$  followed by recycle of the  $\text{NO}_x$  back to the nitric acid plant adsorption tower. The first step of the process is to chill the absorber tail gas to between  $7^\circ$  and  $10^\circ\text{C}$  ( $45^\circ$  and  $50^\circ\text{F}$ ); the exact temperature required is governed by the  $\text{NO}_x$  concentration in the tail gas stream. Next, the chilled gas is passed through a mist eliminator to remove entrained water droplets and acid mist. Weak acid is collected in the mist eliminator to remove entrained water and acid mist. This collected weak acid is either recycled to the absorption tower or stored. Partially dried tail gas then passes to the sieve bed, where several operations proceed simultaneously:

1. Dessicant contained in the bed removes the remaining moisture from the gas stream;
2.  $\text{NO}$  in the tail gas is converted catalytically to  $\text{NO}_2$ ; and
3.  $\text{NO}_2$  is selectively adsorbed.

Regeneration is accomplished by thermal-swinging (cycling) the adsorbent/catalyst bed after it is nearly saturated with  $\text{NO}_2$ . Regeneration gas is obtained by heating a portion of the treated tail gas in an oil- or gas-fired heater. This gas is then used to desorb  $\text{NO}_2$  from the bed for recycle back to the nitric acid plant absorption tower. Both adsorption and regeneration of the bed require approximately 4 hours.<sup>5</sup>

## **5.2 ADIPIC ACID MANUFACTURING**

Adipic acid is produced at four plants in the United States. This section presents a discussion of two  $\text{NO}_x$  control techniques used at three of the plants: extended absorption and thermal reduction. A third technique, fume removal by suction, is uniquely applied by the fourth plant at which adipic acid is a byproduct.

Sections 5.2.1 and 5.2.2 present discussions of extended absorption and thermal reduction, respectively. These sections describe the control techniques, discuss factors affecting their performance, and provide emissions data that demonstrate the

level of achievable NO<sub>x</sub> control. Section 5.2.3 describes the NO<sub>x</sub> fume removal and recycle system used at the Allied-Signal plant in Hopewell, Virginia.

#### **5.2.1 Extended Absorption**

Extended absorption is used at one plant to reduce NO<sub>x</sub> emissions from adipic acid manufacturing by increasing the absorption efficiency of the NO<sub>x</sub> absorber. Increased NO<sub>x</sub> absorption efficiency is achieved by increasing the volume of the absorber, which extends the residence time of the NO<sub>x</sub>-laden gas with absorbing water, and by providing sufficient cooling to remove the heat released by the absorption process.

Extended absorption is suitable for new and retrofit adipic acid plant applications because a NO<sub>x</sub> absorption tower is an integral part of all adipic acid manufacturing processes. Extended absorption was installed as a retrofit control on the adipic acid plant that uses this control technique.<sup>27</sup>

The following sections discuss extended absorption used as a control technique for adipic acid plants. Section 5.2.1.1 describes the extended absorption system. Section 5.2.1.2 discusses factors affecting the performance of extended absorption. Levels of achievable NO<sub>x</sub> emission reductions and the performance of extended absorption are presented in Section 5.2.1.3.

##### **5.2.1.1 Description of Extended Absorption.**

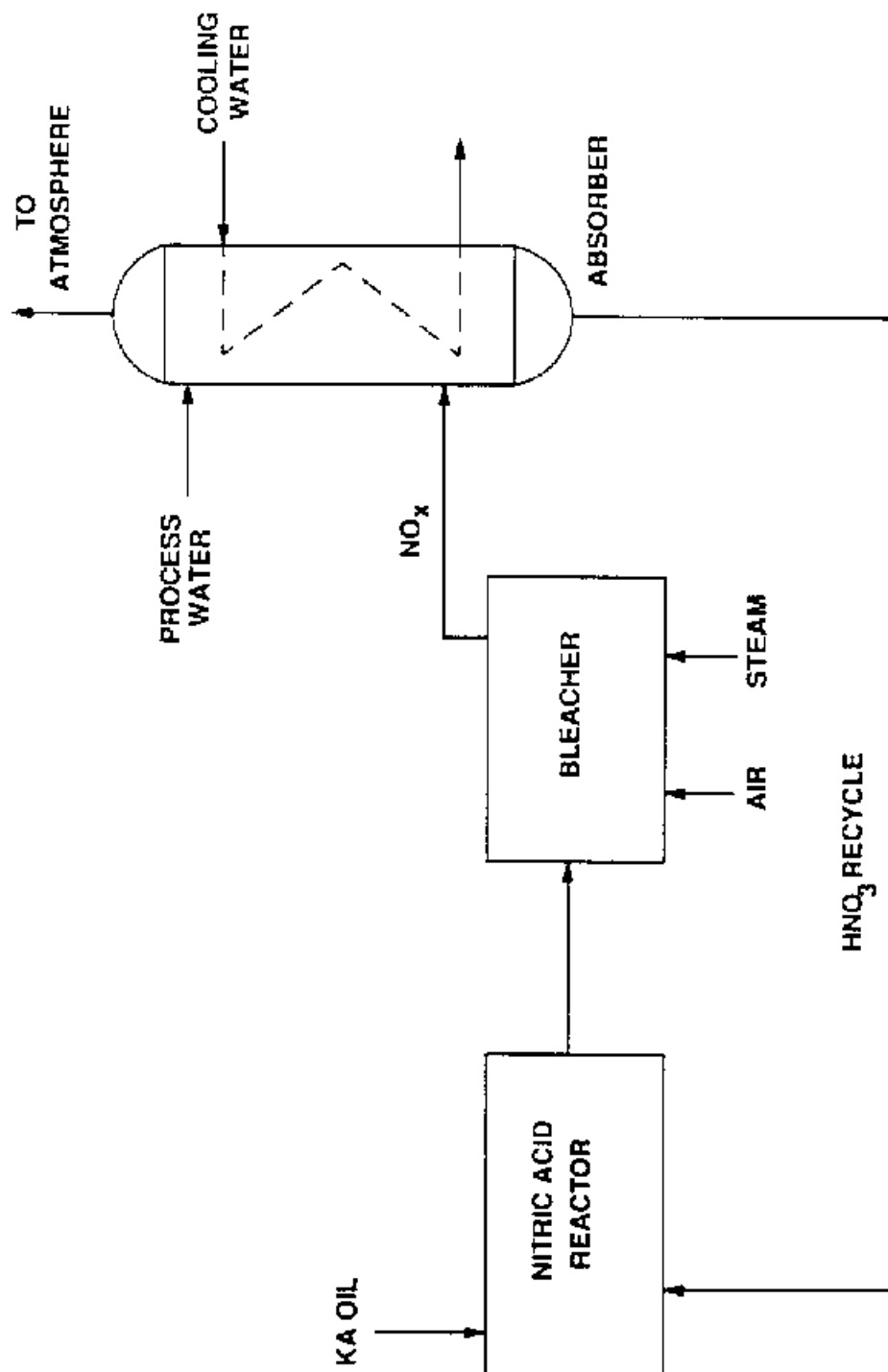


Figure 5-11. Extended adsorption for NO<sub>x</sub> control at an adipic acid plant.

is a flow diagram for the nitric acid reaction portion of a typical adipic acid plant using extended absorption for  $\text{NO}_x$  control. Following the nitric acid oxidation of the KA (ketone-alcohol) oil,  $\text{NO}_x$  is stripped from the product solution using air and steam in a bleacher. The  $\text{NO}_x$  is then recovered as a weak nitric acid solution in an absorption tower containing bubble-cap trays.

Nitrogen oxides enter the lower portion of the absorption tower and flow countercurrent to descending process water, which enters near the top of the absorption tower. Two processes occur within the absorption tower: (1)  $\text{NO}$  is oxidized to  $\text{NO}_2$ , and (2)  $\text{NO}_2$  is absorbed in water, forming nitric acid. Heat created by these processes reactions is removed by cooling water circulating in internal coils within the trays. The strength of the nitric acid recovered from the bottom of the absorption tower is about 20 percent.<sup>28</sup> This weak nitric acid is recycled to the nitric acid reactor. The tail gas exits the top of the absorber and is discharged to the atmosphere.

**5.2.1.2 Factors Affecting Performance.** Several factors that affect the performance of an extended absorber include high pressure, low temperature, long residence time, and low throughput. These factors are discussed in detail in Chapter 4 (Section 4.1.2). One adipic acid manufacturer that uses extended absorption for  $\text{NO}_x$  control cites two main design criteria for effective absorber performance: long residence time and low temperature.<sup>28</sup>

The primary purpose for increasing the size of an absorber is to increase the residence time. Increasing the residence time of  $\text{NO}_x$  in the absorber does the following: (1) allows sufficient time for  $\text{NO}_2$  to be absorbed (approximately 1 second), and (2) allows more time for  $\text{NO}$  (relatively insoluble) to be oxidized to readily soluble  $\text{NO}_2$  (minutes). The residence time can also be increased by using  $\text{O}_2$  rather than air as a bleaching agent.

Low temperature is another key factor in increasing  $\text{NO}_x$  absorption in the absorber. The lower the temperature, the faster and more efficient the  $\text{NO}_x$  absorption.<sup>28</sup> To maintain

efficient operation, heat of reaction is removed by circulating cooling water through coils in the absorber trays. At one plant, enough cooling water is circulated through the absorber such the gas temperature rises  $1^{\circ}\text{C}$  ( $1.8^{\circ}\text{F}$ ).<sup>28</sup> By maintaining a low temperature, the absorption process occurs more readily and the required residence time is also decreased.

**5.2.1.3 Performance of Extended Absorption.** Extended absorption is used to control  $\text{NO}_x$  at one adipic acid plant in the United States. This plant produces approximately 190,000 tons of adipic acid per year using the cyclohexane oxidation method.<sup>29</sup> A summary of the results of  $\text{NO}_x$  emissions tests was provided by the plant.

Nitrogen oxides monitoring was conducted over a 3-day period in 1988 to determine the level of  $\text{NO}_x$  emissions from the  $\text{NO}_x$  absorber, located downstream of a nitric acid reactor (Figure 5-11). On-line instruments used to monitor  $\text{NO}_x$  were calibrated using EPA methods. The  $\text{NO}_x$  absorber was operating at maximum rates with cooling water temperature around  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ). Samples were withdrawn from piping at the exit of the absorber. The testing showed that  $\text{NO}_x$  varied from 500 to 1,500 ppm off the column.<sup>28</sup> With State permit limits at about 4,500 ppm, the tests show that extended absorption is capable of achieving permitted levels of  $\text{NO}_x$  control. An emission factor for  $\text{NO}_x$  from the absorber was not available. However, calculations using the permit level of 700 tons per year and the plant production capacity indicate a  $\text{NO}_x$  emission factor of at least 3.7 kg of  $\text{NO}_x$  per metric ton (7.4 lb/ton) of adipic acid produced. By equating the State permit levels (700 tons/yr = 4,500 ppm) and applying that equivalence ratio to the  $\text{NO}_x$  concentrations determined from the monitoring data (500 to 1,500 ppm), a range of annual  $\text{NO}_x$  emissions and emission factors can be calculated. Using the method just described, the annual  $\text{NO}_x$  emissions for this adipic acid plant ranged from 77 to 233 tons per year. By dividing the annual  $\text{NO}_x$  emissions by the annual adipic acid production for this plant, the  $\text{NO}_x$  emission factors are found to range from

0.41 to 1.23 kg per metric ton (0.81 to 2.45 lb/ton) of adipic acid produced.

#### **5.2.2 Thermal Reduction**

Thermal reduction is used to control NO<sub>x</sub> emissions from adipic acid manufacturing by reacting the NO<sub>x</sub> in the absorber tail gas with excess fuel in a reducing atmosphere.<sup>30</sup> This technique of NO<sub>x</sub> reduction is used at two adipic acid plants. One plant reduces NO<sub>x</sub> in a powerhouse boiler, while the other uses a thermal reduction furnace. However, both techniques can be considered similar and are treated as such in this section.<sup>30</sup>

The following sections discuss thermal reduction used as a control technique for adipic acid plants. Section 5.2.2.1 describes the thermal reduction process. Factors affecting the performance of thermal reduction are presented in Section 5.2.2.2. Levels of controlled NO<sub>x</sub> emissions and performance of thermal reduction are presented in Section 5.2.2.3.

**5.2.2.1 Description of Thermal Reduction.** Thermal (or flame) reduction reduces NO<sub>x</sub> by reaction with excess fuel in a reducing environment. In a typical thermal reduction unit, the NO<sub>x</sub>-laden stream and excess fuel (usually natural gas) mixture passes through a burner where the mixture is heated above its ignition temperature. The hot gases then pass through one or more chambers to provide sufficient residence time to ensure complete combustion. For economic reasons, heat recovery is an integral part of thermal reduction units.<sup>31</sup> A heat recovery steam generator typically is used for heat recovery.

The thermal reduction unit used at one plant consists of two cylindrical towers, 20 feet high and 8 feet in diameter, through which the gas flows at a rate of 15,000 lb/hr.<sup>32</sup> Figure 5-12

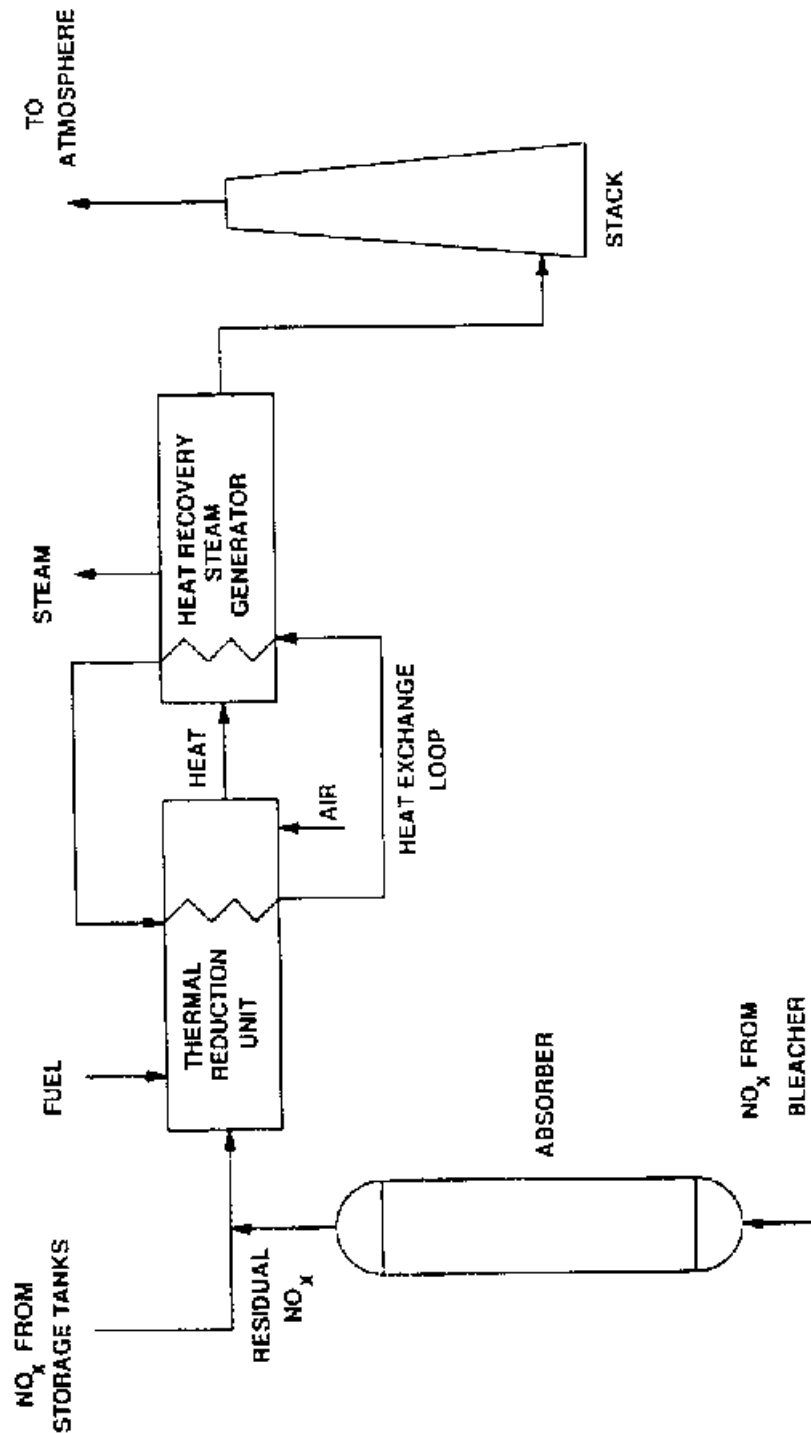


Figure 5-12. Thermal reduction unit for  $\text{NO}_x$  control at an adipic acid plant.



is a simplified flow diagram of an adipic acid plant using thermal reduction for NO<sub>x</sub> control. Thermal reduction reduces NO<sub>x</sub> in three steps. First, the absorber tail gas is mixed with excess fuel and burned at high temperature (1090°C [2000°F]) to form CO<sub>2</sub>, N<sub>2</sub>, and H<sub>2</sub>O in two reactions as follows:



In the second step, the gases are cooled to approximately 760°C (1400°F), usually by heat exchange. In the third step of the process, air is admitted and the excess fuel is burned at the lower (760°C [1400°F]) temperature. Burning the excess fuel at this temperature prevents atmospheric nitrogen fixation, called thermal NO<sub>x</sub>.<sup>33</sup> Two adipic acid plants that use thermal reduction to control NO<sub>x</sub> produce steam with the heat generated from their NO<sub>x</sub> control systems.<sup>32,34</sup> For example, one plant with an annual adipic acid production capacity of 300,000 tons per year produces approximately 50,000 lb/hr of steam from its thermal reduction unit.<sup>40</sup>

In addition to NO and NO<sub>2</sub>, adipic acid manufacturing also produces large quantities of N<sub>2</sub>O. This N<sub>2</sub>O can be removed upstream of the NO<sub>x</sub> absorber and recovered for medical use. If not recovered for resale, the N<sub>2</sub>O generally decomposes in the thermal reduction unit to nitrogen and oxygen; however, some NO<sub>x</sub> is created as a result of the decomposition. There is no data to quantify the percentage of NO<sub>x</sub> reformation in the thermal reduction unit, although the net effect of this control technique is that NO<sub>x</sub> emissions do not exceed the amount of NO<sub>x</sub> fed to the unit.<sup>32</sup>

**5.2.2.2 Factors Affecting Performance.** Thermal reduction is essentially a two-step combustion process burning fuel, air, and NO<sub>x</sub>. The NO<sub>x</sub> reduction process occurs after complete combustion of the air. The effectiveness of this NO<sub>x</sub> reduction process relies on two factors: temperature and excess fuel.

Temperature is an important criterion of thermal reduction unit design. Temperature greatly affects the rate at which the combustion/NO<sub>x</sub> reduction reactions occur. The higher the

temperature, the faster the reactions proceed.<sup>31</sup> Faster reaction time reduces the amount of residence time necessary for complete combustion, thereby reducing the required size of the unit. However, since fuel costs are the major operating expense for thermal reduction units, economics dictates the balance between operating temperature and unit size. Typical operating temperature for a thermal reduction unit is 1090°C (2000°F).

Thermal reduction units typically burn natural gas (methane) in a fuel-rich mode to create a reducing environment. Excess fuel is required (1) to maintain temperature and (2) to reduce NO<sub>x</sub>. Enough fuel must be admitted to the burners to promote the initial combustion process. As the temperature in the combustion chamber increases, the combustion reaction becomes increasingly self-sustaining. Then, only enough fuel to ensure complete combustion of the air is needed. However, to reduce NO<sub>x</sub>, excess fuel is required to react with the oxygen component of NO<sub>x</sub>, forming CO<sub>2</sub> and water vapor while reducing NO<sub>x</sub> to elemental nitrogen. The amount of excess fuel required depends on the NO<sub>x</sub> concentration inlet of the thermal reduction unit and the operating temperature.

**5.2.2.3 Performance of Thermal Reduction.** Thermal reduction is used to control NO<sub>x</sub> emissions at two adipic acid plants in the United States. Current NO<sub>x</sub> emissions data are available for only one plant. However, a study of adipic acid plants performed in 1976 presents NO<sub>x</sub> emissions data for both plants.

Table 5-6 presents the available NO<sub>x</sub> emissions data for the two adipic acid plants using thermal reduction. Both plants produce adipic acid using the cyclohexane oxidation process. The controlled NO<sub>x</sub> emission rate for Plant B (371 lb/hr) is the average of 21 tests performed in 1989. The measured NO<sub>x</sub> emission

**TABLE 5-6. NITROGEN OXIDES EMISSIONS FROM ADIPIC ACID PLANTS  
USING THERMAL REDUCTION**

| Plant | Annual<br>production<br>capacity,<br>tons/yr | Fuel                              | NO <sub>x</sub> emissions<br>rate, lb/hr | Annual NO <sub>x</sub><br>emissions,<br>ton/yr | NO <sub>x</sub> emission<br>factor, lb/ton | Efficiency,<br>percent <sup>a</sup> |
|-------|--|-----------------------------------|--|--|--|-------------------------------------|
| B     | 350,000                                      | Natural gas and No. 6<br>fuel oil | 371 <sup>b</sup>                         | 1,630 <sup>c</sup>                             | 9.3  | 69                                  |
| C     | 300,000                                      | Natural gas                       | 112 <sup>d</sup>                         | 490  | 3.3  | 294                                 |

rates for the 21 tests ranged from 191 to 608 pounds of NO<sub>x</sub> per hour. The sources of uncontrolled NO<sub>x</sub> emissions in Plant B were tail gas from the NO<sub>x</sub> absorber (7,000 ppmv) and fume sweeps of the nitric acid storage tanks (9,000 ppmv).<sup>32</sup> Storage tank NO<sub>x</sub> fumes are routed to the boilers. Using the average NO<sub>x</sub> emission rate and assuming Plant B operates 24 hours per day, the NO<sub>x</sub> emission factor is calculated by dividing the annual NO<sub>x</sub> emissions by the annual adipic acid production capacity. This calculation results in a NO<sub>x</sub> emission factor of 4.7 kg of NO<sub>x</sub> per metric ton of adipic acid produced (9.3 lb/ton). It should be noted that several off-gas streams from various sources are fed into the thermal reduction unit for combustion at Plant B. Therefore, determining the amount of NO<sub>x</sub> contributed by the NO<sub>x</sub> absorber and the tank fume sweeps is difficult.

The NO<sub>x</sub> emissions data for Plant C were taken from a report on emissions from adipic acid plants (1976). No current NO<sub>x</sub> emissions data for Plant C were available from the plant or from the State. The NO<sub>x</sub> emission rate (determined from a 1976 stack test) from the thermal reduction unit is 112 pounds of NO<sub>x</sub> per hour.<sup>30</sup> The NO<sub>x</sub> emission factor was determined using the same assumptions as used for Plant B and was calculated to be 1.7 kg of NO<sub>x</sub> per metric ton (3.3 lb/ton) of adipic acid produced.

The NO<sub>x</sub> concentration in the flue gas of the thermal reduction unit was 1,500 ppm.<sup>30</sup> Although NO<sub>x</sub> concentrations as low as 500 ppm were reported to be achievable with this unit, ceramic cracking in the unit resulted from operating at the high temperatures required to produce that level of NO<sub>x</sub> concentration.<sup>30</sup>

### **5.2.3 Other Control Technique**

Allied-Signal, Inc., in Hopewell, Virginia, produces about 13,000 tons of adipic acid per year. The adipic acid is produced as a byproduct of their caprolactam plant.<sup>30,35</sup> This plant is unique because it produces a small quantity of adipic acid relative to the other three plants and because, unlike other plants, the NO<sub>x</sub> absorber is not the main source of NO<sub>x</sub> emissions.

Instead, the major sources of NO<sub>x</sub> emissions are the adipic acid reactors and nitric acid storage tanks.<sup>35</sup>

Recent data for NO<sub>x</sub> emissions were not available. The NO<sub>x</sub> emissions from the adipic acid reactors and the storage tanks are recovered by suction and transferred to the caprolactam side for use in that process.<sup>35</sup> Likewise, the tail gas from the NO<sub>x</sub> absorber is routed to the caprolactam process.<sup>30</sup> Allied contends that NO<sub>x</sub> emissions are low, although no emissions test data were provided.<sup>35</sup>

#### **5.2.4 Control Technique Performance Summary**

Table 5-7 summarizes the NO<sub>x</sub> control data for extended absorption and thermal reduction used in adipic acid manufacturing. For each control technique, Table 5-7 presents the level of achievable NO<sub>x</sub> control and the NO<sub>x</sub> control efficiency (based on an uncontrolled emission factor of 53 lb/ton).

**TABLE 5-7. SUMMARY OF NO<sub>x</sub> CONTROL TECHNIQUE  
PERFORMANCE FOR ADIPIC ACID PLANTS**

| Control technique              | Emission factor |                | Control efficiency,<br>percent <sup>a</sup> |
|--------------------------------|-----------------|----------------|---|
|                                | kg/metric ton   | lb/ton         |   |
| Extended absorption            | 3.7             | 7.4            | 86  |
| Thermal reduction <sup>b</sup> | 4.9 (1.7-8.4)   | 9.8 (3.3-16.7) | 81  |

<sup>a</sup>Based on an uncontrolled NO<sub>x</sub> emission factor of 53 lb/ton.

<sup>b</sup>Based on recent reported data and data in the 1976 adipic acid study. Emission factor is the average of available data. Range is given in parenthesis.

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## 6.0 CONTROL COSTS

This chapter presents capital and annual costs and cost effectiveness for the NO<sub>x</sub> control techniques used in nitric and adipic acid manufacturing plants. Section 6.1 presents costs for NO<sub>x</sub> control techniques used in nitric acid plants. The costs are presented for the following controls: (1) extended absorption, (2) NSCR, and (3) SCR. Section 6.2 presents costs for NO<sub>x</sub> control techniques used in adipic acid plants. These costs are for (1) extended absorption and (2) thermal reduction.

Three model plant sizes were used to develop costs for the nitric acid plant NO<sub>x</sub> control techniques. These model plant sizes are 181, 454, and 907 metric tons/d (200, 500, and 1,000 tons/d) of nitric acid production (100 percent basis). These three sizes cover the range of most nitric acid plants in the United States. Actual plant sizes were used to develop costs for the adipic acid plant NO<sub>x</sub> control techniques.

The capital cost of a control system includes the purchased equipment costs, direct installation costs, and indirect installation costs. Purchased equipment costs are those costs related to purchasing the control equipment. Direct installation costs include costs for foundations and supports, erecting and handling the equipment, electrical work, piping, insulation, and painting. Indirect installation costs include engineering, contractor's fees, construction expenses, and a contingency fee.<sup>1</sup>

Annual costs represent the cost of owning and operating the control system. The total annual cost consists of direct costs, indirect costs, and recovery credits. Direct costs vary with the quantity of exhaust gas processed by the control system and include raw materials, utilities, waste treatment and disposal,

maintenance materials, replacement parts, and operating, supervisory, and maintenance labor. Indirect costs are fixed regardless of the quantity of exhaust gas processed by the control system and include overhead, administrative charges, property taxes, insurance, and capital recovery. Direct and indirect costs are offset by recovery credits, taken for materials or energy recovered by the control system, which may be sold, recycled to the system, or reused elsewhere at the site.<sup>1</sup>

Cost effectiveness is the cost of controlling NO<sub>x</sub> emissions by dividing the annual control cost by the quantity of NO<sub>x</sub> removed from the exhaust gas stream. Units of cost effectiveness are given in dollars per ton of NO<sub>x</sub> removed (\$/ton). Annual NO<sub>x</sub> emission reduction levels were developed assuming an uncontrolled emission level of 10 kg per metric ton (20 lb/ton), which is equivalent to a NO<sub>x</sub> concentration of 1,500 ppm (typical for modern pressure plants), and a controlled emission level based on the average control efficiency of each control technique.

#### **6.1 COSTS OF CONTROL TECHNIQUES USED IN NITRIC ACID PLANTS**

This section presents costs for NO<sub>x</sub> control systems used in nitric acid plants. Three control systems are analyzed: (1) extended absorption, (2) NSCR, and (3) SCR. Capital and annual costs and cost effectiveness are presented for three model plant sizes: 181, 454, and 907 metric tons/d (200, 500, and 1,000 tons/d) of nitric acid production (100 percent basis). The cost estimates for extended absorption and NSCR are taken from the 1984 NSPS review report. Cost estimates for SCR are based on cost information obtained from an SCR vendor and a U.S. nitric acid plant that uses SCR for NO<sub>x</sub> control.

##### **6.1.1 Extended Absorption**

This section presents capital and annual costs associated with using extended absorption to control NO<sub>x</sub> emissions from nitric acid plants. The extended absorption control system costed in this chapter consists of a secondary absorber and a

closed-loop, chilled-water system for recovering additional nitric acid. This system is described in detail in Chapter 5.

**6.1.1.1 Capital Costs.** Table 6-1

**TABLE 6-1. CAPITAL COST SUMMARY FOR NITRIC ACID PLANTS USING  
EXTENDED ABSORPTION FOR NO<sub>x</sub> CONTROL  
(Costs, \$1,000)  
(January 1991 dollars)**

| Description  | Plant size, metric tons/d (tons/d) |           |             |
|--|------------------------------------|-----------|-------------|
|  | 181 (200)                          | 454 (500) | 907 (1,000) |
| <b>A. Direct costs</b>                                 |                                    |           |             |
| 1. Absorber tower <sup>a</sup>                         | 377                                | 637       | 933         |
| 2. Pumps and drives <sup>b</sup>                       | 88                                 | 114       | 218         |
| 3. Chilled water system <sup>c</sup>                   | 23                                 | 46        | 80          |
| 4. Piping, valves, and fittings <sup>d</sup>           | 86                                 | 211       | 333         |
| 5. Electrical <sup>e</sup>                             | 50                                 | 84        | 124         |
| 6. Instrumentation <sup>f</sup>                        | 50                                 | 84        | 124         |
| Total direct costs (TDC)                               | 674                                | 1,176     | 1,812       |
| <b>B. Indirect costs</b>                               |                                    |           |             |
| 1. Contractor's fee (6% of TDC) <sup>g</sup>           | 40                                 | 71        | 109         |
| 2. Engineering (10% of TDC) <sup>g</sup>               | 67                                 | 118       | 181         |
| 3. Construction expense (8% of TDC) <sup>g</sup>       | 54                                 | 94        | 145         |
| Total indirect costs (TIC)                             | 161                                | 283       | 435         |
| <b>C. Contingency (10% of TOC and TIC)<sup>g</sup></b> |                                    |           |             |
|  | 84                                 | 146       | 225         |
| Total indirect costs (TIC)                             | 161                                | 283       | 435         |
| Total capital cost (TDC + TIC + contingency)           | 919                                | 1,600     | 2,470       |

<sup>a</sup>Reference 3, pp. 768, 769, 770, 772.

<sup>b</sup>Reference 3, pp. 555, 557, 558.

<sup>c</sup>Reference 4, pp. 265, 278.

<sup>d</sup>Reference 3, pp. 529, 530.

<sup>e</sup>Reference 3, p. 171.

<sup>f</sup>Reference 3, p. 170.

<sup>g</sup>Reference 3, p. 164.

shows the capital costs for an extended absorption system estimated for each of the three model plant sizes. The extended absorber is a bubble tray column with 39 trays, regardless of absorber size. The chilled-water cooling system for the extended absorber consists of a chiller, compressor, condenser, chilled water tank, and the necessary pumps and piping.<sup>2</sup> Estimates of the capital cost are based on published cost data.<sup>3,4</sup>

The purchased equipment cost of each system component was estimated along with installation, labor, and materials costs to obtain the total direct costs. This cost includes all the necessary auxiliaries, such as foundations, insulation, and ladders. The indirect costs were calculated by multiplying the total direct costs by the factor shown for each indirect cost component. All of these costs and factors were taken from References 3 and 4 and escalated to January 1991 dollars using the Chemical Engineering (CE) Plant Cost Index.

#### **6.1.1.2 Annual Costs.**

**TABLE 6-2. ANNUAL COST SUMMARY FOR NITRIC ACID PLANTS USING  
EXTENDED ABSORPTION FOR NO<sub>x</sub> CONTROL  
(Costs, \$1,000)  
(January 1991 dollars)**

| Description  | Plant size, metric tons/d (tons/d) |            |              |
|--|------------------------------------|------------|--------------|
|  | 181 (200)                          | 454 (500)  | 907 (1,000)  |
| <b>A. Direct operating costs</b>                   |                                    |            |              |
| 1. Utilities                                       |                                    |            |              |
| a. Water (\$0.74/1,000 gal)                        | 19                                 | 53         | 96           |
| b. Electricity (\$0.06/kWh)                        | 72                                 | 181        | 390          |
| 2. Operating labor                                 |                                    |            |              |
| a. Direct (\$22/man-hr)                            | 47                                 | 70         | 95           |
| b. Supervision (20% of direct labor)               | 9                                  | 14         | 19           |
| 3. Maintenance and supplies<br>(4% x capital cost) |                                    |            |              |
| a. Labor and material                              | 37                                 | 64         | 99           |
| b. Supplies  |                                    |            |              |
| <b>B. Indirect operating costs</b>                 |                                    |            |              |
| 1. Overhead  |                                    |            |              |
| a. Plant (50% x A2 and A3 above)                   | 47                                 | 74         | 107          |
| b. Payroll (20% x A2 above)                        | 11                                 | 17         | 23           |
| 2. Fixed costs                                     |                                    |            |              |
| a. Capital recovery<br>(13.5% x capital cost)      | 124                                | 217        | 334          |
| b. Insurance, taxes, and G&A (4% x capital cost)   | 37                                 | 64         | 99           |
| <b>C. Subtotal</b>                                 | <b>403</b>                         | <b>754</b> | <b>1,260</b> |
| <b>D. Credit for recovered acid</b>                | <b>201</b>                         | <b>504</b> | <b>1,010</b> |
| <b>E. Net annualized cost (C-D)</b>                | <b>202</b>                         | <b>250</b> | <b>257</b>   |

shows the annual costs for an extended absorption system estimated for each of the three model plant sizes. The annual costs include the direct operating costs for the pumps, water chiller, and the extended absorber. Utilities and direct operating labor costs are based on the following estimates:<sup>2</sup>

| Annual cost element                | Plant size, metric tons/d (tons/d) |           |             |
|------------------------------------|------------------------------------|-----------|-------------|
|                                    | 181 (200)                          | 454 (500) | 907 (1,000) |
| Water, 10 <sup>6</sup> gallons     | 26                                 | 72        | 130         |
| Electricity, 10 <sup>6</sup> kW-hr | 1.2                                | 3.02      | 6.5         |
| Labor, man-hr                      | 2,130                              | 3,200     | 4,330       |

Indirect operating costs are based on percentage factors applied to direct operating costs and capital costs.

The recovery credit for recovered nitric acid is highly sensitive to the quantity and quality of the recovered acid. Furthermore, although nitric acid prices are quoted in the Chemical Marketing Reporter, these prices are not directly applicable because many nitric acid plants are captive facilities (acid is produced for in-house use, rather than for market use). The value of the recovered acid was calculated based on the following assumptions:

1. Acid production increases by 1.6 percent; and
2. The increased production is a weak acid having a value of \$175 per ton.<sup>5</sup>

**6.1.1.3 Cost Effectiveness.** Table 6-3 shows the cost effectiveness for the three model plants using extended absorption for NO<sub>x</sub> control. Cost effectiveness ranges from \$83/metric ton (\$76/ton) for a 907-metric tons/d (1,000-tons/d) plant to \$327/metric ton (\$297/ton) for a 181-metric tons/d (200-tons/d) plant. The data show that cost effectiveness improves (i.e., \$/ton of NO<sub>x</sub> removed decreases) as plant size increases. This improved cost effectiveness is attributed to the nitric acid recovery credit. As Table 6-2 shows, as plant size increases, the acid recovery credit increases at a higher rate



than the direct and indirect operating costs for each plant, resulting in increasingly lower net annual costs. It should be noted, however, that the amount of acid recovery credit is sensitive to the recovery efficiency at each plant and to the value of the recovered acid.<sup>2</sup> In general, the cost of using extended absorption for NO<sub>x</sub> control decreases (on a \$/ton basis) as plant size increases.

**6.1.2      Nonselective Catalytic Reduction**

This section presents capital and annual costs associated with using NSCR to control NO<sub>x</sub> emissions from nitric acid plants. Although nonselective reduction of tail gas pollutants is generally considered a part of the process (because of the recovery of heat), it is generally recognized that some portion of the system constitutes air pollution control. A detailed description of an NSCR unit and its operation are provided in

**TABLE 6-3. COST EFFECTIVENESS FOR MODEL PLANTS USING EXTENDED  
ABSORPTION FOR NO<sub>x</sub> CONTROL  
(January 1991 dollars)**

| Plant size,<br>metric tons/d<br>(tons/d) | Annual cost,<br>\$1,000/yr | NO <sub>x</sub> removed,<br>metric tons/yr<br>(tons/yr) | Cost<br>effectiveness,<br>\$/metric ton NO <sub>x</sub><br>(\$/ton NO <sub>x</sub> ) |
|--|----------------------------|---|--|
| 181 (200)                                | 202                        | 617 (679)   | 327 (297)  |
| 454 (500)                                | 250                        | 1,550 (1,700)   | 161 (147)  |
| 907 (1,000)                              | 257                        | 3,090 (3,400)   | 83 (76)  |

Chapter 5. For costing purposes, it is assumed that the catalytic treatment unit, the catalyst, the short run of pipe on either side of the unit for the gases, and the fuel lines comprise the air pollution control system.

**6.1.2.1 Capital Costs.** Because of the proprietary nature of the cost information, no current detailed capital cost data for an NSCR unit could be obtained. Therefore, capital costs are based on cost data in the 1984 NSPS review report. In that report, the capital costs of an NSCR unit are based on a turnkey price of \$2.3 million (January 1983) which includes the cost of the catalytic unit and the catalyst. The capital costs are determined for the model plants by applying the Six-Tenths Power Rule to this cost. Escalating to January 1991 dollars using the CE Plant Cost Index, capital costs for an NSCR system are as follows:<sup>2</sup>

| Plant size, metric tons<br>(tons/d) | Capital cost, \$10 <sup>6</sup> /d<br>(January 1991 dollars) |
|-------------------------------------|--|
| 181 (200)                           | 1.07   |
| 454 (500)                           | 1.86   |
| 907 (1,000)                         | 2.82   |

6.1.2.2 Annual Costs. Table 6-4

**TABLE 6-4. ANNUAL COST SUMMARY FOR NITRIC ACID PLANTS USING  
 NONSELECTIVE CATALYTIC REDUCTION FOR NO<sub>x</sub> CONTROL  
 (Costs, \$1,000)  
 (January 1991 dollars)**

| Description  | Plant size, metric tons/d (tons/d) |              |              |
|--|------------------------------------|--------------|--------------|
|  | 181 (200)                          | 454 (500)    | 907 (1,000)  |
| <b>A. Direct operating costs</b>                       |                                    |              |              |
| 1. Utilities   |                                    |              |              |
| a. Natural gas (net of recovered heat) at \$4.12/MMBtu | 216                                | 546          | 1,080        |
| 2. Operating labor                                     |                                    |              |              |
| a. Direct (\$22/man-hr)                                | 16                                 | 16           | 16           |
| b. Supervision (20% of direct labor)                   | 3                                  | 3            | 3            |
| 3. Maintenance and supplies (4% x capital cost)        | 43                                 | 74           | 113          |
| a. Labor and material                                  |                                    |              |              |
| b. Supplies  |                                    |              |              |
| <b>B. Indirect operating costs</b>                     |                                    |              |              |
| 1. Overhead  |                                    |              |              |
| a. Plant (50% x A2 and A3 above)                       | 31                                 | 47           | 66           |
| b. Payroll (20% x A2 above)                            | 4                                  | 4            | 4            |
| 2. Fixed costs   |                                    |              |              |
| a. Capital recovery (13.5% x capital cost)             | 145                                | 251          | 381          |
| b. Insurance, taxes, and G&A (4% x capital cost)       | 43                                 | 74           | 113          |
| <b>C. Total</b>  | <b>501</b>                         | <b>1,010</b> | <b>1,780</b> |

shows the annual costs for an NSCR system estimated for the three model plant sizes. The direct costs consist of the fuel (natural gas assumed) used in the catalytic reduction unit, operating and maintenance labor, and supplies.

Effective fuel use is reduced by postoxidation heat recovery. A unit that treats 30.1 m<sup>3</sup>/s (64,000 standard cubic feet per minute [scfm]) of tail gas consumes about 1,240 m<sup>3</sup> (45,000 ft<sup>3</sup>) of natural gas per hour. The heat content of this quantity of natural gas is about 45.6 gigajoules (GJ) (43 million Btu), of which 23.5 GJ (22.2 million Btu), or 52 percent, is recovered downstream. Consequently, the net energy requirement is about 5.74 megajoules (MJ) per 28.3 m<sup>3</sup> (5.42 thousand Btu/1,000 scf) of tail gas.<sup>2</sup> Utilities and direct operating labor costs are based on the following:

| Annual cost element              | Plant size, metric tons/d (tons/d) |           |             |
|----------------------------------|------------------------------------|-----------|-------------|
|                                  | 181 (200)                          | 454 (500) | 907 (1,000) |
| Natural gas, 10 <sup>6</sup> Btu | 52,500                             | 130,000   | 263,000     |
| Labor, man-hr                    | 733                                | 733       | 733         |

Direct operating labor is estimated at 0.5 man-hr per shift, regardless of the unit size. As with the extended absorption system, maintenance and supplies are estimated at 4 percent of the capital cost (including the average cost of catalyst replacement). Reportedly, the catalyst must be replaced every 3 to 8 years at a cost of about \$517,000 for a plant producing 816 metric tons/d (900 tons/d).<sup>2</sup> Therefore, the estimated average annual cost of catalyst replacement (5-year life) at the model plants is:<sup>2</sup>

| Plant size, metric tons (tons/d) | Capital cost, \$10 <sup>6</sup> /d<br>(January 1991 dollars) |
|----------------------------------|--|
| 181 (200)                        | 20.7   |
| 454 (500)                        | 53.2   |
| 907 (1,000)                      | 104.9  |

Estimates of indirect operating costs are based on percentage factors applied to direct operating costs and capital costs.

**6.1.2.3 Cost Effectiveness.** Table 6-5 shows the cost effectiveness for the three model plants using NSCR for NO<sub>x</sub> control. Cost effectiveness ranges from \$639 per metric ton (\$581 per ton) of NO<sub>x</sub> removed in a 907-metric tons/d (1,000-tons/d) plant to \$904/metric ton (\$823/ton) of NO<sub>x</sub> removed in a 181-metric tons/d (200-tons/d) plant. In comparison with the cost-effectiveness data for extended absorption (Table 6-3), NSCR is considerably less cost effective. This effect can be

**TABLE 6-5. COST EFFECTIVENESS FOR MODEL PLANTS USING  
NONSELECTIVE CATALYTIC REDUCTION FOR NO<sub>x</sub> CONTROL  
(January 1991 dollars)**

| Plant size,<br>metric tons/d<br>(tons/d) | Annual cost,<br>\$1,000/yr | NO <sub>x</sub> removed,<br>metric tons/yr<br>(tons/yr) | Cost<br>effectiveness,<br>\$/metric ton NO <sub>x</sub><br>(\$/ton NO <sub>x</sub> ) |
|--|----------------------------|---|--|
| 181 (200)                                | 501                        | 637 (701)   | 786 (715)  |
| 454 (500)                                | 1,015                      | 1,600 (1,760)   | 634 (580)  |
| 907 (1,000)                              | 1,778                      | 3,190 (3,510)   | 557 (507)  |

attributed to higher utilities costs for NSCR and the lack of any recovery credit.

**6.1.3 Selective Catalytic Reduction**

This section presents the costs associated with using SCR to control NO<sub>x</sub> emissions from nitric acid plants. Capital costs are presented in Section 6.1.3.1; annual costs are presented in Section 6.1.3.2; and Section 6.1.3.3 presents cost effectiveness.

**6.1.3.1 Capital Costs. Table 6-6**



**TABLE 6-6. CAPITAL COST SUMMARY FOR NITRIC ACID PLANTS USING  
SELECTIVE CATALYTIC REDUCTION FOR NO<sub>x</sub> CONTROL  
(Costs, \$1,000)<sup>a</sup>  
(January 1991 dollars)**

| Description  | Plant size, metric tons/d (tons/d) |           |             |
|--|------------------------------------|-----------|-------------|
|  | 181 (200)                          | 454 (500) | 907 (1,000) |
| <b>A. Direct Costs</b>                                     |                                    |           |             |
| 1. Catalyst vessel   | 35                                 | 50        | 65          |
| 2. Catalyst capital cost                                   | 45                                 | 100       | 190         |
| 3. Grid <sup>b</sup>                                       | 0-30                               | 0-30      | 0-30        |
| 4. Blowers <sup>c</sup>                                    | 0-30                               | 0-30      | 0-30        |
| 5. Instrumentation <sup>d</sup>                            | 40-200                             | 40-200    | 40-200      |
| Total direct costs (TDC)                                   | 120-340                            | 190-410   | 295-515     |
| <b>B. Indirect Costs</b>                                   |                                    |           |             |
| 1. Contractor's fee (6% TDC)                               | 7.2-20.4                           | 11.4-24.6 | 17.7-30.9   |
| 2. Engineering (10% TDC)                                   | 12-34                              | 19-41     | 29.5-51.5   |
| 3. Construction (8% TDC)                                   | 9.6-27.2                           | 15.2-32.8 | 23.6-41.2   |
| Total indirect costs (TIC)                                 | 28.8-81.6                          | 45.6-98.4 | 70.8-123.6  |
| C. Contingency (10% TDC and TIC)                           | 14.9-42.2                          |           | 36.6-63.9   |
| Total capital investment (TCI) = (TDC + TIC + contingency) | 164-464                            | 259-559   | 402-703     |
| Average TCI  | 314                                | 409       | 553         |

<sup>a</sup>Based on cost estimates provided by SCR vendor.

<sup>b</sup>Based on size of grid required. In some cases, no grid is required (\$0).

<sup>c</sup>Based on temperature requirements of blower. In some cases, no blower is required.

<sup>d</sup>Dependent on sophistication of instrumentation.

shows the capital costs for an SCR system estimated for each of the three model plant sizes. The estimated costs were provided by a catalyst manufacturer (Engelhard Corporation) based on the following information:<sup>6</sup>

| Plant size, metric tons (tons/d) | Stack flow rate, scfm |
|----------------------------------|-----------------------|
| 181 (200)                        | 15,000                |
| 454 (500)                        | 34,000                |
| 907 (1,000)                      | 60,000                |

Nitric acid concentration: 58 percent nitric acid

Absorber tail gas NO<sub>x</sub> content: (1,500 ppm) equal amounts of NO and NO<sub>2</sub>

Absorber tail gas O<sub>2</sub> content: 3 percent O<sub>2</sub>

Temperature (inlet of SCR): 355°C (671°F)

Pressure (inlet of SCR): 612 kPa (90 psi)

Ammonia slip: 10 ppm

Control efficiency: 86 percent reduction (based on reduction to 209 ppm)

Catalyst: vanadia-titania over honeycomb substrate

The total capital cost of the SCR system depends on the design and requirements of the system. Capital cost variability is attributed to three system components: the grid, blowers, and instrumentation. Depending on the size of the catalyst vessel, an injection "grid" may be required to ensure an even distribution of ammonia across the face of the catalyst. A grid is usually required for large SCR units. The cost for a grid ranges as high as \$30,000, depending on injection system requirements.<sup>6</sup>

Blowers may be required if air is used as a carrier for the ammonia. The blowers are used to overcome the pressure within the catalyst vessel. The temperature of the carrier air affects the cost of the blowers. If recirculated flue gas is used, high-temperature-resistant blowers are required, consequently increasing the cost. Capital cost for the blowers can range as high as \$30,000, depending on the type of blower used.<sup>6</sup> The need

for blowers can be eliminated if pressurized steam is used as the carrier.<sup>7</sup>

Instrumentation is used to monitor unconverted NO<sub>x</sub> and/or ammonia slip in the exhaust stream. The cost of the instrumentation varies from \$40,000 to \$200,000 depending on the degree of sophistication. Degree of sophistication ranges from simple gas flow meters to equipment capable of data acquisition and trend analysis.<sup>6</sup>

Capital costs were also provided by First Chemical Corporation in Pascagoula, Mississippi. First Chemical is a new nitric acid plant (producing 250 tons/d) that conducted compliance testing in April 1991. The SCR system was purchased and installed as part of a turnkey package; therefore, no SCR component costs could be determined directly.<sup>8</sup> However, First Chemical provided an estimate of the capital costs of the SCR system. The capital costs (reported in October 1989 dollars) were escalated to January 1991 dollars using the CE Plant Cost Index and are as follows:<sup>8</sup>

| Description                    | Cost, \$1,000 |
|--------------------------------|---------------|
| Catalytic vessel and catalyst  | 500           |
| Pumps, piping, electrical      | 8             |
| Instrumentation                | 15            |
| Installation                   | 25            |
| Total capital investment (TCI) | 548           |

First Chemical was contacted to determine the type of SCR catalyst in use. Although the catalytic material was not known, the catalyst substrate was reported to be a pellet type.<sup>9</sup>

#### 6.1.3.2 Annual Costs. Table 6-7

**TABLE 6-7. ANNUAL COST SUMMARY FOR NITRIC ACID PLANTS  
USING SELECTIVE CATALYTIC REDUCTION FOR  
NO<sub>x</sub> CONTROL  
(Costs, \$1,000)<sup>a</sup>  
(January 1991 Dollars)**

| Description  | Plant size, metric tons/d (tons/d) |            |             |
|--|------------------------------------|------------|-------------|
|  | 181 (200)                          | 454 (500)  | 907 (1,000) |
| <b>A. Direct Operating Costs</b>   |                                    |            |             |
| 1. Anhydrous ammonia   | 100                                | 325        | 550         |
| 2. Maintenance and supplies (4% of TCI)                                  | 13                                 | 16         | 22          |
| 3. Catalyst replacement (CRF [5 yr, 10%] x catalyst cost)                | 11.9                               | 26.4       | 50.1        |
| <b>B. Indirect Operating Costs</b>                                       |                                    |            |             |
| 1. Overhead Plant (60% of A2)  | 7.8                                | 9.6        | 13.2        |
| 2. Administration (2% of TCI)  | 6.3                                | 8.2        | 11.1        |
| 3. Insurance (1% of TCI)   | 3.1                                | 4.1        | 5.5         |
| 4. Property taxes (1% of TCI)  | 3.1                                | 4.1        | 5.5         |
| 5. Capital recovery {CFR (10 yr, 10%) x [TCI - (1.08 x cat. cap. cost)]} | 43.2                               | 49         | 56.6        |
| <b>Total annual cost (TAC)</b>   | <b>188</b>                         | <b>442</b> | <b>714</b>  |

<sup>a</sup>Based on cost estimates provided by SCR vendor.

shows the annual costs for an SCR system estimated for the three model plant sizes based on cost estimates provided by Engelhard. The cost factors and estimating procedure are based on guidelines for annual costs of catalytic incinerators from the OAOPS Control Cost Manual.<sup>1</sup> Annual anhydrous ammonia costs ranged from \$100,000 to \$550,000 depending on the plant size. Using aqueous ammonia will reduce the per-tank cost, but the annual cost will increase due to the required increase in ammonia consumption.<sup>6</sup> Capital recovery cost is based on the average total capital investment for each model plant size. Total annual costs based on estimates from the catalyst manufacturer range from \$188,000 for the 181 kg per metric ton per day (200 ton/d) plant to \$714,000 for the 907 kg per metric ton per day (1,000 ton/d) plant.

Annual costs for an SCR system were also estimated based on information obtained from First Chemical Corporation. The annual costs for SCR used in a 250 ton/d nitric acid plant are as follows:<sup>8</sup>

| Description   | Cost,<br>\$1,000 |
|---|------------------|
| A. Direct operating costs   |                  |
| 1. Anhydrous ammonia  | 44.7             |
| 2. Maintenance and supplies (4 percent of TCI)                                  | 22               |
| 3. Catalyst replacement [CRF (5 yr, 10 percent) x catalyst cost]                | 73.9             |
| B. Indirect operating costs   |                  |
| 1. Overhead plant (60 percent of A2)  | 13.2             |
| 2. Administrative (2 percent of TCI)  | 11               |
| 3. Insurance (1 percent of TCI)   | 5.5              |
| 4. Property taxes (1 percent of TCI)  | 5.5              |
| 5. Capital recovery {CFR (10 yr, 10 percent) x [TCI - (1.08 x cat. cap. cost)]} | 76.2             |
| Total annual cost (TAC)   | 252              |

Annual ammonia cost was estimated based on a pure ammonia injection rate of 9 scfm and a unit cost of \$400 per ton of anhydrous ammonia. The unit cost of ammonia is an average of costs that were obtained from three sources.<sup>10,11,12</sup> The catalyst cost was estimated to be 56 percent of the combined cost of the catalyst and catalyst vessel. This factor (56 percent) was based on catalyst costs for a similarly sized plant.<sup>6</sup>

The estimated total annual cost of the SCR in operation at First Chemical (250 ton/d) is \$252,000. The estimated total annual cost of the SCR unit for a 200 ton/d plant based on costs supplied by the catalyst vendor is \$188,000. Comparing these two annual costs (relative to respective plant size), it is evident that the vendor-estimated costs are in line with actual annual costs.

**6.1.3.3 Cost Effectiveness.** Table 6-8

**TABLE 6-8. COST EFFECTIVENESS FOR NITRIC ACID PLANTS USING  
SELECTIVE CATALYTIC REDUCTION FOR NO<sub>x</sub> CONTROL  
(January 1991 dollars)**

| Plant size,<br>metric tons/d<br>(tons/d) | Annual cost,<br>\$1,000/yr | NO <sub>x</sub> removed,<br>metric tons/yr<br>(tons/yr) | Cost<br>effectiveness,<br>\$/metric ton NO <sub>x</sub><br>(\$/ton NO <sub>x</sub> ) |
|--|----------------------------|---|--|
| 181 (200)                                | 501 <sup>a</sup>           | 637 (701) <sup>b</sup>                                  | 786 (715)  |
| 454 (500)                                | 1,015 <sup>a</sup>         | 1,600 (1,760) <sup>b</sup>                              | 634 (580)  |
| 907 (1,000)                              | 1,778 <sup>a</sup>         | 3,190 (3,510) <sup>b</sup>                              | 557 (507)  |
| 227 (250)                                | 252 <sup>c</sup>           | 794 (873) <sup>d</sup>                                  | 318 (289)  |

<sup>a</sup>Reference 7.

<sup>b</sup>Based on 86 percent control efficiency.

<sup>c</sup>Reference 8.

<sup>d</sup>Based on 97.2 percent control efficiency.

shows the cost effectiveness for the three model plants and the actual plant. The cost effectiveness ranges from \$255/metric ton (\$232/ton) of NO<sub>x</sub> removed in a 907 metric tons/d (1,000 tons/d) plant to \$336/metric ton (\$305/ton) of NO<sub>x</sub> removed in a 181 metric tons/d (200 tons/d) plant. These cost effectiveness estimates are based on cost information supplied by Engelhard (SCR catalyst vendor) and indicate the cost (on a \$/ton-of-NO<sub>x</sub>-removed basis) of reducing NO<sub>x</sub> emissions from an uncontrolled level of 20 lb/ton down to 3.0 lb/ton.<sup>6</sup> This reduction represents an 86 percent NO<sub>x</sub> control efficiency.

Cost effectiveness based on information obtained from a 250 tons/d nitric acid plant using SCR (First Chemical) is estimated to be \$318/metric ton (\$289/ton) of NO<sub>x</sub> removed. This cost effectiveness is based on a 97.2 percent reduction efficiency.<sup>8</sup>

## **6.2 COSTS OF CONTROL TECHNIQUES USED IN ADIPIC ACID PLANTS**

This section presents costs for NO<sub>x</sub> control systems used in adipic acid plants. Two NO<sub>x</sub> control systems are analyzed: (1) extended absorption and (2) thermal reduction. Cost information was requested from all three adipic acid plants that use these controls. However, detailed cost data were not provided. Available capital and annual costs and cost effectiveness for extended adsorption and thermal reduction are presented in Sections 6.2.1 and 6.2.2, respectively.

### **6.2.1 Extended Absorption**

This section presents the costs associated with using extended absorption to control NO<sub>x</sub> emissions from adipic acid plants. Capital costs are presented in Section 6.2.1.1; annual costs are presented in Section 6.2.1.2; and Section 6.2.1.3 presents cost effectiveness for extended absorption.

**6.2.1.1 Capital Costs.** The capital costs for extended absorption are based on cost data obtained from the single plant that uses this control technique. Plant A reported a total capital investment of \$2.5 million (1986 dollars) for its single-tower extended absorption system.<sup>13</sup> No details on the components of the capital costs were provided by Plant A. This type of



system is described in detail in Chapter 5. In this case, the extended absorber was installed as a retrofit control device. The capital cost of this extended absorption system is \$2.83 million.<sup>13</sup>

**6.2.1.2 Annual Costs.** Table 6-9

**TABLE 6-9. ANNUAL COSTS FOR AN ADIPIC ACID PLANT USING EXTENDED ABSORPTION FOR NO<sub>x</sub> CONTROL  
(January 1991 dollars)  
Plant A (190,000 tons/yr)**

| Description   | Cost, \$1,000 |
|---|---------------|
| A. Direct operating costs <sup>a</sup><br>Utilities and maintenance | 25            |
| B. Indirect operating costs   |               |
| 1. Overhead   |               |
| a. Plant--50% of maintenance  | 6.25          |
| 2. Fixed costs  |               |
| a. Capital recovery (13.5 percent x capital cost)                   | 382           |
| b. Insurance, taxes, and G&A (4% x capital cost)                    | 113           |
| C. Subtotal   | 526           |
| D. Credit for recovered acid <sup>b</sup>                           | (101)         |
| E. Net annualized cost  | 425           |

<sup>a</sup>Based on reported annual cost of \$25,000 for maintenance and utilities.

<sup>b</sup>Based on the following:

1. Estimated production of 300 tons/d of 20 percent nitric acid;
2. 1.6 percent increase in nitric acid recovery;
3. Market price of \$175/ton of 60 percent nitric acid; and
4. Operating 359 d/yr.

presents the estimated annual costs for an extended absorption system used for NO<sub>x</sub> control in an adipic acid plant. The procedure used to estimate the annual costs closely follows the annual cost estimating procedure used for extended absorption systems in nitric acid plants. An operating cost of \$25,000, reported by Plant A, includes maintenance and utilities. Operating labor costs, usually included in the direct operating costs, were reported to be "minimal" by Plant A.<sup>13</sup> Therefore, operating labor cost was assumed to be zero. The credit for recovered nitric acid was determined by estimating the quantity of nitric acid recovered based on flow rates from a larger plant. Following the acid recovery credit procedure for nitric acid plants:<sup>2</sup>

1. Nitric acid recovery increases by 1.6 percent; and

2. The nitric acid recovered has a value of \$175 per ton.<sup>3</sup>

The price of nitric acid (\$175/ton) is for acid with a 60 percent concentration. Nitric acid recovered in the adipic acid production process has a concentration of only 20 percent. Consequently, the price used to calculate the acid recovery credit is one-third of the quoted material price, or approximately \$58 per ton of nitric acid recovered.

The estimated annual cost for extended absorption, before the acid recovery credit, is \$526,000. Including the credit for recovered nitric acid (\$101,000), the net annual cost for extended absorption used for NO<sub>x</sub> control in a 173,000 metric ton/yr (190,000 ton/yr) adipic acid plant is \$425,000.

**6.2.1.3 Cost Effectiveness.** The cost effectiveness of extended absorption was calculated by dividing the annual cost by the quantity of NO<sub>x</sub> removed. The data are as follows:

| Plant size,<br>metric tons/d<br>(tons/d) | Annual cost,<br>\$1,000/yr | NO <sub>x</sub> removed,<br>metric tons/yr<br>(tons/yr) | Cost<br>effectiveness,<br>\$/metric ton NO <sub>x</sub><br>(\$/ton NO <sub>x</sub> ) |
|--|----------------------------|---|--|
| 173,000                                  | 425                        | 3,940   | 108  |
| (190,000)                                |                            | (4,330)   | (98)   |

The NO<sub>x</sub> reduction presented above was calculated based on an uncontrolled NO<sub>x</sub> emission factor of 26.5 kg/metric ton (53 lb/ton) and a controlled NO<sub>x</sub> emission factor of 3.7 kg/metric ton (7.4 lb/ton). It should be noted that cost effectiveness is highly sensitive to the quality and quantity of nitric acid recovered as well as fluctuation in market price.

#### **6.2.2 Thermal Reduction**

This section presents the costs associated with using thermal reduction to control NO<sub>x</sub> emissions from adipic acid plants. Sections 6.2.2.1 and 6.2.2.2 present the capital and annual costs, respectively. Cost effectiveness is presented in Section 6.2.2.3.

**6.2.2.1 Capital Costs.** Capital costs are based on reported cost data from the two adipic acid plants using thermal reduction for NO<sub>x</sub> control. Plant B reported the current (1991) total replacement cost of its thermal reduction system, which consists of four boilers.<sup>14</sup> Plant C reported the cost of their thermal reduction system, a furnace, in 1990 dollars.<sup>15</sup> The cost for Plant C was escalated to January 1991 dollars using the CE Plant Cost Index. The capital costs of the respective thermal reduction units for Plants B and C are as follows:

| Plant | Production capacity,<br>tons/yr | Capital cost, \$10 <sup>6</sup><br>(January 1991 dollars) |
|-------|---------------------------------|---|
| B     | 350,000                         | 8.00  |
| C     | 300,000                         | 7.05  |

6.2.2.2 Annual Costs. Table 6-10

**TABLE 6-10. ANNUAL COSTS FOR ADIPIC ACID PLANTS USING THERMAL REDUCTION FOR NO<sub>x</sub> CONTROL<sup>a</sup>  
(January 1991 dollars)**

| Description  | Costs, \$1,000               |                              |
|--|------------------------------|------------------------------|
|  | Plant B<br>(350,000 tons/yr) | Plant C<br>(300,000 tons/yr) |
| <b>A. Direct operating costs</b>                         |                              |                              |
| 1. Operating labor                                       |                              |                              |
| a. Operator (\$13.6/man-hr)(0.5 hr/shift) <sup>b</sup>   | 7.45                         | 7.45                         |
| b. Supervisor (15% of operator)                          | 1.12                         | 1.12                         |
| 2. Maintenance   |                              |                              |
| a. Labor (\$15/man-hr)(0.5 hr/shift) <sup>b</sup>        | 8.21                         | 8.21                         |
| b. Material (100% of maintenance labor)                  | 8.21                         | 8.21                         |
| 3. Utilities   |                              |                              |
| Natural gas  | 2,050                        | 1,760 <sup>c</sup>           |
| <b>B. Indirect operating costs</b>                       |                              |                              |
| 1. Overhead (60% of A1 + A1)                             | 15                           | 15                           |
| 2. Administrative [2% of total capital investment (TCI)] | 160                          | 141                          |
| 3. Insurance (1% of TCI)                                 | 80                           | 70.5                         |
| 4. Property taxes (1% of TCI)                            | 80                           | 70.5                         |
| 5. Capital recovery [CRF (10 yr, 10%) x TCI]             | 1,300                        | 1,150                        |
| <b>Total annual cost (rounded)</b>                       | <b>3,720</b>                 | <b>3,240</b>                 |

<sup>a</sup>Costs calculated using reported cost data in conjunction with QAQPS Control Cost Manual format.

<sup>b</sup>Based on operating time of 24 hr/d; 365 d/yr.

<sup>c</sup>Natural gas consumption scaled from Plant B consumption based on plant capacities for Plants B and C.

shows the annual costs for a thermal reduction system estimated for Plants B and C. The cost factors and estimates are based on guidelines for annual costs of thermal incinerators from the OAOPS Control Cost Manual.<sup>16</sup> Plant B reported an annual cost of \$2.05 million for natural gas based on a natural gas price of \$2.09 per thousand standard cubic feet of gas.<sup>14</sup> Natural gas consumption for Plant C was estimated using the consumption rate reported by Plant B and scaling that rate for Plant C based on the production capacities of each plant. Annual costs for Plant C were subsequently estimated using the estimated natural gas consumption rate. Total annual costs for Plants B and C are estimated to be \$3.72 and \$3.24 million per year, respectively.

Thermal reduction units generate heat through combustion. Heat from these units is usually recovered as steam for use elsewhere at the facility. The thermal reduction unit at Plant C produces 50,000 lb/hr of steam.<sup>15</sup> It should be noted that the annual costs estimated in Table 6-10 do not include a credit for the recovered heat. No data are available to determine the amount of such a heat recovery credit, although total plant annual cost would be reduced.

**6.2.2.3 Cost Effectiveness.** Table 6-11

**TABLE 6-11. COST EFFECTIVENESS FOR ADIPIC ACID PLANTS USING  
THERMAL REDUCTION FOR NO<sub>x</sub> CONTROL  
(January 1991 dollars)**

| Plant size,<br>metric tons/d<br>(tons/d) | Annual cost,<br>\$1,000/yr | NO <sub>x</sub> removed,<br>metric tons/yr<br>(tons/yr) | Cost<br>effectiveness,<br>\$/metric ton NO <sub>x</sub><br>(\$/ton NO <sub>x</sub> ) |
|--|----------------------------|---|--|
| 273,000<br>(300,000)                     | 3,240                      | 6,370 (7,010)   | 509 (462)  |
| 318,000<br>(350,000)                     | 3,720                      | 7,430 (8,170)   | 501 (455)  |

<sup>a</sup>Based on reduction NO<sub>x</sub> emission from 53 lb/ton (uncontrolled emission factor) to 6.3 lb/ton (average controlled emission factor).



shows the cost presents the cost effectiveness for thermal reduction units used at two adipic acid plants. The cost effectiveness for the two plants is \$509/metric ton (\$462/ton) of NO<sub>x</sub> removed for the 300,000 ton/yr plant and \$501/metric ton (\$455/ton) of NO<sub>x</sub> removed for the 350,000 ton/yr plant. These cost effectiveness figures are based on an uncontrolled NO<sub>x</sub> emission factor of 26.5 kg/metric ton (53 lb/ton) to a controlled NO<sub>x</sub> emission factor of 3.2 kg/metric ton (6.3 lb/ton). Comparing the cost effectiveness for thermal reduction with that for extended absorption (\$108/metric ton [\$98/ton]), it is clear that thermal reduction reduces NO<sub>x</sub> emissions at a much higher cost. The higher cost of NO<sub>x</sub> removal for thermal reduction can be partly attributed to the cost of the fuel. However, credit for heat recovery would improve the cost effectiveness of thermal reduction.

### 6.3 REFERENCES

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14. Letter from Plant B to Neuffer, B., U. S. Environmental Protection Agency, Industrial Studies Branch. June 18, 1991. NO<sub>x</sub> control at adipic acid Plant B.
15. Telecon. Neuffer, B., U. S. Environmental Protection Agency, Industrial Studies Branch, with Plant C. April 10, 1991. NO<sub>x</sub> control at adipic acid Plant C.
16. Reference 1, Chapter 3: pp. 51-58.

## **7.0 ENVIRONMENTAL AND ENERGY IMPACTS**

This chapter presents the environmental and energy impacts of control techniques (described in Chapter 5.0) used to control NO<sub>x</sub> emissions from nitric and adipic acid manufacturing plants. The impacts of these control techniques on air pollution, solid waste disposal, water pollution, and energy consumption are discussed. Section 7.1 discusses impacts for nitric acid manufacturing plants; Section 7.2 discusses impacts for adipic acid manufacturing plants; and Section 7.3 presents references used in this chapter.

### **7.1 NITRIC ACID MANUFACTURING**

The control techniques used to reduce NO<sub>x</sub> emissions from nitric acid manufacturing plants include extended absorption, NSCR, and SCR. Section 7.1.1 presents air pollution impacts; Section 7.1.2 presents solid waste disposal impacts; and Section 7.1.3 presents energy consumption impacts for each of these control techniques. Wastewater impacts are not discussed because liquid effluent waste is not generated by any of the control techniques.

#### **7.1.1 Air Pollution**

**7.1.1.1 NO<sub>x</sub> Emissions.** Estimates of NO<sub>x</sub> emission reductions achievable through the application of extended absorption, NSCR, and SCR for the three model plants were presented in Chapter 6 and are shown in Table 7-1

**TABLE 7-1. NO<sub>x</sub> EMISSIONS FROM NITRIC ACID MANUFACTURING PLANTS**

| Plant size,<br>tons/d |                       | Uncontrolled NO <sub>x</sub><br>emissions, tons/yr | Controlled NO <sub>x</sub> emissions, tons/yr |       |       |
|-----------------------|-----------------------|--|---|-------|-------|
|                       |                       |  | Extended<br>absorption                        | NCSR  | SCR   |
| 200                   | Emissions             | 718  |   | 39    | 17    |
|                       | Emission<br>reduction |  |   | 679   | 701   |
|                       | % reduction           |  |   | 94.6  | 97.7  |
| 500                   | Emissions             | 1,800  |   | 100   | 40    |
|                       | Emission<br>reduction |  |   | 1,700 | 1,760 |
|                       | % reduction           |  |   | 94.6  | 97.7  |
| 1,000                 | Emissions             | 3,590  | 190   | 80    |       |
|                       | Emission<br>reduction |  | 3,400   | 3,510 |       |
|                       | % reduction           |  | 94.6  | 97.7  |       |
| 250                   | Emissions             |  |   |       | 25    |
|                       | Emission<br>reduction |  |   |       | 873   |
|                       | % reduction           |  |   |       | 97.2  |

Note: SCR information based on data provided by First Chemical Corporation.

. For each of the three model plants, the uncontrolled level and controlled NO<sub>x</sub> emissions, emission reduction, and percent reduction are presented.

For this analysis, the amount of NO<sub>x</sub> removed represents a reduction from an uncontrolled level of 10 kg/metric ton (kg/ton) (20 lb/ton), which is equivalent to a NO<sub>x</sub> concentration of 1,500 ppm (typical for modern pressure plants), to a controlled level based on average control efficiencies (shown in Table 5-5) achievable with each of the three control technologies. Nitrogen oxide emissions are reduced from the uncontrolled level by 94.6 percent for extended absorption, by 97.7 percent for NSCR, and by 70.8 percent for SCR. The data on NO<sub>x</sub> emissions from plants with SCR units are from European plants where less stringent standards are imposed. The SCR is used to reduce NO<sub>x</sub> emissions to required levels only.

#### **7.1.1.2 Emissions Trade-Offs.**

7.1.1.2.1 CO and HC emissions from NSCR. Using NSCR to control NO<sub>x</sub> emissions increases HC and CO emissions. Fuel is added in the NSCR unit to react with NO<sub>x</sub> and oxygen to form elemental nitrogen, water, and carbon dioxide. Fuel must be added in excess of stoichiometry to ensure completion of the NO<sub>x</sub> reduction reactions.<sup>1</sup> However, as the ratio of fuel to oxygen increases, HC and CO emissions also increase because of incomplete combustion caused by the fuel-rich conditions in the unit. The quantity of these emissions is site-specific and varies with different plant operating parameters.

7.1.1.2.2 NH<sub>3</sub> emissions from SCR. The SCR process reduces NO<sub>x</sub> emissions by injecting NH<sub>3</sub> into the flue gas to react with NO<sub>x</sub> to form elemental nitrogen and water. The NH<sub>3</sub>/NO<sub>x</sub> ratio affects the NO<sub>x</sub> removal efficiency of this unit. Higher ratios increase amounts of NO<sub>x</sub> removed but also increase the probability of unreacted ammonia's passing through the catalyst unit into the atmosphere (known as "ammonia slip"). Figure 5-5 illustrates NO<sub>x</sub> removal efficiency and NH<sub>3</sub> slip as a function of NH<sub>3</sub>/NO<sub>x</sub> mole ratio. Gas residence time in the catalyst unit can also have an impact on the amount of NH<sub>3</sub> slip. As the residence time of the

flue gas within the unit decreases,  $\text{NO}_x$  removal efficiency also decreases, thereby increasing the amount of unreacted  $\text{NH}_3$ . Figure 5-6 illustrates  $\text{NO}_x$  removal efficiency and  $\text{NH}_3$  slip as a function of area velocity.

#### **7.1.2 Solid Waste Disposal**

Catalytic materials used in reduction units typically have a 3- to 8-year life expectancy for NSCR units and a 5- to 10-year life expectancy for SCR units.<sup>2,3</sup> When the catalyst no longer functions as designed, the catalyst materials will need to be disposed of.

The catalyst materials predominantly used in NSCR are platinum and mixtures of platinum and rhodium. Base metal oxides (e.g., titania/vanadia), precious metal oxides (e.g., platinum/rhodium, palladium), and zeolites can be used as catalyst materials in SCR units. Titania/vandia is the catalyst material most commonly used at nitric acid manufacturing plants with SCR.<sup>4</sup> This material is considered hazardous and therefore must be treated and disposed of as such. Disposal problems are not encountered with the other materials because they are not identified as hazardous wastes.

#### **7.1.3 Energy Consumption**

Additional electrical energy is required over the uncontrolled level for extended absorption and SCR, while additional fuel energy is required for NSCR. These energy impacts are described below.

Extended absorption requires additional electrical energy to operate the pumps used to maintain the absorber inlet gas pressure at the required level of at least 730 kPa. For both single- and double-tower extended absorption systems, additional electrical energy is also required to operate a closed-loop refrigeration system used to cool water in the "extended" portion of the tower. The extent of the increase in electricity usage is specific to each nitric acid manufacturing plant. This increase in electricity usage is presented in Table 7-2

**TABLE 7-2. ANNUAL ELECTRICITY REQUIREMENTS FOR EXTENDED  
ABSORPTION AND ANNUAL FUEL REQUIREMENTS FOR NSCR**

| Model plant size,<br>metric tons/d<br>(tons/d) | Extended absorption<br>electricity usage |               | NSCR net fuel<br>requirements |                  |
|--|--|---------------|-------------------------------|------------------|
|  | $10^6$ MJ/yr                             | $10^6$ kwh/yr | $10^6$<br>MJ/yr               | $10^6$<br>Btu/yr |
| 181 (200)                                      | 4.3                                      | 1.2           | 55.3                          | 52,500           |
| 454 (500)                                      | 10.9                                     | 3.02          | 140                           | 132,500          |
| 907 (1,000)                                    | 23.4                                     | 6.5           | 277                           | 262,500          |

for each of the three model plants.<sup>2</sup>

For SCR systems, additional electrical energy is required to operate ammonia pumps and ventilation fans. This energy requirement is believed to be minimal and therefore was not included in this analysis.

The NSCR process requires additional fuel energy but at the same time generates a significant amount of heat, which can be recovered in a waste heat boiler and a tail gas expander. This recovered heat can supply the energy for process compression needs with additional steam available for export.<sup>5</sup> The amount of energy recovered in this process lessens the impact of the additional fuel requirements by reducing the effective fuel use. The additional energy requirements and the energy recovery options are site-specific to each nitric acid manufacturing plant. As discussed in Section 6.1.2.2, the net fuel requirements for each of the three model plants are presented in Table 7-2.<sup>2</sup>

## **7.2 ADIPIC ACID MANUFACTURING**

The control techniques used to reduce NO<sub>x</sub> emissions from adipic acid manufacturing plants include extended absorption and thermal reduction. Section 7.2.1 presents air pollution impacts and Section 7.2.2 presents energy consumption impacts for each of these control techniques. Solid waste disposal and wastewater impacts are not discussed because these wastes are not generated by either of the control techniques.

### **7.2.1 Air Pollution**

**7.2.1.1 NO<sub>x</sub> Emissions.** Estimates of NO<sub>x</sub> emission reductions achievable through applying extended absorption (Plant A) and thermal reduction (Plants B and C) are presented in Table 7-3



**TABLE 7-3. NO<sub>x</sub> EMISSIONS FROM ADIPIC ACID MANUFACTURING PLANTS**

| Plant size, tons/yr |   | Uncontrolled NO <sub>x</sub> emissions, tons/yr | Controlled NO <sub>x</sub> emissions, tons/yr |                        |
|---------------------|---|---|---|------------------------|
|                     |   |   | Extended absorption                           | Thermal reduction      |
| A. 190,000          | Emissions<br>Emissions reduction<br>% reduction | 5,040   | 703<br>4,340<br>86.1                          | --                     |
| B. 350,000          | Emissions<br>Emissions reduction<br>% reduction | 9,280   | --  | 1,720<br>7,560<br>81.5 |
| C. 300,000          | Emissions<br>Emissions reduction<br>% reduction | 7,950   | --  | 1,470<br>6,480<br>81.5 |

. For each plant, the uncontrolled and controlled emissions, emission reduction, and percent reduction are presented.

Uncontrolled NO<sub>x</sub> emissions are based on an emission factor of 26.5 kg/metric ton (53 lb/ton) of adipic acid produced. This is a typical level for uncontrolled adipic acid manufacturing plants. Controlled NO<sub>x</sub> emissions are based on an emission factor of 3.7 kg/metric ton (7.4 lb/ton) of adipic acid produced for plants using extended absorption (Plant A) and on 3.2 kg/metric ton (6.3 lb/ton) of adipic acid produced for plants using thermal reduction (Plants B and C). Nitrogen oxide emissions from adipic acid manufacturing plants are reduced by 86.1 percent using extended absorption and by 81.5 percent using thermal reduction.

#### **7.2.1.2 CO and HC Emissions From Thermal Reduction.**

Depending on combustion conditions in the thermal reduction unit, this method of controlling NO<sub>x</sub> emissions may produce CO and HC emissions. Fuel is added in the thermal reduction unit to react with oxygen and NO<sub>x</sub> (in the absorber tail gas) to produce elemental nitrogen, carbon dioxide and water. Adding fuel in excess of stoichiometric amounts will ensure complete NO<sub>x</sub> reduction reactions. However, this excess fuel in the thermal reduction unit can result in incomplete combustion and, consequently, CO and HC emissions. Data are not available to quantify the amount of increased CO and HC emissions for the three plants discussed in Section 7.2.1.1.

#### **7.2.2 Energy Consumption**

Additional electrical energy is required over the uncontrolled level for extended absorption, while additional fuel energy is required for thermal reduction.

Extended absorption requires additional electrical energy to operate the pumps used to maintain the absorber inlet gas pressure at a required level. The extent of this increase in electricity usage is specific to each individual plant. These requirements are not known for the plant discussed in previous sections.

The thermal reduction process requires additional fuel energy over the uncontrolled level but at the same time generates

a significant amount of heat, which can be recovered. Two adipic acid manufacturing plants (Plants B and C) that utilize thermal reduction for NO<sub>x</sub> control produce steam with the heat generated from the control system.<sup>6,7</sup> Plant C (300,000 tons/yr) produces approximately 50,000 lb/hr of steam from the thermal reduction unit.<sup>7</sup> Plant B (350,000 tons/yr) consumes approximately 983 MMft<sup>3</sup>/yr of natural gas.<sup>6</sup> Data are not available to quantify the amount of heat recovered at this plant.

### 7.3 REFERENCES

1. Nitric Acid Plant Inspection Guide. U. S. Environmental Protection Agency. Research Triangle Park, N.C. Publication No. EPA-340/1-84-013. August 1984. pp. 25-55.
2. Review of New Source Performance Standards for Nitric Acid Plants. U. S. Environmental Protection Agency. Research Triangle Park, N.C. Publication No. EPA-450/8-84-011. April 1984. Ch. 6.
3. Iskandar, R.S. NO<sub>x</sub> Removal by Selective Catalytic Reduction, "SCR." Cormetech, Inc. California Clean Air and New Technologies Conference. October 15-17, 1990. 12 pp.
4. Telecon. Shoraka, S., MRI, with Durila, M., Engelhard. July 12, 1991. Discussion of SCR materials used in nitric acid manufacturing plants.
5. Ohsol, E.O. Nitric Acid. In: Encyclopedia of Chemical Processing and Design, J. J. McKetta and W. A. Cunningham (eds.). New York, Marcel Dekker, Inc. 1990. pp. 150-155.
6. Letter from Plant B to Neuffer, B., U. S. Environmental Protection Agency, ISB. June 18, 1991. NO<sub>x</sub> control at adipic acid manufacturing Plant B.
7. Telecon. Neuffer, B., EPA/ISB, with Plant C. April 10, 1991. NO<sub>x</sub> control at adipic acid manufacturing Plant C.

## **Exhibit 3**

(b) *Regulated Area*. All waters on the Pamlico and Tar Rivers within a 300 yard radius of the launch site on land at position latitude 35°32'25" N, longitude 077°03'42" W. All geographic coordinates are North American Datum 1983 (NAD 83).

(c) *Regulations*. The general safety zone regulations contained in 33 CFR 165.23 of this part apply to the area described in paragraph (b) of this section.

(1) Persons or vessels requiring entry into or passage through any portion of the safety zone must first request authorization from the Captain of the Port, or a designated representative, unless the Captain of the Port previously announced via Marine Safety Radio Broadcast on VHF Marine Band Radio channel 22 (157.1 MHz) that this regulation will not be enforced in that portion of the safety zone. The Captain of the Port can be contacted at telephone number (910) 343-3882 or by radio on VHF Marine Band Radio, channels 13 and 16.

(d) *Enforcement*. The U.S. Coast Guard may be assisted in the patrol and enforcement of the zone by Federal, State, and local agencies.

(e) *Enforcement period*. This section will be enforced from 8 p.m. to 10 p.m. on September 22, 2012 unless cancelled earlier by the Captain of the Port.

Dated: July 30, 2012.

**A. Popiel,**

*Captain, U.S. Coast Guard, Captain of the Port North Carolina.*

[FR Doc. 2012-19841 Filed 8-13-12; 8:45 am]

**BILLING CODE 9110-04-P**

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2010-0750; FRL-9667-3]

RIN 2060-AQ10

### New Source Performance Standards Review for Nitric Acid Plants

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The EPA is finalizing the new source performance standards (NSPS) for nitric acid plants. Nitric acid plants

include one or more nitric acid production units (NAPUs). These revisions include a change to the nitrogen oxides (NOx) emission limit, which applies to each NAPU commencing construction, modification, or reconstruction after October 14, 2011. These revisions also include additional testing and monitoring requirements.

**DATES:** This final rule is effective on August 14, 2012. The incorporation by reference of certain publications listed in this rule is approved by the Director of the Federal Register as of August 14, 2012.

**ADDRESSES:** *Docket:* The docket for this action is identified by Docket ID No. EPA-HQ-OAR-2010-0750. All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. Although listed in the index, some information is not publicly available (e.g., CBI or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through [www.regulations.gov](http://www.regulations.gov) or in hard copy at the EPA Docket Center, Public Reading Room, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For questions about these standards for nitric acid plants, contact Mr. Nathan Topham, Sector Policies and Program Division, Office of Air Quality Planning and Standards (D243-02), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-0483; fax number (919) 541-3207, email address: [topham.nathan@epa.gov](mailto:topham.nathan@epa.gov).

**SUPPLEMENTARY INFORMATION:** The information presented in this preamble is organized as follows:

- I. General Information
  - A. Does this action apply to me?
  - B. Where can I get a copy of this document?
  - C. Judicial Review
- II. Background Information

- A. What is the statutory authority for this final NSPS?
- B. History of the NSPS for Nitric Acid Plants
- III. Summary of the Final NSPS
  - A. What source category is being regulated?
  - B. What pollutants are emitted from these sources?
  - C. What are the final requirements for new nitric acid production units?
- IV. Summary of Significant Changes Since Proposal
  - A. How is the EPA revising the proposed emissions limit for affected facilities?
  - B. How is the EPA revising the testing and monitoring requirements that were proposed for Subpart Ga of Part 60?
  - C. How is the EPA revising the notification, reporting, and recordkeeping requirements that were proposed for Subpart Ga?
- V. Summary of Significant Comments and Responses to the Proposed NSPS
- VI. Summary of Cost, Environmental, Energy, and Economic Impacts of These Standards
  - A. What are the impacts for Nitric Acid Production Units?
  - B. What are the secondary impacts for Nitric Acid Production Units?
  - C. What are the economic impacts for Nitric Acid Production Units?
- VII. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act
  - C. Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act (RFA) of 1996 (SBREFA), 5 U.S.C. 601 et seq.
  - D. Unfunded Mandates Reform Act of 1995
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks
  - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act
  - J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
  - K. Congressional Review Act

### I. General Information

*A. Does this action apply to me?*

Categories and entities potentially regulated by these revisions include:

| Category                            | NAICS code <sup>1</sup> | Examples of regulated entities        |
|-------------------------------------|-------------------------|---------------------------------------|
| Industry .....                      | 325311                  | Nitrogenous Fertilizer Manufacturing. |
| Federal government .....            | .....                   | Not affected.                         |
| State/local/tribal government ..... | .....                   | Not affected.                         |

<sup>1</sup> North American Industrial Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility would be regulated by this action, you should examine the applicability criteria in 40 CFR 60.70a. If you have any questions regarding the applicability of this final action to a particular entity, contact the person in the preceding **FOR FURTHER INFORMATION CONTACT** section.

*B. Where can I get a copy of this document?*

In addition to being available in the docket, an electronic copy of the final action is available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN) Web site. Following signature, EPA posted a copy of the final action on the TTN Web site's policy and guidance page for newly proposed or promulgated rules at [www.epa.gov/ttn/oarpg](http://www.epa.gov/ttn/oarpg). The TTN Web site provides information and technology exchange in various areas of air pollution control.

*C. Judicial Review*

Under CAA section 307(b)(1), judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by October 15, 2012.

Under CAA section 307(d)(7)(B), only an objection to this final rule that was raised with reasonable specificity during the period for public comment (including any public hearing) can be raised during judicial review. This section also provides a mechanism for the EPA to convene a proceeding for reconsideration, "[i]f the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule[.]" Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, Environmental Protection Agency, Room 3000, Ariel Rios Building, 1200 Pennsylvania Ave. NW., Washington, DC 20004, with a copy to the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20004. Note, under CAA section

307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

**II. Background Information**

*A. What is the statutory authority for this final NSPS?*

New source performance standards (NSPS) implement Clean Air Act (CAA) section 111(b), and are issued for categories of sources which cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. Section 111 of the CAA requires that NSPS reflect the application of the best system of emission reductions which (taking into consideration the cost of achieving such emission reductions, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

This level of control has sometimes been referred to as "best demonstrated technology" or BDT. In order to better reflect that, CAA section 111 was amended in 1990 to clarify that "best systems" may or may not be "technology," the EPA is now using the term "best system of emission reduction" or BSER. In assessing whether a standard is achievable, EPA must account for routine operating variability associated with performance of the system on whose performance the standard is based. See *National Lime Ass'n v. EPA*, 627 F. 2d 416, 431–33 (DC Cir. 1980).

Common sources of information as to what constitutes a BSER, and for assessing that technology's level of performance, include test data collected during development of proposed rules, best available control technology (BACT) determinations made as part of new source review (NSR), emissions limits that exist in state and federal permits for recently permitted sources, and emissions test data for demonstrated control technologies collected for compliance demonstration or other purposes. EPA compares permit limitations and BACT determination data with actual performance test data to identify any site-specific factors that could influence general applicability of this information. Also, as part of this review we evaluate if NO<sub>x</sub> emissions limits more stringent than those in Subpart G have been established, or if emissions limits have been developed for additional air pollutants.

New source performance standards implement CAA section 111(b), and are issued for categories of sources which

cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. The primary purpose of the NSPS is to attain and maintain ambient air quality by ensuring that the best demonstrated emission control technologies are installed as the industrial infrastructure is modernized, when it is most cost effective to build in controls. Since 1970, the NSPS have been successful in achieving long-term emissions reductions in numerous industries by assuring that cost-effective controls are installed on new, reconstructed, or modified sources. Section 111(b)(1)(B) of the CAA requires EPA to periodically review and revise the standards of performance, as necessary, to reflect improvements in methods for reducing emissions.

Existing affected NAPUs that are modified or reconstructed would also be subject to these revisions for affected facilities. Under CAA section 111(a)(4), "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Changes to an existing NAPU that do not result in an increase in emissions are not considered modifications.

Rebuilt affected NAPUs would become subject to the standards under the reconstruction provisions, regardless of changes in emission rate. Reconstruction means the replacement of components of an existing NAPU such that (1) the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new NAPU; and (2) it is technologically and economically feasible to meet the applicable standards (40 CFR 60.15).

*B. History of the NSPS for Nitric Acid Plants*

The NSPS for Nitric Acid Plants (40 CFR part 60, Subpart G) were promulgated in the **Federal Register** on December 23, 1971 (36 FR 24881). The first review of the Nitric Acid Plants NSPS was completed on June 19, 1979 (44 FR 35265). An additional review was completed on April 5, 1984 (49 FR 13654). No changes were made to the NSPS as a result of those reviews. Minor testing and monitoring changes were made during three reviews since the original promulgation in 1971 (October 6, 1975 (40 FR 46258), April 22, 1985 (50 FR 15894), and February 14, 1989 (54 FR 6666)). Subpart G applies to each NAPU constructed or modified after

August 17, 1971, and on or before October 14, 2011. Subpart G has an emissions limit of 3.0 lb of NO<sub>x</sub> per ton of 100 percent nitric acid produced (based on any 3-hour average) and a 10 percent opacity standard as an additional method of demonstrating compliance with the NO<sub>x</sub> emission limit. Continuous NO<sub>x</sub> monitors are required as well as recording daily production rates.

### III. Summary of the Final NSPS

#### A. What source category is being regulated?

Today's standards (Subpart Ga) apply to new NAPUs. The affected facility under the final NSPS is each NAPU. Nitric acid plants may include one or more NAPUs. A new NAPU is defined as a NAPU for which construction, modification, or reconstruction commences after October 14, 2011.

For purposes of these final regulations, a NAPU is defined as any facility producing weak nitric acid by either the pressure or atmospheric pressure process. This definition has not changed from Subpart G.

#### B. What pollutants are emitted from these sources?

The pollutant to be regulated under section 111(b) in today's action, for new NAPUs, is NO<sub>x</sub>, which undergoes reactions in the atmosphere to form particulate matter and ozone. Nitrogen oxides, particulate matter, and ozone are all criteria pollutants that are subject to national ambient air quality standards under section 109 of the Clean Air Act, based on their adverse effects to human health and welfare.

These NAPUs also emit another nitrogen compound known as nitrous oxide (N<sub>2</sub>O), which is considered a greenhouse gas (GHG). We are not taking final agency action with respect to a GHG emission standard in this action. The EPA is in the process of gathering and analyzing additional data on GHG emissions from NAPUs that will allow the Agency to continue working towards a proposal for GHG standards for nitric acid plants.

#### C. What are the final requirements for new nitric acid production units?

As proposed, and after consideration of the comments we received, we are reducing the NO<sub>x</sub> emissions limit from 3.0 pounds of NO<sub>x</sub> (expressed as NO<sub>2</sub>) per ton of 100 percent nitric acid produced (lb NO<sub>x</sub>/ton acid) to 0.50 lb NO<sub>x</sub>/ton acid as a 30 operating day emission rate calculated each operating day based on the previous 30 operating days.

The general provisions in 40 CFR part 60 provide that emissions in excess of the level of the applicable emissions limit during periods of startup, shutdown, and malfunction shall not be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. See 40 CFR 60.8(c). The general provisions, however, may be amended for individual subparts. See 40 CFR 60.8(h). In today's action, the EPA is finalizing standards in Subpart Ga that apply at all times, including periods of startup or shutdown, and periods of malfunction.

**Periods of Startup or Shutdown.** Consistent with *Sierra Club v. EPA* (551 F.3d 1019 (DC Cir. 2008)), the EPA has established standards in this rule that apply at all times. In revising the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not established different standards for those periods.

According to information received from industry in the section 114 ICR, NO<sub>x</sub> emissions during startup and shutdown are higher than during normal operations for some nitric acid plants. However, due to the relatively short duration of startup and shutdown events (generally a few hours per month) compared to normal steady-state operations, we conclude that a 30-day emission rate calculated based on 30 operating days will allow affected facilities to meet the 0.50 lb NO<sub>x</sub>/ton acid at all times, including periods of startup and shutdown.

If higher NO<sub>x</sub> emissions during periods of startup and shutdown are a concern, there are two types of equipment that can be used by affected facilities. These include startup heaters and hydrogen peroxide injection. Startup heaters are used to heat the SCR so that it can begin to reduce NO<sub>x</sub> during startups. Hydrogen peroxide injection, which is not applicable in all situations, can also be used to decrease NO<sub>x</sub> emissions in the extended absorption column.

**Periods of Malfunction.** As explained in the preamble to the proposed rule, periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a "sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment or a process to operate in a normal or usual manner \* \* \*" (40 CFR 60.2). As explained in more detail in the proposed rule, EPA has determined that CAA section 111 does not require that emissions that occur during periods of malfunction be factored into

development of CAA section 111 standards.

Further, accounting for malfunctions would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree, and duration of various malfunctions that might occur. As such, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, e.g., *Sierra Club v. EPA*, 167 F. 3d 658, 662 (DC Cir. 1999) ("[T]he EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to 'invest the resources to conduct the perfect study.'"). See also, *Weyerhaeuser v. Costle*, 590 F.2d 1011, 1058 (DC Cir. 1978) ("In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.""). In addition, accounting for malfunctions when setting standards of performance under section 111 which reflect the degree of emission limitation achievable through "the application of the best system of emission reduction" that the EPA determines is adequately demonstrated could lead to standards that are significantly less stringent than levels that are achieved by a well-performing non-malfunctioning source. The EPA's approach to malfunctions is consistent with section 111 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 111 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify violations. The EPA would also consider whether the source's failure to comply with the CAA section 111 standard was, in fact, "sudden, infrequent, not reasonably preventable" and was not instead "caused in part by poor maintenance or

careless operation.” 40 CFR 60.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause a violation of the relevant emission standard. The EPA is therefore finalizing an affirmative defense to civil penalties for violations of emission standards that are caused by malfunctions. See 40 CFR 60.71a (defining “affirmative defense” to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.). We also have finalized other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; the source must prove by a preponderance of the evidence that it has met all of the elements set forth in 60.74a. (See 40 CFR 22.24). The criteria ensure that the affirmative defense is available only where the event that causes a violation of the emission standard meets the narrow definition of malfunction in 40 CFR 60.2 (sudden, infrequent, not reasonable preventable and not caused by poor maintenance and or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that the violation “[w]as caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner \* \* \*.” The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with section 60.72a(b) and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that “[r]epairs were made as expeditiously as possible when a violation occurred \* \* \*” and that “[a]ll possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health \* \* \*.” In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with Section 113 of the Clean Air Act (see also 40 CFR 22.27).

The EPA proposed and is now finalizing an affirmative defense in this rule in an attempt to balance a tension,

inherent in many types of air regulations, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission standards may be violated under circumstances beyond the control of the source. The EPA must establish emission standards that “limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.” 42 U.S.C. § 7602(k) (defining “emission limitation and emission standard”). See generally *Sierra Club v. EPA*, 551 F.3d 1019, 1021 (D.C. Cir. 2008). Thus, the EPA is required to ensure that Section 111 emissions standards are continuous. The affirmative defense for malfunction events meets this requirement by ensuring that even where there is a malfunction, the emission standard is still enforceable through injunctive relief. While “continuous” standards, on the one hand, are required, there is also caselaw indicating that in many situations it is appropriate for the EPA to account for the practical realities of technology. For example, in *Essex Chemical v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973), the D.C. Circuit acknowledged that in setting standards under CAA section 111 “variant provisions” such as provisions allowing for upsets during startup, shutdown and equipment malfunction “appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the ‘never to be exceeded’ standard currently in force.” See also, *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375 (D.C. Cir. 1973). Though intervening caselaw such as *Sierra Club v. EPA* and the CAA 1977 amendments calls into question the relevance of these cases today, they support the EPA’s view that a system that incorporates some level of flexibility is reasonable. The affirmative defense simply provides for a defense to civil penalties for violations that are proven to be beyond the control of the source. By incorporating an affirmative defense, the EPA has formalized its approach to upset events. In a Clean Water Act setting, the Ninth Circuit required this type of formalized approach when regulating “upsets beyond the control of the permit holder.” *Marathon Oil Co. v. EPA*, 564 F.2d 1253, 1272–73 (9th Cir. 1977). See also, *Mont. Sulphur & Chem. Co. v. United States EPA*, 2012 U.S. App. LEXIS 1056 (Jan 19, 2012) (rejecting industry argument that reliance on the affirmative defense was not adequate). But see, *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1057–58 (D.C. Cir. 1978) (holding that an informal approach is

adequate). The affirmative defense provisions give the EPA the flexibility to both ensure that its emission standards are “continuous” as required by 42 U.S.C. 7602(k), and account for unplanned upsets and thus support the reasonableness of the standard as a whole.

#### IV. Summary of Significant Changes Since Proposal

##### A. How is the EPA revising the proposed emissions limit for affected facilities?

For affected facilities constructed, modified, or reconstructed after October 14, 2011, we proposed to reduce the NO<sub>x</sub> emissions limit from 3.0 lb NO<sub>x</sub>/ton acid to 0.50 lb NO<sub>x</sub>/ton acid as a 30-day emission rate calculated each operating day based on the previous 30 consecutive operating days. See 76 FR 63878 (October 14, 2011). For these final standards, we are promulgating the proposed NO<sub>x</sub> emissions limit of 0.50 lb NO<sub>x</sub>/ton acid as a 30 operating day emission rate calculated each operating day based on the previous 30 operating days. In response to commenters’ concerns related to how the 30 day emission rate is calculated, we have revised the equation used to calculate the 30 day emission rate. This revision prevents days with very few operating hours from having an artificially large influence on the calculated 30 day emission rate. See Section V of this preamble, *Statistical Evaluation of CEMS Data to Determine the NO<sub>x</sub> Emission Standard (Updated Memo for Final Standard)*, and the *Response to Comment Document* for more information on calculation of the 30 day emission rates. The two documents mentioned above are available in the docket for this final rule.

The conclusion that selective catalytic reduction (SCR) is BSER has not changed from proposal. The justification includes the following reasons: (1) Based on the data available to the Agency, SCR achieves lower emissions than other control technologies; (2) SCR technology is less expensive and more cost effective than nonselective catalytic reduction (NSCR) for control of NO<sub>x</sub> emissions; and (3) SCR produces minimal secondary environmental impacts. In addition, we note that SCR is the only known NO<sub>x</sub> control technology being installed in new NAPUs and SCR has been determined to be BACT in several recent BACT determinations.

Although the limit of 0.50 lb NO<sub>x</sub>/ton acid is based on the data for SCR, NSPS do not require the use and installation of a specific control device. Whether NSCR can meet the levels achievable by



SCR over a long term was an area of uncertainty at proposal. At proposal, the long term CEMS data from 2 NSCR plants (PCS Geismar Train 4 and Agrium Sacramento) indicated that neither plant was achieving the 0.50 lb NO<sub>x</sub>/ton limit. After proposal, we evaluated continuous NO<sub>x</sub> emission data from Dyno Nobel—St Helens (which uses NSCR) that showed a maximum 30 day emission rate of 0.21 lb NO<sub>x</sub>/ton acid. Also, we had monthly data from JR Simplot (another nitric acid plant with NSCR) that ranged from 0.15 to 0.36 lb NO<sub>x</sub>/ton acid. Although the data from JR Simplot are not directly comparable to continuous NO<sub>x</sub> emission data (hour by hour), there is a strong probability that this source also could comply with 0.50 lb NO<sub>x</sub>/ton acid. Therefore, we conclude the standard of 0.50 lb NO<sub>x</sub>/ton acid limit is achievable for at least some NAPUs using NSCR.

We conclude that new NAPUs will be able to meet the limit taking into consideration routine operating variability as well as variation due to weather and periods of startup and shutdown as the data analyzed included all of these periods. Based on the data available to the agency, the limit is demonstrated in practice and achievable for new, modified, or reconstructed sources. See *Statistical Evaluation of CEMS Data to Determine the NO<sub>x</sub> Emission Standard (Updated Memo for Final Standard)*, for more information.

*B. How is the EPA revising the testing and monitoring requirements that were proposed for Subpart Ga of Part 60?*

We are finalizing the testing and monitoring requirements that were proposed for Subpart Ga and adding the requirement of a dual span monitor for reasons explained in Section V of this preamble.

*C. How is the EPA revising the notification, reporting, and recordkeeping requirements that were proposed for Subpart Ga?*

The reporting and recordkeeping requirements that we proposed are being finalized as separate sections for Subpart Ga. Since proposal, there have been minor changes to the reporting language at § 60.77a(e) in relation to EPA's Central Data Exchange (CDX), detailed below, but no other changes have been made to the electronic reporting requirements.

The EPA must have performance test data to conduct effective reviews of CAA section 111 standards, as well as for many other purposes including compliance determinations, emission factor development, and annual

emission rate determinations. In conducting these required reviews, the EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners and operators, to locate, collect, and submit performance test data because of varied locations for data storage and varied data storage methods. In recent years, though, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

In this action, as a step to increase the ease and efficiency of data submittal and improve data accessibility, EPA is requiring the electronic submittal of select performance test data. Specifically, the EPA is requiring owners and operators of Nitric Acid facilities to submit electronic copies of performance test reports required under Subpart Ga of part 60 to the EPA's WebFIRE database. The WebFIRE database was constructed to store performance test data for use in developing emission factors. A description of the WebFIRE database is available at <http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main>.

As mentioned above, data entry will be through an electronic emissions test report structure called the Electronic Reporting Tool (ERT). The ERT will generate an electronic report which will be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI). The submitted report is submitted through the EPA's Central Data Exchange (CDX) network for storage in the WebFIRE database making submittal of data very straightforward and easy. A description of the ERT can be found at <http://www.epa.gov/ttn/chief/ert/index.html> and CEDRI can be accessed through the CDX Web site ([www.epa.gov/cdx](http://www.epa.gov/cdx)).

The requirement to submit performance test data electronically to the EPA does not create any additional performance testing and would apply only to those performance tests conducted using test methods that are supported by the ERT. The ERT contains a specific electronic data entry form for most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at <http://www.epa.gov/ttn/chief/ert/index.html>. We believe that industry will benefit from this new electronic data submittal requirement. Having these data, the EPA will be able to develop improved emission factors, make fewer information requests, and promulgate

better regulations. The information to be reported is already required for the existing test methods and is necessary to evaluate the conformance to the test method.

One major advantage of submitting performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. Another advantage is that the ERT clearly states what testing information would be required. Another important benefit of submitting these data to the EPA at the time the source test is conducted is that it should substantially reduce the effort involved in data collection activities in the future. When the EPA has performance test data in hand, there will likely be fewer or less substantial data collection requests in conjunction with prospective technology reviews. This results in a reduced burden on both affected facilities (in terms of reduced manpower to respond to data collection requests) and the EPA (in terms of preparing and distributing data collection requests and assessing the results).

State, local, and tribal agencies can also benefit from a more streamlined and accurate review of electronic data submitted to them. The ERT allows for an electronic review process rather than a manual data assessment making review and evaluation of the data and calculations easier and more efficient. Finally, another benefit of submitting data to WebFIRE electronically is that these data will greatly improve the overall quality of the existing and new emission factors by supplementing the pool of emissions test data for establishing emissions factors and by ensuring that the factors are more representative of current industry operational procedures. A common complaint heard from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA will be able to ensure that emission factors, when updated, represent the most current range of operational practices. In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data will save industry, state, local, tribal agencies, and the EPA significant time, money, and effort while improving the quality of emission inventories and, as a result, air quality regulations.

Several changes were made to the recordkeeping and reporting provisions related to the affirmative defense

provisions of the final rule. In addition to minor wording changes to improve clarity, the EPA added language to 60.74a(a)(9) to clarify that the purpose of the root cause analysis is to determine, correct, and eliminate the primary cause of the malfunction. The root cause analysis itself does not necessarily require that the cause be determined, corrected or eliminated. However, in most cases, the EPA believes that a properly conducted root cause analysis will have such results. The EPA also eliminated the 2-day notification requirement in 60.74a because EPA will receive sufficient notification of malfunction events that result in violations in other required compliance reports, such as the reports required under 60.77a. In addition, EPA revised 60.74a(b) to state that “[t]he owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.”

#### **V. Summary of Significant Comments and Responses to the Proposed NSPS**

The EPA received comments on a number of issues during the public comment period. These issues include the level and time period of the NO<sub>x</sub> standard, NO<sub>x</sub> monitoring requirements, issues related to startup and shutdown, and regulation of GHGs from nitric acid plants. Summaries of the major comments and EPA responses are presented in the following paragraphs. Summaries of comments on these and other issues that are not presented in the preamble, as well as the EPA's responses to those comments, can be found in the *Response to Comment Document*. The *Response to Comment Document* is available in the docket for this final rule, EPA-HQ-OAR-2010-0750.

*Comment:* Multiple commenters supported the EPA's decision to tighten the standard for NO<sub>x</sub> emissions. One commenter stated that the revisions to

the standard are warranted given the low emissions achieved by well controlled facilities across the industry, as shown in the ICR data, and the lengthy delay in reviewing the NSPS. The commenter asks that the EPA consider the myriad health effects related to NO<sub>x</sub> emissions when determining the standard for the final rule. The commenter notes that these effects include direct effects from NO<sub>x</sub> exposure as well as effects of secondary pollutants, such as ozone and fine particulate matter, for which NO<sub>x</sub> is a precursor.

One commenter agrees that the EPA has clearly demonstrated that its proposed NO<sub>x</sub> standard of 0.50 lb/ton based on a 30-day rolling emission rate is not only “achievable” and “adequately demonstrated,” it is already routinely being achieved at multiple facilities within the industry. Given the technology-forcing nature of Section 111's BDT standard, the commenter believes that EPA could establish a standard more stringent than its current proposal. Nevertheless, the commenter believes that the proposed emission limit is within the range of what is reasonable for purposes of the NSPS program.

Another commenter stated that the standard should be more stringent than what was proposed based on the fact that some facilities are achieving lower emissions than the proposed limit. The commenter further stated that the EPA failed to justify why a standard more stringent than 0.50 lb/ton was not proposed. The commenter states that the EPA appeared to accommodate current industry practice rather than comply with the “technology forcing” mandate of CAA section 111. One commenter suggested that the EPA should set a tighter limit than the proposed standard because “most control systems installed on future affected facilities would achieve emissions below the proposed emissions limit even in the absence of these proposed revisions.”

*Response:* The EPA disagrees with commenters that the emission limit should be more stringent. The EPA believes that the rationale for proposing the standard of 0.50 lb NO<sub>x</sub>/ton acid was well supported by the emissions data and continues to be well supported for the final rule. The emissions data from the three ICR test plants that employ SCR (Agrium North Bend, PCS Geismar Train 5, and El Dorado Nitrogen) have no discernible differences in technology or process that would account for the differences in emission levels. Therefore we selected an emission limit that was achievable by all three of the units controlled by SCR.

Emissions during some short periods (e.g. startup and shutdown) can be higher than during steady state operations at some nitric acid plants. At proposal, we estimated these periods to occur on average about 3 to 4 hours per month. However, as the result of public comments, we have learned that these periods can occur more frequently for some facilities. These periods still make up an extremely small fraction of total operating time (i.e. about 1 percent or less). In response to public comments, the final rule contains a revised method for calculating NO<sub>x</sub> emissions. The calculation method used at proposal assumed that each operating day was weighted equally, regardless of the numbers of operating hours during that day. The proposed method could hypothetically lead to a day with only a few operating hours contributing 1/30th of the calculated rolling emission rate. The calculation method used for the final rule has been established such that every hourly NO<sub>x</sub> concentration monitored during each 30 unit operating day period is weighted equally. The adjusted calculation calculates each hourly emission rate and divides by the total operating hours. This adjustment prevents infrequent and short duration events from having an unrepresentatively large impact on the 30 day rolling emission rate. Using the adjusted calculation method, the maximum 30 day rolling emission rate for any of the three ICR test plants with SCR is 0.41 lb NO<sub>x</sub>/ton acid at Agrium North Bend.

The EPA also reanalyzed the CEMS data using the assumption that the number of periods of startup and shutdown could be higher for some facilities compared to the number of periods reported for Agrium North Bend. EPA compared the number of startup/shutdown periods for Agrium North Bend to the highest number of startup/shutdown periods reported through the Section 114 request.

According to the information received in response to the Section 114 request, the highest number of hourly startup/shutdown (SS) periods per year was reported as 95 by Coffeyville. Information received after publication of the proposed rule indicates there are reasons that other facilities may startup and shutdown more frequently than the Agrium North Bend facility.

To look at the impact of more frequent start up and shutdown periods, we doubled the 67 hourly SS periods reported by Agrium North Bend to 134 hourly SS periods, which would place them above the highest number of SS periods from any of our Section 114 respondents. Then, we analyzed the

CEMS data for Agrium North Bend by assuming that the number of SS periods is doubled. The resulting maximum 30 operating day emission rate is 0.47 lb NO<sub>x</sub>/ton acid. This example demonstrates that the limit promulgated in this final rule is achievable by affected facilities that experience more periods of startup and shutdown than the Agrium North Bend plant. See *Agrium North Bend Analyses*, and *Statistical Evaluation of CEMS Data to Determine the NO<sub>x</sub> Emission Standard (Updated Memo for Final Standard)*, available in docket ID: EPA-HQ-OAR-2010-0750. Thus, we conclude that a limit of 0.50 lb NO<sub>x</sub>/ton acid is appropriate.

The EPA disagrees with the commenter that stated “the proposed standard appears to simply accommodate current industry practice rather than properly comply with the EPA’s technology-forcing mandate under CAA § 111.” The EPA maintains that SCR is the “best system of emission reduction” even though it is not a new technology. It is unclear what technologies the commenter suggests would work more effectively for controlling NO<sub>x</sub> emissions than those evaluated during this rulemaking (SCR and NSCR). Though the CAA is intended to be “technology-forcing,” NSPS must be set based on “substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard.” *Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981). As one court stated, “[t]he statutory standard is one of achievability, given costs.” *National Lime Assn. v. EPA*, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980). Further, in assessing whether a standard is achievable, the EPA must account for routine operating variability associated with performance of the system on whose performance the standard is based. See *National Lime Ass’n*, 627 F.2d at 431–33. While NSPS are based on the effectiveness of one or more specific technological systems of emissions control, unless certain conditions are met, the CAA does not authorize the EPA to prescribe a particular technological system that must be used to comply with a NSPS. See CAA section 111(b)(5). Rather, sources can select whatever combination of measures will achieve equivalent or greater control of emissions.

*Comment:* Commenters stated that the EPA did not fulfill the requirements of CAA section 111 because the agency failed to consider the variable conditions present in the industry that impact that achievability of the proposed standard. Specifically, the

commenters stated that the EPA failed to consider the costs of adding additional controls to modified or reconstructed facilities that are controlled with NSCR given that the EPA acknowledged that there was uncertainty at the time of the proposed rule that NSCR controlled plants could achieve the 0.50 lb/ton limit.

Another commenter stated that the facilities used to develop the proposed standard are not representative of the industry as a whole because these three facilities use controls that are not in use or not available to all nitric acid plants. The commenter notes that two of the three plants (PCS Geismar and El Dorado Nitrogen) were designed with dual-pressure technology and other features that minimize emissions. According to the commenter, these technologies may not be available to smaller new plants or modified plants. The commenter also notes that El Dorado Nitrogen has high pressure steam that can be used to pre-heat the SCR and the Agrium North Bend facility uses hydrogen peroxide injection and extended absorption. According to the commenter, these control technologies may not be economically feasible for some facilities. The commenter further states that adding a SCR or NSCR may not be enough to meet the proposed limit for some existing mono-pressure facilities that trigger the NSPS.

*Response:* The EPA agrees that further evaluation of the achievability of the standard by nitric acid plants that have been modified or reconstructed was warranted prior to issuing the final rule. The commenters identified a few nitric acid plants that fit those definitions, and we performed further evaluation of the NO<sub>x</sub> CEMS data for such plants.

A BACT determination has been made on a modified source (Agrium North Bend) for which we have CEMS data. We note that the Agrium North Bend facility is a relatively small, monopressure, modified facility. As part of our evaluation, we analyzed the data for this plant to estimate emissions performance of this BACT facility and have determined this facility meets the NO<sub>x</sub> limit in this final rule. See memo entitled *Agrium North Bend Analyses*, which is available in the docket for this rulemaking: EPA-HQ-OAR-2010-0750.

As a part of our analysis, we have evaluated the cost for controls required for the Agrium North Bend plant when this facility was modified. An SCR was installed at a capital cost of roughly \$2,700,000 (\$370,000 annualized cost, assuming a 20 year capital recovery period). This facility achieved emissions reductions of nearly 300 tons of NO<sub>x</sub> per year. From these figures, we

calculate the cost effectiveness for the addition of this control device as roughly \$1,200 per ton of NO<sub>x</sub>. See the memo *Impacts of Nitric acid NSPS Review-NO<sub>x</sub> (Updated Memo for Final NSPS)*. We conclude this cost effectiveness is reasonable and supported by NSPS for NO<sub>x</sub> for other source categories. See 77 FR 9303, 76 FR 24976, 75 FR 51570, and 75 FR 55009.

The EPA has decided to promulgate a limit of 0.50 lb NO<sub>x</sub>/ton calculated in a manner that is more appropriate than what was proposed. The calculation in the final rule uses each hourly NO<sub>x</sub> emission rate during the 30 day period rather than creating 30 daily values. See *Statistical Evaluation of CEMS Data to Determine the NO<sub>x</sub> Emission Standard (Updated Memo for Final Standard)*, and *Agrium North Bend Analyses*, for more information on the 30 day rolling emission rate calculations. We conclude that the modified monopressure Agrium North Bend plant would meet this emission limit of 0.50 lb NO<sub>x</sub>/ton acid, and that this level is appropriate for future modified and reconstructed sources as well as new sources. For a discussion of the data received from the American Chemistry Council after the proposed rule, see *Analysis of Data Received Between Proposal and Promulgation of Part 60, Subpart Ga*, which is available in docket ID EPA-HQ-OAR-2010-0750. Also see *Response to Comment Document* section 7.1–7.3.

At proposal, there was uncertainty as to whether units using NSCR could achieve the proposed limits. We have evaluated CEMS data for two additional plants using NSCR and these facilities do meet the final emission limit. We evaluated continuous NO<sub>x</sub> emission data from Dyno Nobel St. Helens. This analysis shows a maximum 30 operating day emission rate of 0.21 lb NO<sub>x</sub>/ton acid. Also, we had monthly data from JR Simplot, a nitric acid plant controlled by NSCR, which ranged from 0.15 lb NO<sub>x</sub>/ton acid to 0.36 lb NO<sub>x</sub>/ton acid. Although monthly data are not directly comparable to continuous hourly NO<sub>x</sub> emission data, there is a strong probability that this source controlled by NSCR could comply with 0.50 lb NO<sub>x</sub>/ton acid. Therefore, based on our evaluation of this technical information, we conclude the standard of 0.50 lb NO<sub>x</sub>/ton acid limit is achievable for at least some nitric acid production units using NSCR.

The conclusion that selective catalytic reduction (SCR) is BSER has not changed from proposal. The justification includes the following reasons: (1) Based on the data available to the Agency, SCR achieves lower emissions

than other control technologies; (2) SCR technology is less expensive and more cost effective than nonselective catalytic reduction (NSCR) for control of NO<sub>x</sub> emissions; and (3) SCR produces minimal secondary environmental impacts. In addition, we note that SCR is the only known NO<sub>x</sub> control technology being installed in new NAPUs and SCR has been determined to be BACT in several recent BACT determinations.

If higher NO<sub>x</sub> emissions during periods of startup and shutdown are a concern, there are two types of equipment that can be used by affected facilities. These include startup heaters and hydrogen peroxide injection. Startup heaters are used to heat the SCR to the appropriate operating temperature so that the SCR can be operational during startups, thereby reducing NO<sub>x</sub> emissions during startup. Hydrogen peroxide injection, which is not applicable in all situations, can also be used in the extended absorption column to decrease NO<sub>x</sub> emissions. Affected facilities could also employ extended absorption to increase the yield of nitric acid; thus reducing the amount of NO<sub>x</sub> emitted from the absorption unit. We recognize that there may be circumstances where one or more of these specific types of equipment or measures may not be feasible. However, based on all of the data and information that we have gathered and analyzed, we conclude any facility (including mono pressure units) that chooses to modify or reconstruct will be able to achieve a limit of 0.50 lb/ton at a reasonable costs by adding controls (e.g., SCR) and or by making other changes such as those described above. Additionally, because the standard is based on 30-day emission rates, even if these technologies are not employed, emissions during brief periods of startup or shutdown should not have substantial impacts on the source's ability to meet the standard.

*Comment:* Several commenters supported the EPA's decision not to take final agency action with respect to greenhouse gases in today's rule. The commenters stated that the EPA is not obligated to develop standards for GHG as a part of the 8 year review of the NSPS and that the EPA has broad discretion to decide whether and how to regulate greenhouse gases.

Alternatively, some commenters state that the EPA's discretion to develop standards for pollutants not previously subject to NSPS is limited by the language of the statute. The commenters state that the clearest reading of CAA sections 111(a) and 111(b) require the EPA to regulate any pollutant emitted

from a listed source category when it is cost effective to do so.

Multiple commenters assert that Congress intended for the EPA to regulate the full scope of air pollution emitted by a source category when developing the initial NSPS because the language of CAA section 111 repeatedly refers to "any" air pollutant emitted by source categories subject to regulation under this section. The commenter asserts that the use of the word "any" as a modifier for "air pollutant" limits the EPA's discretion to decline to set NSPS for pollutants emitted from a listed source category. Although "any" is not included as a modifier for "air pollutant" in Section 111(a)(1)'s definition of "standard of performance," the commenter notes that it is included in the definitions of the term "modification." According to the commenter, under Section 111(b), NSPS standards apply to facilities constructed or modified after standards have been set. The commenter notes that if an existing facility undergoes a modification, a physical change that increases the emission of "any" air pollutant, it is a structure now subject to NSPS. The commenter asserts that reading Section 111 to allow for unlimited agency discretion on which pollutants require performance standards could lead to the peculiarity that a facility could become subject to NSPS regulation by increasing its emissions of a pollutant for which EPA has chosen not to set standards. According to one commenter, the emissions of GHGs from nitric acid plants would warrant listing the nitric acid plant source category, even in the absence of NO<sub>x</sub> emissions. The commenter asserts that the EPA is obligated to set standards for GHGs from nitric acid plants to avoid a situation in which a facility could become subject to NSPS for increased emissions of a pollutant that is not subject to a standard. The commenters say that the same scope that applies when the EPA develops new NSPS exists when the EPA reviews an existing NSPS and requires the EPA to review and update (or develop) the performance standard for all emitted air pollutants.

One commenter states that the EPA must regulate GHGs in this rulemaking action based on the decision by the U.S. Supreme Court in *Massachusetts v. EPA*, which held that GHGs fall within the CAA definition of "air pollutant". The commenter states that since GHGs are defined as "air pollutants" and Section 111 of the CAA creates a general duty for the EPA to regulate such emissions, it would be unlawful for the EPA to choose not to regulate GHGs in

this action. The commenter states that the EPA has failed to provide an adequate explanation for its failure to regulate nitrous oxide and other greenhouse gas emissions from nitric acid plants. According to the commenter, the only way the EPA could legitimately avoid establishing standards for nitrous oxide and other greenhouse gas emissions from nitric acid plants would be if it developed a record clearly demonstrating that such regulations would not be appropriate based on relevant and lawful considerations. The commenter notes that the EPA has made no effort to make such a showing with respect to nitric acid plants.

*Response:* While the CAA permits the EPA, under appropriate circumstances, to add new standards of performance for additional pollutants, the EPA is not taking final agency action with regard to standards for GHG at this time.

The EPA has promulgated new performance standards for pollutants not previously covered concurrent with some previous 8-year review rulemakings. See 52 FR 24672, 24710 (July 1, 1987) (considering PM<sub>10</sub> controls in future rulemakings); 71 FR 9866 (February 27, 2006) (new PM standards for boilers). Additionally, as commenters correctly point out, the EPA is promulgating a new standard of performance for NO<sub>x</sub> emissions from certain affected facilities at nitric acid plants in this rulemaking. The EPA does not yet have adequate information regarding emissions of GHGs from nitric acid plants, the cost and secondary impacts of controlling NO<sub>x</sub> and GHGs, and the level of emissions achieved through simultaneous control of GHGs and NO<sub>x</sub>. However, because the Agency is in the process of gathering information and reviewing controls for this industry to continue working towards a proposal for GHG standards for nitric acid plants, the EPA is not taking any final action in today's rule with respect to a GHG standard for nitric acid plants.

*Comment:* Multiple commenters state that the EPA must promulgate section 111(d) standards for existing facilities within the nitric acid sector. One commenter states that promulgation of a performance standard for greenhouse gas emissions from newer nitric acid plants will enable (and compel) EPA to issue emission guidelines and to require states to submit implementation plans demonstrating how they will control greenhouse gas emissions from existing nitric acid plants. The commenter notes that Section 111(d) was meant to be a gap-filling provision intended to regulate this third category, and EPA's

main focus was on pollutants rather than source categories. Here, according to the commenter, nitrous oxide and other greenhouse gases are pollutants that endanger public health welfare, and existing nitric acid plants are significant sources of such pollution. According to the commenter, existing nitric acid plants account for the vast majority of the industry's nitrous oxide emissions, and they will continue to do so for some time until older plants eventually retire and are replaced with newer plants. Another commenter recommends that the EPA update section 111(d) standards as soon as possible because these standards are long overdue and technology exists that is capable of reducing emissions.

One commenter states that the EPA should develop emission guidelines for existing sources to prevent "grandfathering" of existing sources that can occur when section 111(b) is used without concurrent use of section 111(d). The commenter states that the absence of emission guidelines for existing sources creates a disincentive to build new, more environmentally friendly sources. The commenter asserts that there is existing technology to limit emissions from existing sources that is likely cost-effective. Another commenter states that the EPA should develop standards for GHGs from existing nitric acid plants through the collaborative, iterative process of setting section 111(d) emission guidelines given the importance of GHG emissions from existing nitric acid plants.

*Response:* Emission guidelines for existing sources are developed concurrently or after standards of performance for new, modified, or reconstructed sources. See 40 CFR 60.22(a) ("Concurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities, the Administrator will publish a draft guideline document containing information pertinent to control of the designated pollutant from designated facilities."). See also CAA section 111(d)(1) (emission guidelines are developed for existing sources in a source category for a pollutant "to which a standard of performance under this section would apply if such existing source were a new source"). Under the NSPS program, the Agency only develops section 111(d) existing source emission guidelines for non-criteria pollutants and non-HAPs.

In this action, we are reviewing and revising the NO<sub>x</sub> standard for new, modified, or reconstructed sources under section 111(b). As noted above, Section 111(d) does not provide

authority to the Agency to set emission guidelines for existing sources for criteria pollutants, such as NO<sub>x</sub>.

With respect to emissions guidelines for existing sources of GHGs, we are not taking final action with respect to GHG emissions from new, modified, or reconstructed sources in today's rule. As noted above, emissions guidelines for existing sources are set concurrently with or after standards for new, modified or reconstructed sources, and so we are also not taking any final action to develop emissions guidelines for existing sources of GHGs.

## VI. Summary of Cost, Environmental, Energy, and Economic Impacts of These Standards

In setting standards, the CAA requires us to consider alternative emission control approaches, taking into account the estimated costs as well as impacts on energy, solid waste, and other effects.

### A. What are the impacts for nitric acid production units?

We are presenting estimates of the impacts for 40 CFR part 60, Subpart Ga, the performance standards for new NAPUs constructed or reconstructed after October 14, 2011. The cost, environmental, and economic impacts presented in this section are expressed as incremental differences between the impacts of NAPUs complying with Subpart Ga and the current NSPS requirements of Subpart G (i.e., baseline). The impacts are presented for future NAPUs that commence construction, reconstruction, or modification over the five years following promulgation of the revised NSPS. To account for variation in the value of money over time, all annualized costs have been scaled to the 2nd quarter of 2010 using the Marshall and Swift Index. The analyses and the documents referenced below can be found in Docket ID No. EPA-HQ-OAR-2010-0750.

In order to determine the incremental impacts of this rule, we first estimated the number of new NAPUs that would become subject to regulation during the five year period after promulgation of Subpart Ga. Based on existing NAPUs and estimated future growth rates, six NAPUs are expected to trigger Subpart Ga NSPS in that five year period. In response to concerns from commenters, we have included five new NAPUs and one modified or reconstructed NAPU in the impact analysis for the final rule. For further detail on the methodology of these calculations, see memorandum *Impacts of Nitric Acid NSPS Review—NO<sub>x</sub> (Updated Memo for Final NSPS)*,

in Docket ID No. EPA-HQ-OAR-2010-0750.

The Subpart Ga NO<sub>x</sub> emission limit being promulgated in this action reflects the control technology currently in use by the industry. The Subpart G NSPS NO<sub>x</sub> emissions limit can be achieved using a number of control techniques including NSCR, SCR and HPI. We expect most new facilities to employ SCR to comply with Subpart Ga. Since we expect new units will apply the same control technology to comply with the revised limit being promulgated in today's action as they would have applied to meet the current limit, there is no increase in control costs of meeting the emission limit of 0.50 lb NO<sub>x</sub>/ton acid for new NAPUs.

There are differences in notification, testing, monitoring, reporting, and recordkeeping (MRR) between Subpart G and the new Subpart Ga that result in increased costs for new and modified NAPUs. These will include the capital cost of installing an air flow monitor and a dual span NO<sub>x</sub> concentration monitor (\$39,000 per NAPU and \$23,000 per NAPU, respectively). These costs represent annualized costs of \$15,000 per NAPU and \$9,000 per NAPU, respectively. Annual costs will also be incurred for reporting, recordkeeping, and stack testing and total \$72,000 for all six NAPUs. The incremental stack testing costs are due to the Appendix F requirements for annual rather than one-time testing for CEMS certification. They were inadvertently omitted from the cost analysis in the proposed rule. These increased costs are the only increased costs that will be incurred by new facilities as a result of the revised standards being promulgated in today's action. They are shown in Table 2.

The industry-wide cost estimate has been changed from the proposal. In the proposal we estimated that there would be six new sources during the first five years of the new Subpart Ga. We now estimate that there will be one modified source and five new sources during those five years. We estimate that the modified source would install an SCR system at a capital cost of \$2.7 million and a total annualized cost of \$370,000. The costs for the modified source are shown in Table 3.

The potential nationwide emission reduction associated with lowering the NO<sub>x</sub> limit from 3.0 to 0.50 lb NO<sub>x</sub>/ton acid (100 percent acid basis) is estimated to be about 2100 tons per year (tpy) NO<sub>x</sub>.

At proposal, the estimated capital costs and annualized costs for Subpart Ga were \$234,000, and \$90,000, respectively. The cost effectiveness was

estimated at \$45 per ton of NO<sub>x</sub>. Based on the revised costs estimates discussed above, we currently estimate the final capital costs and annualized costs to be \$3.1 million and \$585,000, respectively, for all six of the production units projected to become subject to subpart Ga between 2012 and 2017. These costs

result in a cost effectiveness of about \$280 per ton of NO<sub>x</sub>.

The estimated nationwide incremental 5-year NO<sub>x</sub> emissions reductions and cost impacts for these revisions are summarized in Table 4 of this preamble. The methodology is detailed in the memorandum *Impacts of*

*Nitric Acid NSPS Review—NO<sub>x</sub> (Updated Memo for Final NSPS).*

Further discussion of this cost effectiveness is available in the Section V of this preamble. As discussed in Section V, the cost effectiveness in this NSPS is reasonable and supported by previous NSPS for NO<sub>x</sub>.

**TABLE 2—NATIONAL INCREMENTAL NO<sub>x</sub> EMISSION REDUCTIONS AND COST IMPACTS FOR NEW NITRIC ACID PRODUCTION UNITS SUBJECT TO STANDARDS UNDER 40 CFR PART 60, SUBPART Ga (FIFTH YEAR AFTER PROMULGATION)**

| Revisions for future affected facilities          | Total capital cost<br>[\$1,000] | Total annualized<br>cost<br>[\$1,000/yr] | Estimated annual<br>NO <sub>x</sub> emission<br>reductions<br>[tons NO <sub>x</sub> /yr] | Estimated cost<br>effectiveness<br>[\$/ton NO <sub>x</sub> ] |
|---|---------------------------------|--|--|--|
| Revisions to NO <sub>x</sub> emission limit ..... | \$0                             | \$0                                      | 1806   | .....  |
| Revisions to MRR requirements .....               | 310                             | 180                                      | .....  | .....  |
| <b>Total .....</b>                                | <b>310</b>                      | <b>180</b>                               | <b>1806</b>  | <b>100</b>   |

**TABLE 3—NATIONAL INCREMENTAL NO<sub>x</sub> EMISSION REDUCTIONS AND COST IMPACTS FOR MODIFIED OR RECONSTRUCTED NITRIC ACID PRODUCTION UNITS SUBJECT TO STANDARDS UNDER 40 CFR PART 60, SUBPART Ga (FIFTH YEAR AFTER PROMULGATION)**

| Revisions for future affected facilities          | Total capital cost<br>[\$1,000] | Total annualized<br>cost<br>[\$1,000/yr] | Estimated annual<br>NO <sub>x</sub> emission<br>reductions<br>[tons NO <sub>x</sub> /yr] | Estimated cost<br>effectiveness<br>[\$/ton NO <sub>x</sub> ] |
|---|---------------------------------|--|--|--|
| Revisions to NO <sub>x</sub> emission limit ..... | \$2,700                         | \$370                                    | 299  | \$1,200  |
| Revisions to MRR requirements .....               | 62                              | 36                                       | .....  | .....  |
| <b>Total .....</b>                                | <b>2,762</b>                    | <b>406</b>                               | <b>299</b>   | <b>1,360</b>   |

**TABLE 4—NATIONAL INCREMENTAL NO<sub>x</sub> EMISSION REDUCTIONS AND COST IMPACTS FOR ALL NITRIC ACID PRODUCTION UNITS SUBJECT TO STANDARDS UNDER 40 CFR PART 60, SUBPART Ga (FIFTH YEAR AFTER PROMULGATION) \***

| Revisions for future affected facilities          | Total capital cost<br>[\$1,000] | Total annualized<br>cost<br>[\$1,000/yr] | Estimated annual<br>NO <sub>x</sub> emission<br>reductions [tons<br>NO <sub>x</sub> /yr] | Estimated cost<br>effectiveness<br>[\$/ton NO <sub>x</sub> ] |
|---|---------------------------------|--|--|--|
| Revisions to NO <sub>x</sub> emission limit ..... | \$2,700                         | \$370                                    | 2,104  | \$176  |
| Revisions to MRR requirements .....               | 372                             | 215                                      | .....  | .....  |
| <b>Total .....</b>                                | <b>3,072</b>                    | <b>585</b>                               | <b>2,104</b>   | <b>278</b>   |

\* Any small discrepancies between Tables 2, 3, and 4 are due to rounding.

**B. What are the secondary impacts for nitric acid production units?**

Indirect or secondary air quality impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (i.e., increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment that would be required under this final rule. The five new sources would likely install the same control systems to comply with the current Subpart G NO<sub>x</sub> emission limit or this Subpart Ga NO<sub>x</sub> emission limit. The revisions being finalized in today's rule require the addition of exhaust gas

flow monitors and dual span NO<sub>x</sub> concentration monitors, which would result in minimal secondary air impacts or increase in overall energy demand.

For the one modification expected to take place over the next five years, the installation of an SCR is expected. This addition will result in secondary air impacts and/or an increase in overall energy demand. However, the reductions in NO<sub>x</sub> emissions achieved through installation of this control equipment will greatly outweigh any secondary air impacts associated with increased electricity use. See *Secondary Impact Analysis—SCR*.

**C. What are the economic impacts for nitric acid production units?**

We performed an economic impact analysis that estimates changes in prices and output for NAPUs nationally using the annual compliance costs estimated for this rule. All estimates are for the fifth year after promulgation since this is the year for which the compliance cost impacts are estimated. The impacts to producers and consumers affected by this rule are slightly higher product prices and slightly lower outputs. Prices for products (nitric acid) from affected plants should increase by less than 0.36 percent for the fifth year. The output of nitric acid should decrease by less than 1.20 percent for the fifth year. Hence, the overall economic impact of this

NSPS should be low on the affected industries and their consumers. For more information, please refer to the Economic Impact Analysis for this rulemaking in the public docket.

## VII. Statutory and Executive Order Reviews

### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is not a “significant regulatory action” under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

### *B. Paperwork Reduction Act*

The information collection requirements in this final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The information collection requirements are not enforceable until OMB approves them.

These revisions to the existing new source performance standards for NAPUs add monitoring requirements for future affected facilities. We have revised the ICR for the existing rule.

These revisions to the new source performance standards for NAPUs for future affected facilities include a change to the emission limit and additional continuous monitoring requirements. The monitoring requirements include installing a continuous flow monitor and a dual span NO<sub>x</sub> concentration monitor, and monitoring the nitric acid production rate and concentration. These monitoring requirements are in addition to a CEMS for NO<sub>x</sub> concentration which is required under the current Subpart G. These requirements are based on specific requirements in Subpart Ga which are mandatory for all operators subject to NSPS. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to the EPA policies set forth in 40 CFR part 2, subpart B.

When a malfunction occurs, sources must report them according to the applicable reporting requirements of 40 CFR part 60, subpart Ga. An affirmative defense to civil penalties for violations of emission standard that are caused by

malfunctions is available to a source if it can demonstrate that certain criteria and requirements are satisfied. The criteria ensure that the affirmative defense is available only where the event that causes a violation of the emission standard meets the narrow definition of malfunction in 40 CFR 60.2 (sudden, infrequent, not reasonably preventable, and not caused by poor maintenance and or careless operation) and where the source took necessary actions to minimize emissions. In addition, the source must meet certain notification and reporting requirements. For example, the source must prepare a written root cause analysis and submit a written report to the Administrator documenting that it has met the conditions and requirements for assertion of the affirmative defense.

For this rule, EPA is adding affirmative defense to the estimate of burden in the ICR. To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source, the EPA has provided administrative adjustments to this ICR that shows what the notification, recordkeeping, and reporting requirements associated with the assertion of the affirmative defense might entail. The EPA’s estimate for the required notification, reports, and records, including the root cause analysis, associated with a single incident totals approximately \$3,141, and is based on the time and effort required of a source to review relevant data, interview plant employees, and document the events surrounding a malfunction that has caused a violation of an emission standard. The estimate also includes time to produce and retain the record and reports for submission to the EPA.

The EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense. Given the variety of circumstances under which malfunctions could occur, as well as differences among sources’ operation and maintenance practices, we cannot reliably predict the severity and frequency of malfunction-related excess emissions events for a particular source. It is important to note that the EPA has no basis currently for estimating the number of malfunctions that would qualify for an affirmative defense. Current historical records would be an inappropriate basis, as source owners or operators previously operated their facilities in recognition that they were exempt from the requirement to comply with emissions

standards during malfunctions. Of the number of violation events reported by source operators, only a small number would be expected to result from a malfunction (based on the definition above), and only a subset of violations caused by malfunctions would result in the source choosing to assert the affirmative defense. Thus, we believe the number of instances in which source operators might be expected to avail themselves of the affirmative defense will be extremely small.

For this reason, we estimate no more than 2 such occurrences for all sources subject to 40 CFR part 60, subpart Ga over the 3-year period covered by this ICR. We expect to gather information on such events in the future, and will revise this estimate as better information becomes available.

The annual burden for this information collection averaged over the first 3 years of this ICR is estimated to total 968 labor-hours per year at a cost of \$91,800 per year. The annualized capital costs are estimated at \$19,300 per year. The annualized operation and maintenance (O&M) costs are \$23,500. The total annualized capital and O&M costs are \$42,800 per year. Burden is defined at 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA’s regulations in 40 CFR are listed in 40 CFR part 9.

### *C. Regulatory Flexibility Act (RFA) as Amended by the Small Business Regulatory Enforcement Fairness Act (RFA) of 1996 (SBREFA), 5 U.S.C. 601 et seq.*

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that this rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration’s regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit



enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This certification is based on the economic impact of this action to all affected small entities. Only four small entities may be impacted by this rule. This is an estimate that may overstate small entity impacts in that we assume each existing small entity will have a new source subject to this rule, which is unlikely. We estimate that all affected small entities will have annualized costs of less than 0.2 percent of their sales.

For more information on the small entity impacts associated with this rule, please refer to the Economic Impact and Small Business Analyses in the public docket. Although this rule would not have a significant economic impact on a substantial number of small entities, the EPA nonetheless tried to reduce the impact of this rule on small entities. When developing the revised standards, the EPA took special steps to ensure that the burdens imposed on small entities were minimal. The EPA conducted several meetings with industry trade associations to discuss regulatory options and the corresponding burden on industry, such as recordkeeping and reporting.

#### *D. Unfunded Mandates Reform Act*

This rule does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local, and tribal governments, in the aggregate, or to the private sector in any one year. This rule is not expected to impact state, local, or tribal governments. The nationwide annualized cost of this rule for affected industrial sources is \$585,000/yr. Thus, this rule is not subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act (UMRA).

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule will not apply to such governments and will not impose any obligations upon them.

#### *E. Executive Order 13132, Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various

levels of government, as specified in Executive Order 13132. Nitric acid plants are privately owned companies and there will be no direct impact on states and other federal offices. Thus, Executive Order 13132 does not apply to this rule. In the spirit of Executive Order 13132, and consistent with the EPA policy to promote communications between the EPA and state and local governments, the EPA specifically solicited comment on this rule from state and local officials.

#### *F. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. This rule imposes requirements on owners and operators of NAPUs and not tribal governments. We do not know of any NAPUs owned or operated by Indian tribal governments. However, if there are any, the effect of this rule on communities of tribal governments would not be unique or disproportionate to the effect on other communities. Thus, Executive Order 13175 does not apply to this action.

#### *G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks*

The EPA interprets Executive Order 13045 (62 F.R. 19885, April 22, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it is based solely on technology performance. Nevertheless, this action will result in reductions in NO<sub>x</sub> emissions which will provide some increased protection of health for people of all ages including children.

#### *H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not a “significant energy action” as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse energy effect on the supply, distribution, or use of energy.

This action will not create any new requirements for sources in the energy supply, distribution, or use sectors.

#### *I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113 (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs the EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable VCS.

This final rulemaking involves technical standards. The EPA is using the following: ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, and ASTM E1584–11, Standard Test Method for Assay of Nitric Acid, which have been incorporated by reference.

#### *J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

The EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The EPA has also determined that a proximity-based demographic study comparing populations in closest proximity to the regulated sources to the



general population is not appropriate for this rulemaking due to lack of pollutants with localized effects.

#### K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801, *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that, before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this final rule and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). The final rules will be effective on August 14, 2012.

#### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: May 14, 2012.

**Lisa P. Jackson**,  
Administrator.

For the reasons stated in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

#### PART 60—[AMENDED]

- 1. The authority citation for part 60 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

#### Subpart A—[Amended]

- 2. Section 60.17 is amended by revising paragraph (a)(82), adding and reserving paragraphs (a)(97) and (a)(98), and adding paragraph (a)(99) to read as follows:

##### § 60.17 Incorporations by reference.

\* \* \* \* \*

(a) \* \* \*

(82) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, approved October 1, 2003, IBR approved for § 60.73a(b) of subpart Ga of this part, table 7 of

subpart III of this part, and table 2 of subpart JJJJ of this part.

\* \* \* \* \*

(99) ASTM E1584–11, Standard Test Method for Assay of Nitric Acid, approved August 1, 2011, IBR approved for § 60.73a(c) of subpart Ga of this part.

\* \* \* \* \*

- 3. Section 60.70 is amended by revising paragraph (b) to read as follows:

##### § 60.70 Applicability and designation of affected facility.

\* \* \* \* \*

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, and on or before October 14, 2011 is subject to the requirements of this subpart. Any facility that commences construction or modification after October 14, 2011 is subject to subpart Ga of this part.

- 4. Add Subpart Ga to read as follows:

##### Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011

Sec.

60.70a Applicability and designation of affected facility.

60.71a Definitions.

60.72a Standards.

60.73a Emissions testing and monitoring.

60.74a Affirmative defense for violations of emission standards during malfunction.

60.75a Calculations.

60.76a Recordkeeping.

60.77a Reporting.

##### Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011

##### § 60.70a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each nitric acid production unit, which is the affected facility.

(b) This subpart applies to any nitric acid production unit that commences construction or modification after October 14, 2011.

##### § 60.71a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

*Affirmative defense* means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

*Monitoring system malfunction* means a sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data.

Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to implement monitoring system repairs in response to monitoring system malfunctions or out-of-control periods, and to return the monitoring system to operation as expeditiously as practicable.

*Nitric acid production unit* means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

*Operating day* means a 24-hour period beginning at 12:00 a.m. during which the nitric acid production unit operated at any time during this period.

*Weak nitric acid* means acid which is 30 to 70 percent in strength.

##### § 60.72a Standards.

*Nitrogen oxides.* On and after the date on which the performance test required to be conducted by § 60.73a(e) is completed, you may not discharge into the atmosphere from any affected facility any gases which contain NO<sub>x</sub>, expressed as NO<sub>2</sub>, in excess of 0.50 pounds (lb) per ton of nitric acid produced, as a 30-day emission rate calculated based on 30 consecutive operating days, the production being expressed as 100 percent nitric acid. The emission standard applies at all times.

##### § 60.73a Emissions testing and monitoring.

(a) *General emissions monitoring requirements.* You must install and operate a NO<sub>x</sub> concentration (ppmv) continuous emissions monitoring system (CEMS). You must also install and operate a stack gas flow rate monitoring system. With measurements of stack gas NO<sub>x</sub> concentration and stack gas flow rate, you will determine hourly NO<sub>x</sub> emissions rate (e.g., lb/hr) and with measured data of the hourly nitric acid production (tons), calculate emissions in units of the applicable emissions limit (lb/ton of 100 percent acid produced). You must operate the monitoring system and report emissions during all operating periods including unit startup and shutdown, and malfunction.

(b) *Nitrogen oxides concentration continuous emissions monitoring system.* (1) You must install, calibrate, maintain, and operate a CEMS for measuring and recording the concentration of NO<sub>x</sub> emissions in accordance with the provisions of § 60.13 and Performance Specification 2

of Appendix B and Procedure 1 of Appendix F of this part. You must use cylinder gas audits to fulfill the quarterly auditing requirement at section 5.1 of Procedure 1 of Appendix F of this part for the NO<sub>x</sub> concentration CEMS.

(2) For the NO<sub>x</sub> concentration CEMS, use a span value, as defined in Performance Specification 2, section 3.11, of Appendix B of this part, of 500 ppmv (as NO<sub>2</sub>). If you emit NO<sub>x</sub> at concentrations higher than 600 ppmv (e.g., during startup or shutdown periods), you must apply a second CEMS or dual range CEMS and a second span value equal to 125 percent of the maximum estimated NO<sub>x</sub> emission concentration to apply to the second CEMS or to the higher of the dual analyzer ranges during such periods.

(3) For conducting the relative accuracy test audits, per Performance Specification 2, section 8.4, of Appendix B of this part and Procedure 1, section 5.1.1, of Appendix F of this part, use either EPA Reference Method 7, 7A, 7C, 7D, or 7E of Appendix A-4 of this part; EPA Reference Method 320 of Appendix A of part 63 of this chapter; or ASTM D6348-03 (incorporated by reference, see § 60.17). To verify the operation of the second CEMS or the higher range of a dual analyzer CEMS described in paragraph (b)(2) of this section, you need not conduct a relative accuracy test audit but only the calibration drift test initially (found in Performance Specification 2, section 8.3.1, of Appendix B of this part) and the cylinder gas audit thereafter (found in Procedure 1, section 5.1.2, of Appendix F of this part).

(4) If you use EPA Reference Method 7E of Appendix A-4 of this part, you must mitigate loss of NO<sub>2</sub> in water according to the requirements in paragraphs (b)(4)(i), (ii), or (iii) of this section and verify performance by conducting the system bias checks required in EPA Reference Method 7E, section 8, of Appendix A-4 of this part according to (b)(4)(iv) of this section, or follow the dynamic spike procedure according to paragraph (b)(4)(v) of this section.

(i) For a wet-basis measurement system, you must measure and report temperature of sample line and components (up to analyzer inlet) to demonstrate that the temperatures remain above the sample gas dew point at all times during the sampling.

(ii) You may use a dilution probe to reduce the dew point of the sample gas.

(iii) You may use a refrigerated-type condenser or similar device (e.g., permeation dryer) to remove condensate continuously from sample gas while

maintaining minimal contact between condensate and sample gas.

(iv) If your analyzer measures nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) separately, you must use both NO and NO<sub>2</sub> calibration gases. Otherwise, you must substitute NO<sub>2</sub> calibration gas for NO calibration gas in the performance of system bias checks.

(v) You must conduct dynamic spiking according to EPA Reference Method 7E, section 16.1, of Appendix A-4 of this part using NO<sub>2</sub> as the spike gas.

(5) Instead of a NO<sub>x</sub> concentration CEMS meeting Performance Specification 2, you may apply an FTIR CEMS meeting the requirements of Performance Specification 15 of Appendix B of this part to measure NO<sub>x</sub> concentrations. Should you use an FTIR CEMS, you must replace the Relative Accuracy Test Audit requirements of Procedure 1 of appendix F of this part with the validation requirements and criteria of Performance Specification 15, sections 11.1.1 and 12.0, of Appendix B of this part.

(c) *Determining NO<sub>x</sub> mass emissions rate values.* You must use the NO<sub>x</sub> concentration CEMS, acid production, gas flow rate monitor and other monitoring data to calculate emissions data in units of the applicable limit (lb NO<sub>x</sub>/ton of acid produced expressed as 100 percent nitric acid).

(1) You must install, calibrate, maintain, and operate a CEMS for measuring and recording the stack gas flow rates to use in combination with data from the CEMS for measuring emissions concentrations of NO<sub>x</sub> to produce data in units of mass rate (e.g., lb/hr) of NO<sub>x</sub> on an hourly basis. You will operate and certify the continuous emissions rate monitoring system (CERMS) in accordance with the provisions of § 60.13 and Performance Specification 6 of Appendix B of this part. You must comply with the following provisions in (c)(1)(i) through (iii) of this section.

(i) You must use a stack gas flow rate sensor with a full scale output of at least 125 percent of the maximum expected exhaust volumetric flow rate (see Performance Specification 6, section 8, of Appendix B of this part).

(ii) For conducting the relative accuracy test audits, per Performance Specification 6, section 8.2 of Appendix B of this part and Procedure 1, section 5.1.1, of Appendix F of this part, you must use either EPA Reference Method 2, 2F, or 2G of Appendix A-4 of this part. You may also apply Method 2H in conjunction with other velocity measurements.

(iii) You must verify that the CERMS complies with the quality assurance requirements in Procedure 1 of Appendix F of this part. You must conduct relative accuracy testing to provide for calculating the relative accuracy for RATA and RAA determinations in units of lb/hour.

(2) You must determine the nitric acid production parameters (production rate and concentration) by installing, calibrating, maintaining, and operating a permanent monitoring system (e.g., weigh scale, volume flow meter, mass flow meter, tank volume) to measure and record the weight rates of nitric acid produced in tons per hour. If your nitric acid production rate measurements are for periods longer than hourly (e.g., daily values), you will determine average hourly production values, tons acid/hr, by dividing the total acid production by the number of hours of process operation for the subject measurement period. You must comply with the following provisions in (c)(2)(i) through (iv) of this section.

(i) You must verify that each component of the monitoring system has an accuracy and precision of no more than ±5 percent of full scale.

(ii) You must analyze product concentration via titration or by determining the temperature and specific gravity of the nitric acid. You may also use ASTM E1584-11 (incorporated by reference, see § 60.17), for determining the concentration of nitric acid in percent. You must determine product concentration daily.

(iii) You must use the acid concentration to express the nitric acid production as 100 percent nitric acid.

(iv) You must record the nitric acid production, expressed as 100 percent nitric acid, and the hours of operation.

(3) You must calculate hourly NO<sub>x</sub> emissions rates in units of the standard (lb/ton acid) for each hour of process operation. For process operating periods for which there is little or no acid production (e.g., startup or shutdown), you must use the average hourly acid production rate determined from the data collected over the previous 30 days of normal acid production periods (see § 60.75a).

(d) *Continuous monitoring system.* For each continuous monitoring system, including NO<sub>x</sub> concentration measurement, volumetric flow rate measurement, and nitric acid production measurement equipment, you must meet the requirements in paragraphs (d)(1) through (3) of this section.

(1) You must operate the monitoring system and collect data at all required intervals at all times the affected facility

is operating except for periods of monitoring system malfunctions or out-of-control periods as defined in Appendix F, sections 4 and 5, of this part, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments.

(2) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in calculating emissions and the status of compliance with the applicable emissions limit in accordance with § 60.72a(a).

(e) *Initial performance testing.* You must conduct an initial performance test to demonstrate compliance with the NO<sub>x</sub> emissions limit under § 60.72a(a) beginning in the calendar month following initial certification of the NO<sub>x</sub> and flow rate monitoring CEMS. The initial performance test consists of collection of hourly NO<sub>x</sub> average concentration, mass flow rate recorded with the certified NO<sub>x</sub> concentration and flow rate CEMS and the corresponding acid generation (tons) data for all of the hours of operation for the first 30 days beginning on the first day of the first month following completion of the CEMS installation and certification as described above. You must assure that the CERMS meets all of the data quality assurance requirements as per § 60.13 and Appendix F, Procedure 1, of this part and you must use the data from the CERMS for this compliance determination.

**§ 60.74a Affirmative defense for violations of emission standards during malfunction.**

In response to an action to enforce the standards set forth in § 60.72a, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b)

of this section, and must prove by a preponderance of evidence that:

- (1) The violation:
  - (i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and
  - (ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and
  - (iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and
  - (iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
- (2) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and
- (3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and
- (4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and
- (5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and
- (6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and
- (7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and
- (8) At all times, the affected facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic

compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

**§ 60.75a Calculations.**

(a) You must calculate the 30 operating day rolling arithmetic average emissions rate in units of the applicable emissions standard (lb NO<sub>x</sub>/ton 100 percent acid produced) at the end of each operating day using all of the quality assured hourly average CEMS data for the previous 30 operating days.

(b) You must calculate the 30 operating day average emissions rate according to Equation 1:

$$E_{30} = k \frac{\frac{1}{n} \sum_{i=1}^n C_i Q_i}{P_i} \quad (\text{Eq. 1})$$

Where:

E<sub>30</sub> = 30 operating day average emissions rate of NO<sub>x</sub>, lb NO<sub>x</sub>/ton of 100 percent HNO<sub>3</sub>;

C<sub>i</sub> = concentration of NO<sub>x</sub> for hour i, ppmv;

Q<sub>i</sub> = volumetric flow rate of effluent gas for hour i, where C<sub>i</sub> and Q<sub>i</sub> are on the same basis (either wet or dry), scf/hr;

P<sub>i</sub> = total acid produced during production hour i, tons 100 percent HNO<sub>3</sub>;

k = conversion factor, 1.194 × 10<sup>-7</sup> for NO<sub>x</sub>; and

n = number of operating hours in the 30 operating day period, i.e., n is between 30 and 720.

**§ 60.76a Recordkeeping.**

(a) For the NO<sub>x</sub> emissions rate, you must keep records for and results of the performance evaluations of the continuous emissions monitoring systems.

(b) You must maintain records of the following information for each 30 operating day period:

- (1) Hours of operation.
- (2) Production rate of nitric acid, expressed as 100 percent nitric acid.
- (3) 30 operating day average NO<sub>x</sub> emissions rate values.

(c) You must maintain records of the following time periods:

- (1) Times when you were not in compliance with the emissions standards.
- (2) Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> monitoring equipment.
- (3) Times when the volumetric flow rate exceeded the high value of the

volumetric flow rate monitoring equipment.

(d) You must maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.

(e) You must maintain records of any modifications to CEMS which could affect the ability of the CEMS to comply with applicable performance specifications.

(f) For each malfunction, you must maintain records of the following information:

(1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

#### **§ 60.77a Reporting.**

(a) The performance test data from the initial and subsequent performance tests and from the performance evaluations of the continuous monitors must be submitted to the Administrator at the appropriate address as shown in 40 CFR 60.4.

(b) The following information must be reported to the Administrator for each 30 operating day period where you were not in compliance with the emissions standard:

- (1) Time period;
- (2) NO<sub>x</sub> emission rates (lb/ton of acid produced);
- (3) Reasons for noncompliance with the emissions standard; and
- (4) Description of corrective actions taken.

(c) You must also report the following whenever they occur:

- (1) Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> pollutant monitoring equipment.
- (2) Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.

(d) You must report any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.

(e) Within 60 days of completion of the relative accuracy test audit (RATA) required by this subpart, you must submit the data from that audit to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data

Exchange (CDX) ([https://cdx.epa.gov/SSL/cdx/EPA\\_Home.asp](https://cdx.epa.gov/SSL/cdx/EPA_Home.asp)). You must submit performance test data in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (<http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using test methods listed on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by registered letter to EPA and the same ERT file with the CBI omitted to EPA via CDX as described earlier in this paragraph. Mark the compact disk or other commonly used electronic storage media clearly as CBI and mail to U.S. EPA/OAQPS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. At the discretion of the delegated authority, you must also submit these reports to the delegated authority in the format specified by the delegated authority. You must submit the other information as required in the performance evaluation as described in § 60.2 and as required in this chapter.

(f) If a malfunction occurred during the reporting period, you must submit a report that contains the following:

(1) The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.

(2) A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

[FR Doc. 2012-19691 Filed 8-13-12; 8:45 am]

**BILLING CODE 6560-50-P**

## **FEDERAL COMMUNICATIONS COMMISSION**

### **47 CFR Part 51**

[WC Docket Nos. 10-90, 07-135, 05-337, 03-109; GN Docket No. 09-51; CC Docket Nos. 01-92, 96-45; WT Docket No. 10-208; DA 12-870]

### **Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support**

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule.

**SUMMARY:** In this document, the Federal Communications Commission revises and clarifies certain provisions of its rules relating to the transition of intrastate switched access rates and the operation of the transitional recovery mechanism that were adopted in the *USF/ICC Transformation Order*. The Commission also grants a number of limited waivers of the Commission's rules to address administrative concerns and rule inconsistencies.

**DATES:** Effective September 13, 2012.

**FOR FURTHER INFORMATION CONTACT:** Belinda Nixon, Wireline Competition Bureau, (202) 418-1520.

**SUPPLEMENTARY INFORMATION:** This is a summary of the Wireline Competition Bureau's Order in WC Docket Nos. 10-90, 07-135, 05-337, 03-109; GN Docket No. 09-51; CC Docket Nos. 01-92, 96-45; WT Docket No. 10-208; DA 12-870, released on June 5, 2012. The full text of this document is available for public inspection during regular business hours in the FCC Reference Center, Room CY-A257, 445 12th Street SW., Washington, DC 20554, and at the following Internet address: [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2012/db0425/FCC-12-47A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0425/FCC-12-47A1.pdf). The complete text may be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc. (BCPI), Portals II, 445 12th Street SW., Room CY-B402, Washington, DC 20554, (202) 488-5300, facsimile (202) 488-5563, or via email at [fcc@bcpiweb.com](mailto:fcc@bcpiweb.com).

### **I. Introduction**

1. In the *USF/ICC Transformation Order*, the Commission delegated to the Wireline Competition Bureau (Bureau) the authority to revise and clarify rules as necessary to ensure that the reforms adopted in the *USF/ICC Transformation Order* are properly reflected in the rules. In this Order, the Bureau acts pursuant to this delegated authority to revise and

## **Exhibit 4**

| State       | SO <sub>2</sub> Group 2 trading budget (tons) * for 2014 and thereafter | New unit set-aside (tons) for 2014 and thereafter | Indian country new unit set-aside (tons) for 2014 and thereafter |
|-------------|---|---|--|
| Texas ..... | 314,021   | 15,387  | 314  |

\* Each trading budget includes the new unit set-aside and, where applicable, the Indian country new unit set-aside and does not include the variability limit.

(b) The States' variability limits for the State SO<sub>2</sub> Group 2 trading budgets for the control periods in 2014 and thereafter are as follows:

| State                | Variability limits for 2014 and thereafter |
|----------------------|--|
| Alabama .....        | 38,386                                     |
| Georgia .....        | 17,142                                     |
| Kansas .....         | 7,475                                      |
| Minnesota .....      | 7,557                                      |
| Nebraska .....       | 11,709                                     |
| South Carolina ..... | 15,952                                     |
| Texas .....          | 56,524                                     |

15. Section 97.725 is amended by, in paragraph (b)(1), removing the word "2013" and adding, in its place, the word "2015".

[FR Doc. 2011-26521 Filed 10-13-11; 8:45 am]

BILLING CODE 6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2010-0750; FRL-9477-1]

RIN 2060-AQ10

### New Source Performance Standards Review for Nitric Acid Plants

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The EPA is proposing revisions to the new source performance standards (NSPS) for nitric acid plants. Nitric acid plants include one or more nitric acid production units. These proposed revisions include a change to the nitrogen oxides (NO<sub>x</sub>) emission limit, which applies to each nitric acid production unit commencing construction, modification, or reconstruction after October 14, 2011. These proposed revisions will also include additional testing and monitoring requirements.

**DATES:** Comments must be received on or before November 28, 2011. Under the Paperwork Reduction Act, comments on the information collection provisions are best assured of having full effect if the Office of Management and Budget (OMB) receives a copy of your

comments on or before November 14, 2011.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2010-0750, by one of the following methods:

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.
- **Agency Web site:** <http://www.epa.gov/oar/docket.html>. Follow the instructions for submitting comments on the EPA Air and Radiation Docket Web site.

- **E-mail:** [a-and-r-Docket@epa.gov](mailto:a-and-r-Docket@epa.gov). Include EPA-HQ-OAR-2010-0750 in the subject line of the message.

- **Fax:** Fax your comments to: (202) 566-9744, Attention Docket ID No. EPA-HQ-OAR-2010-0750.

- **Mail:** Send your comments to: EPA Docket Center (EPA/DC), Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. **Attention:** Docket ID No. EPA-HQ-OAR-2010-0750. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St., NW., Washington, DC 20503.

- **Hand Delivery or Courier:** In person or by courier, deliver comments to EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC 20460. Such deliveries are only accepted during the Docket Center's normal hours of operation, (8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays), and special arrangements should be made for deliveries of boxed information. Please include a total of two copies.

**Instructions:** All submissions received must include the agency name and docket number or Regulatory Information Number (RIN) for this rulemaking. All comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise

protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means that the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to the EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and will be made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For detailed instructions on submitting comments and additional information on the rulemaking process, see the "General Information" heading of the **SUPPLEMENTARY INFORMATION** section of this document.

**Docket:** All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available (e.g., CBI or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, Public Reading Room, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For questions about these proposed standards for nitric acid production units, contact Mr. Chuck French, Sector

Policies and Program Division, Office of Air Quality Planning and Standards (D243-02), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-7912; fax number (919) 541-3207, e-mail address: French.chuck@epa.gov.

#### SUPPLEMENTARY INFORMATION:

The information presented in this preamble is organized as follows:

- I. General Information
  - A. Does this action apply to me?
  - B. What should I consider as I prepare my comments to EPA?
  - C. Where can I get a copy of this document?
  - D. When would a public hearing occur?
- II. Background Information
  - A. What is the statutory authority for these proposed revisions?
  - B. What are the current NSPS for Nitric Acid Plants?
- III. Summary of Proposed Standards
  - A. What source category is being regulated?

- B. What pollutants are emitted from these sources?
    - C. What are the proposed standards?
  - IV. Rationale for the Proposed Standards
    - A. How is EPA proposing to revise the emissions limit for affected sources?
    - B. How is EPA proposing to revise the testing and monitoring requirements?
    - C. How is EPA proposing to revise the notification, reporting, and recordkeeping requirements?
  - V. Summary of Cost, Environmental, Energy, and Economic Impacts of These Proposed Standards
    - A. What are the impacts for new nitric acid production units?
    - B. What are the secondary impacts for new nitric acid production units?
    - C. What are the economic impacts for new nitric acid production units?
  - VI. Statutory and Executive Order Reviews
    - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
    - B. Paper Reduction Act

- C. Regulatory Flexibility Act
    - D. Unfunded Mandates Reform Act
    - E. Executive Order 13132: Federalism
    - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
    - G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks
    - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
    - I. National Technology Transfer and Advancement Act
    - J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

#### I. General Information

##### A. Does this action apply to me?

Categories and entities potentially regulated by these proposed revisions include:

| Category                            | NAICS code <sup>1</sup> | Examples of regulated entities        |
|-------------------------------------|-------------------------|---------------------------------------|
| Industry .....                      | 325311                  | Nitrogenous Fertilizer Manufacturing. |
| Federal government .....            | .....                   | Not affected.                         |
| State/local/tribal government ..... | .....                   | Not affected.                         |

<sup>1</sup> North American Industrial Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility would be regulated by this action, you should examine the applicability criteria in 40 CFR 60.70a. If you have any questions regarding the applicability of this proposed action to a particular entity, contact the person in the preceding **FOR FURTHER INFORMATION CONTACT** section.

##### B. What should I consider as I prepare my comments to the EPA?

Do not submit information that you consider to be CBI electronically through <http://www.regulations.gov> or e-mail. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711, Attention Docket ID No. EPA-HQ-OAR-2010-0750. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information

claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

##### C. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of the proposed action is available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN) Web site. Following signature, EPA posted a copy of the proposed action on the TTN Web site's policy and guidance page for newly proposed or promulgated rules at <http://www.epa.gov/ttn/oarpg>. The TTN Web site provides information and technology exchange in various areas of air pollution control.

##### D. When would a public hearing occur?

If anyone contacts EPA requesting to speak at a public hearing by October 24, 2011, a public hearing will be held on October 28, 2011. Persons interested in presenting oral testimony or inquiring as to whether a public hearing is to be held should contact Mr. Chuck French, listed in the **FOR FURTHER INFORMATION CONTACT** section.

#### II. Background Information

##### A. What is the statutory authority for these proposed revisions?

New source performance standards (NSPS) implement Clean Air Act (CAA) section 111. Section 111 of the CAA requires that NSPS reflect the application of the best system of emission reductions which (taking into consideration the cost of achieving such emission reductions, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. This level of control has sometimes been referred to as "best demonstrated technology" or BDT, and will be referred to in this preamble as best system of emissions reduction (BSER). In assessing whether a standard is achievable, EPA must account for routine operating variability associated with performance of the system on whose performance the standard is based. See *National Lime Ass'n v. EPA*, 627 F. 2d 416, 431-33 (DC Cir. 1980).

Common sources of information as to what constitutes a BSER, and for assessing that technology's level of performance, include best available control technology (BACT) determinations made as part of new source review (NSR). Also, emissions limits that exist in state and federal permits for recently permitted sources,

and emissions test data for demonstrated control technologies collected for compliance demonstration or other purposes are evaluated during these assessments. EPA compares permit limitations and BACT determination data with actual performance test data to identify any site-specific factors that could influence general applicability of this information. Also, as part of this review we evaluate if NO<sub>x</sub> emissions limits more stringent than those in Subpart G have been established, or if emissions limits have been developed for additional air pollutants.

The use of State permit data and BACT determination developed as part of NSR is appropriate because a BACT determination evaluates information that is similar to BSER, such as available controls, their performance, cost, and non-air environmental impacts. One important difference between BACT determinations and a BSER determination for purposes of NSPS is that BACT determinations are made on a site-specific basis. Therefore, in evaluating BACT determinations, we have to account for any site-specific factors that may not be applicable to the source category as a whole.

Section 111(b)(1)(B) of the CAA requires EPA to periodically review and revise the standards of performance, as necessary, to reflect improvements in methods for reducing emissions.

Existing affected facilities that are modified or reconstructed would also be subject to these proposed revisions for affected sources. Under CAA section 111(a)(4), "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Changes to an existing facility that do not result in an increase in emissions are not considered modifications.

Rebuilt affected facilities would become subject to the proposed standards under the reconstruction provisions, regardless of changes in emission rate.

Reconstruction means the replacement of components of an existing facility such that (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and (2) it is technologically and economically feasible to meet the applicable standards (40 CFR 60.15).

The NSPS are directly enforceable federal regulations issued for categories of sources which cause, or contribute significantly to, air pollution which may

reasonably be anticipated to endanger public health or welfare. The primary purpose of the NSPS is to attain and maintain ambient air quality by ensuring that the best demonstrated emission control technologies are installed as the industrial infrastructure is modernized, when it is most cost effective to build in controls. Since 1970, the NSPS have been successful in achieving long-term emissions reductions in numerous industries by assuring that cost-effective controls are installed on new, reconstructed, or modified sources.

#### *B. What are the current NSPS for Nitric Acid Plants NSPS?*

The current NSPS for Nitric Acid Plants (40 CFR part 60, Subpart G) were promulgated in the **Federal Register** on December 23, 1971 (36 FR 24881). The first review of the Nitric Acid Plants NSPS was completed on June 19, 1979 (44 FR 35265). An additional review was completed on April 5, 1984 (49 FR 13654). No changes were made to the NSPS as a result of those reviews. Minor testing and monitoring changes were made during three reviews since the original promulgation in 1971 (October 6, 1975 (40 FR 46258), April 22, 1985 (50 FR 15894), and February 14, 1989 (54 FR 6666)). The current Nitric Acid Plants NSPS (Subpart G) applies to each nitric acid production unit constructed or modified after August 17, 1971. The present NSPS has an emissions limit of 3.0 lb of NO<sub>x</sub> per ton of 100% nitric acid produced and a 10% opacity standard as an additional method of demonstrating compliance with the NO<sub>x</sub> emission limit. Continuous NO<sub>x</sub> monitors are required as well as recording daily production rates.

### **III. Summary of Proposed Standards**

#### *A. What source category is being regulated?*

Today's proposed standards would apply to new nitric acid production units. Nitric acid plants may include one or more nitric acid production units. For purposes of these proposed regulations, a nitric acid production unit is defined as any facility producing weak nitric acid by either the pressure or atmospheric pressure process. This definition has not changed from Subpart G.

A new nitric acid production unit is defined as a nitric acid production unit for which construction, modification, or reconstruction commences on or after October 14, 2011. The affected facility under the proposed NSPS is each nitric acid production unit.

#### *B. What pollutants are emitted from these sources?*

The pollutant to be regulated under section 111(b), for new nitric acid production units, is NO<sub>x</sub> which undergo reactions in the atmosphere to form particulate matter and ozone. Nitrogen oxides, particulate matter, and ozone are all subject to national ambient air quality standards under section 109 of the Clean Air Act, based on their adverse effects to human health and welfare. NO<sub>x</sub> is a criteria pollutant.

These nitric acid production units also emit another nitrogen compound known as nitrous oxide (N<sub>2</sub>O), which is considered a greenhouse gas (GHG). We are not proposing an N<sub>2</sub>O emission standard in this action. Although we have limited data from facilities in the U.S, we believe that owners/operators of nitric acid production units should consider technologies and technology combinations that would be appropriate for controlling both NO<sub>x</sub> and N<sub>2</sub>O. Some technologies such as selective catalytic reduction (SCR) and hydrogen peroxide injection (HPI) are effective only in controlling NO<sub>x</sub>. However, other technologies such as nonselective catalytic reduction (NSCR) are effective in controlling both NO<sub>x</sub> and N<sub>2</sub>O.

The technology combinations that control both NO<sub>x</sub> and N<sub>2</sub>O include SCR plus secondary catalysts (located in the ammonia reactor), and SCR plus other non-NSCR types of tertiary catalysts (located after the absorption tower). We expect any controls applied to control NO<sub>x</sub> emissions would not preclude installing cost effective N<sub>2</sub>O control technologies in the future. We solicit relevant comments and additional information on these technologies. Nitric acid production is also one of the industrial sectors for which "white papers" were written to provide basic information on GHG control options to assist state and local air pollution control agencies, tribal authorities, and regulated entities in implementing measures to reduce GHGs, particularly in the assessment of BACT under the PSD permitting program. These papers provide basic technical information that may be useful in a BACT analysis but they do not define BACT for each sector. For more information regarding the "white papers," see <http://www.epa.gov/nsr/ghgpermitting.html>.

#### *C. What are the proposed standards?*

We are proposing to reduce the NO<sub>x</sub> emissions limit from 3.0 pounds of NO<sub>x</sub> per ton of nitric acid produced (lb NO<sub>x</sub>/ton acid), expressed as NO<sub>2</sub>, with the production being expressed as 100 percent nitric acid, to 0.50 lb NO<sub>x</sub>/ton



acid as a 30-day emission rate calculated each operating day based on the previous 30 consecutive operating days.

The general provisions in 40 CFR part 60 provide that emissions in excess of the level of the applicable emissions limit during periods of startup, shutdown, and malfunction shall not be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. See 40 CFR 60.8(c). The general provisions, however, may be amended for individual subparts. See 40 CFR 60.8(h). Here, the EPA is proposing standards in Subpart Ga that apply at all times, including periods of startup or shutdown, and periods of malfunction.

#### IV. Rationale for the Proposed Standards

Section 111(a)(1) requires that standards of performance for new sources reflect the—

\* \* \* degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

##### A. How is EPA proposing to revise the emissions limit for affected sources?

For affected sources constructed, modified, or reconstructed after October 14, 2011, we are proposing to reduce the NO<sub>x</sub> emissions limit from 3.0 lb NO<sub>x</sub>/ton acid to 0.50 lb NO<sub>x</sub>/ton acid as a 30-day emission rate calculated each operating day based on the previous 30 consecutive operating days.

The NO<sub>x</sub> emissions limit for affected facilities constructed, modified, or reconstructed after August 17, 1971, and before October 14, 2011 remains unchanged at 3.0 lb NO<sub>x</sub>/ton acid.

The 1971 promulgated Nitric Acid Plants NSPS were based on emission levels achieved using catalytic reduction (see 36 FR 2881, December 23, 1971). Additional reviews of the NSPS were conducted in 1979 and 1984, where EPA again concluded that catalytic reduction was the BSER considering economic, energy, and nonair environmental impacts. No changes were made to the NSPS during these reviews.

There are currently 40 nitric acid production facilities in the U.S. with a total of 67 nitric acid production units. For this review, information was collected from responses to a section 114 information collection request (ICR), through site visits and from trade associations. The information and

comments from stakeholders are contained in the docket.

The review of permits and other available information in the record revealed that SCR, NSCR, and HPI are all air pollution control technologies that are used for NO<sub>x</sub> control in the nitric acid production source category and EPA considered all of these as candidates for BSER as we developed this proposed rule. We are not aware of any other established or emerging technologies that should be considered as candidates for BSER for this source category. SCR is used in 25 nitric acid production units in the U.S. NSCR is used in 14 nitric acid process units in the U.S. HPI is used by one facility. All of these air pollution control technologies are effective in controlling NO<sub>x</sub> emissions. The average NO<sub>x</sub> emission reductions for these controls are: SCR—98%; NSCR—99%, HPI—95% (for more information see Table 3.3 in the Economic Impact Analysis, which is available in the docket for this action).

The approach used for determining BSER for nitric acid production units involved reviewing the emission test data submitted in response to the section 114 ICR, recently issued state permit data, and BACT determinations developed as part of NSR. In response to clarifications of the section 114 ICRs, industry provided additional data. In determining BSER we generally look at the controls and control performance of new sources. All recent nitric acid units have installed SCR as NO<sub>x</sub> controls. Recent BACT determinations have also identified SCR as BACT.

A 2009 BACT determination has been incorporated into the facility permit limit for a nitric acid plant in American Falls, Idaho (Southeast Idaho Energy, LLC). For this analysis, SCR was determined as BACT, and 0.60 lb NO<sub>x</sub>/ton acid was determined as the BACT level of control. The Southeast Idaho Energy, LLC emission limit of 0.60 lb NO<sub>x</sub>/ton acid will apply at all times during steady-state operations (no standard applies during periods of startup or shutdown, and periods of malfunction). The compliance period was not specified.

There are other recent BACT analyses at two other nitric acid production units. At Agrium in North Bend, Ohio, the BACT limit set in 2009 is 0.61 lb NO<sub>x</sub>/ton acid on a 365-day rolling basis. At Agrium in Kennewick, Washington, the BACT limit set in 2008 is 0.60 lb NO<sub>x</sub>/ton acid in any continuous 12-month period (including startup, shutdown and malfunction).

As part of our BSER analysis, we are proposing that the standard be stated as

a rolling 30-day limit based on 30 consecutive operating days and that the limit be met at all times. We believe that the 0.50 lb NO<sub>x</sub>/ton acid standard, supported by existing source data and BACT determinations, is more stringent than any state BACT determination because 0.50 lb NO<sub>x</sub>/ton acid is lower than both 0.61 lb NO<sub>x</sub>/ton acid and 0.60 lb NO<sub>x</sub>/ton acid.

Emissions test data were obtained from a number of sources including a section 114 ICR, trade associations, and the EPA Region 5. We received nine relative accuracy test audit (RATA) reports for 5 nitric acid production units controlled with SCR, 6 RATA reports for 6 nitric acid production units controlled with NSCR, and 1 RATA report for 1 nitric acid production unit controlled with HPI. These emissions tests are short term and are presented in the memorandum *Summary of Test Data Received from Section 114 ICR*, dated August 25, 2010 (updated December 17, 2010).

In response to the section 114 request, nitric acid plants submitted NO<sub>x</sub> Continuous Emission Monitoring Systems (CEMS) data. These included 3 facilities using SCR and 2 facilities using NSCR.

All emission test data (short term and CEMS data) indicate that lower emissions than the current Subpart G emission limit of 3.0 lb NO<sub>x</sub>/ton acid are being achieved, regardless of the type of NO<sub>x</sub> control being used. We decided to further analyze the long-term CEMS data because: (1) Long term data include periods of startup and shutdown, where emissions are shown to be larger than during steady state operating conditions, (2) long term data allow the seasonal impacts of temperature and humidity on NO<sub>x</sub> controls to be evenly distributed, as these factors often vary by the time of year and location, and (3) long term data include seasonal supply and demand cycles so that all factors that influence production are equally considered.

We have concluded that SCR is BSER based on data showing lower emissions rates from SCR-controlled units. For more information, see Table 1 of this preamble and the related discussion. The fact that SCR is the only known NO<sub>x</sub> control technology being installed in new nitric acid production units, and that SCR has been determined to be BACT supports this conclusion. Further, SCR does not produce any secondary environmental impacts.

The next step in the NSPS process is to establish an achievable standard using BSER. In assessing whether a standard is achievable, the EPA must account for routine operating variability

associated with performance of the system on which the standard is based. For each plant that submitted long-term CEMS data, these data cover the entire operating period including startups, shutdowns and malfunctions. To ensure that the new NO<sub>x</sub> standard is achievable by all properly designed and operated SCR units and covers all operating periods including startup and shutdowns, we analyzed the statistical variation by calculating the 99th percentile. When establishing an emissions limit (which is considered a never to exceed level of emissions), we

use a 99th percentile based on statistical analyses. This approach accounts for short and long-term variability in emissions associated with all normal operating conditions, including startup and shutdown (see 72 FR 54878–79, September 27, 2007). This analysis is contained in the memorandum *Statistical Evaluation of CEMS Data to Determine the NO<sub>x</sub> Emission Standard*, dated July 18, 2011.

Using the long term CEMS data received through the ICR, the EPA determined that there were sufficient data to directly calculate the 99th percentile for the best performing

sources. The EPA determined that the CEMS represents long-term performance and accounts for long-term and day-to-day variability.

Long term CEMS data were obtained from 3 plants using SCR and 2 plants using NSCR. The plant with HPI did not submit long term CEMS data. Following is a discussion of these data—the 3 plants with SCR are discussed first followed by the 2 plants with NSCR.

The 99th percentile was directly calculated for these 5 best performing sources. A summary of the values is shown in Table 1.

TABLE 1—CEMS DATA—99TH PERCENTILE BY COMPLIANCE PERIOD  
[lb of NO<sub>x</sub>/T of 100% nitric acid]

| Compliance period           | Control    | 15 minute | hourly | 3-hour rolling | daily block | 7-day rolling | 30-day rolling |
|-----------------------------|------------|-----------|--------|----------------|-------------|---------------|----------------|
| PCS Geismar (Train 5) ..... | SCR .....  | 0.84      | 0.89   | 1.00           | 1.02        | 0.72          | 0.38           |
| Agrium North Bend .....     | SCR .....  | NA        | 0.69   | 0.80           | 1.67        | 0.92          | 0.50           |
| El Dorado Nitrogen .....    | SCR .....  | NA        | 0.47   | 0.47           | 0.44        | 0.40          | 0.37           |
| PCS Geismar (Train 4) ..... | NSCR ..... | 0.97      | 1.25   | 1.74           | 5.58        | 2.41          | 2.41           |
| Agrium Sacramento .....     | NSCR ..... | NA        | 2.13   | NA             | 1.60        | 1.31          | 1.29           |

The Agrium-North Bend plant submitted data spanning from January 2010 through December 2010. The continuous data over the 12-month period show 0.50 lb NO<sub>x</sub>/ton acid as the 99th percentile for each 30-day rolling time period. The 30-day periods with high NO<sub>x</sub> emissions occurred during periods of startup and shutdown.

The PCS Geismar plant submitted 15-minute average data for Train 5 for 2007–2009. Train 5 is controlled with SCR. The period spanning January 2009 through December 2009 was analyzed. The continuous data from a 12-month period show 0.38 lb NO<sub>x</sub>/ton acid as the 99th percentile for each 30-day rolling time period.

The El Dorado plant submitted hourly averages data for the period of July 2010–June 2011. The continuous data from a 12-month period show 0.37 lb NO<sub>x</sub>/ton acid as the 99th percentile for each 30-day rolling time period.

We also received 15-minute average data on NO<sub>x</sub> emissions for 2007–2009 from the PCS Geismar plant for Train 4, which is controlled with NSCR. The period spanning January 2009 through December 2009 was analyzed to be consistent with Train 5 (controlled with SCR). The continuous data from a 12-month period show 2.41 lb NO<sub>x</sub>/ton acid as the 99th percentile emissions level for a 30-day time period for train 4. The result of this analysis is limited due to the fact that the nitric acid train was operational for approximately 65 days during the 12-month period. It is

unlikely that this short time period is representative of the NSCR performance over time.

The Agrium-Sacramento plant submitted data spanning from January 2010 through December 2010. The continuous data over the 12-month period show 1.29 lb NO<sub>x</sub>/ton acid as the 99th percentile for a 30-day time period. The 30-day periods with high NO<sub>x</sub> emissions occurred during periods of startup and shutdown.

As shown by Table 1, all units are meeting the current Subpart G NO<sub>x</sub> emission standard of 3.0 lb NO<sub>x</sub>/ton acid, regardless of the compliance period. We did not receive any long term data from the nitric acid train using HPI but the table shows that the NO<sub>x</sub> emissions from nitric acid trains using SCR are lower than nitric acid trains using NSCR. For example, reviewing the 99th percentile on a 30-day rolling basis, SCR data range from 0.38 to 0.50 lb NO<sub>x</sub>/ton acid and NSCR data range from 1.29 to 2.41 lb NO<sub>x</sub>/ton acid. The lower emissions from SCR when compared to emissions from NSCR are the main reason that SCR has been determined as BSER.

Whether NSCR can meet the levels achievable by SCR over a long term, is uncertain. The long term CEMS data from 2 NSCR plants indicate difficulty in meeting the 0.50 lb NO<sub>x</sub>/ton limit. However, we have monthly average data from 2 other facilities using NSCR. These plants with NSCR (Dyno Nobel-Deer Island and JR Simplot-Helm)

submitted monthly block averages for a three year period. For 2009, the monthly block averages for both plants were very close and range from 7 to 17 ppm or approximately 0.15–0.36 lb NO<sub>x</sub>/ton acid. As these data are not continuous but rather block monthly averages, comparison of these with the CEMS data discussed above is not possible. These data are presented to show that NSCR may be able to achieve the proposed emission limit. Also, the data presented in the memorandum *Summary of Test Data Received from Section 114 ICR*, dated August 25, 2010 (updated December 17, 2010) show that low short-term NO<sub>x</sub> emissions rates are possible when using NSCR and HPI.

For the units controlled by SCR, we have not been able to identify any specific factors associated with the El Dorado Nitrogen and PCS Nitrogen Train 5 units that account for the lower emission levels compared to the Agrium-North Bend unit. Thus, based on the information currently in the record, we believe that emission levels of NO<sub>x</sub> are not only dependent on the use of SCR but also on process factors that result in variability that cannot be avoided through better or different design or through changes in operating practices.

By selecting an emission limit based on the 99th percentile of emissions data from unit with BSER (which is SCR), we ensure that this limit reflects BSER but is also achievable during all periods by facilities that have BSER equivalent

controls. The available data for units with BSER, which were used to derive the proposed NO<sub>x</sub> emissions limit for new, modified and reconstructed units, are from existing nitric acid units that have been in operation for at least 10 years. Therefore, we believe that reconstructed, modified and new sources will be able to meet the proposed limit. We have no reason to believe that modified or reconstructed sources would not be able to meet this limit. Thus, we do not believe different standards are needed for modified or reconstructed sources.

Moreover, in the past when companies chose to increase production or replace units, it is our understanding that they would build new production units rather than modify or reconstruct existing units. In fact, to our knowledge, no existing nitric acid production unit has been reconstructed or modified since Subpart G was promulgated. Therefore, we expect no reconstructions or modifications to occur for the nitric acid industry in the foreseeable future. Nevertheless, we request comment on any reconstructions or modifications to nitric acid production units that have taken place or information about any future plans to do such modifications or reconstructions. Also, we request data on the level of NO<sub>x</sub> emissions that these nitric acid units are able to achieve. If these emission levels are different than 0.50 lb NO<sub>x</sub>/ton acid on a 30 day rolling basis, the commenter should include data to support the suggested emission level.

Nevertheless, we expect that growth within the industry will be limited to newly constructed nitric acid production units. We believe that new nitric acid production units will be able to meet the proposed limit which takes into consideration routine operating variability as well as variation due to weather and periods of startups and shutdowns. The proposed emission limit of 0.50 lb NO<sub>x</sub>/ton acid is a never to exceed limit. We have not identified any specific process or technology that new nitric acid production units could employ to consistently meet an emission limit lower than 0.50 lb NO<sub>x</sub>/ton acid. Therefore, we are proposing a limit of 0.50 lb NO<sub>x</sub>/ton acid for Subpart Ga.

As part of our BSER analysis, we are proposing that the standard be stated as a rolling 30-day limit based on 30 consecutive operating days and that the limit be met at all times including periods of startup and shutdown. We believe that the 0.50 lb NO<sub>x</sub>/ton acid standard is supported by existing source data. The use of a 30-day period accounts for peaks in the data that occur

during startup and shutdown. These periods occur on average about 3 to 4 hours per month and emissions during those periods are much higher than normal. Therefore, the 3 to 4 hour periods can affect average emissions beyond that 3 to 4 hour period. Setting the standard with a 30-day compliance period meets the statutory requirement that the standard reflect the degree of emission limitation that is achievable through BSER, including during periods that include startup and shutdown.

Although the proposed limit of 0.50 lb NO<sub>x</sub>/ton acid is based on the data for SCR, NSPS do not require the use and installation of a specific control device. We request additional long-term data (in units of the standard) to determine whether NSCR and HPI can achieve the proposed limit.

For all of the reasons discussed above, we are proposing 0.50 lb NO<sub>x</sub>/ton acid as the revised standard for Nitric Acid Plants to be established in Subpart Ga.

*Periods of Startup or Shutdown.* In proposing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not proposed different standards for those periods.

According to information received from industry in the section 114 ICR, NO<sub>x</sub> emissions during startup and shutdown are higher than during normal operations. Due to the relatively short duration of startup and shutdown events (generally a few hours) compared to normal steady-state operations, we believe that a 30-day emission rate calculated based on 30 consecutive operating days will allow affected sources to meet the 0.50 lb NO<sub>x</sub>/ton acid at all times, including periods of startup and shutdown. We request comment on the use of a 30-day emission rate calculated based on 30 consecutive operating days. Further, we request comment on whether the standard should be set with a compliance period that is shorter (such as 24 hours). For any comment suggesting a shorter time period, the comment should explain why that different period is appropriate and include data supporting the different compliance period and how startup and shutdown would be factored into a shorter term limit.

If you believe that the EPA's conclusion is incorrect, or that the EPA has failed to consider any relevant information on this point, we encourage you to submit comments. In particular, we note that the general provisions in Part 60 require facilities to keep records of the occurrence and duration of any startup, shutdown or malfunction (40 CFR 60.7(b)) and either report to the

EPA any period of excess emissions that occurs during periods of startup, shutdown or malfunction (40 CFR 60.7(c)(2)) or report that no excess emissions occurred (40 CFR 60.7(c)(4)). Thus, any comments that contend that sources cannot meet the proposed standard during startup and shutdown periods should provide data and other specifics supporting their claim.

*Periods of Malfunction.* Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a "sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner \* \* \*" (40 CFR 60.2). The EPA has determined that malfunctions should not be viewed as a distinct operating mode. Further, nothing in section 111 or in case law requires that the EPA anticipate and account for the innumerable types of potential malfunction events in setting emission standards. See, *Weyerhaeuser v. Costle*, 590 F.2d 1011, 1058 (DC Cir. 1978) ("In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.")

Further, it is reasonable to interpret section 111 as not requiring the EPA to account for malfunctions in setting emissions standards. For example, we note that section 111 provides that the EPA will set standards of performance which reflect the degree of emission limitation achievable through "the application of the best system of emission reduction" that the EPA determines is adequately demonstrated. Applying the concept of "the application of the best system of emission reduction" to periods during which a source is malfunctioning presents significant difficulties. The "application of the best system of emission reduction" is more appropriately understood to include operating in such a way as to avoid malfunctions of their units.

Moreover, even if malfunctions were considered a distinct operating mode, we believe it would be impracticable to take malfunctions into account in setting CAA section 111 standards for the nitric acid production units that will

be covered in the proposed Subpart Ga. As noted above, by definition, malfunctions are sudden and unexpected events and it would be difficult to set a standard that takes into account the myriad different types of malfunctions that can occur across all sources in the category. Moreover, malfunctions can vary in frequency, degree, and duration, further complicating standard setting.

If the standard is stated as a 30-day emission rate calculated based on 30 consecutive operating days, or some other time period, we believe that sources will be able to operate their plants in compliance with the standard even if they experience malfunctions. Also, excess emissions from a nitric acid production unit during a malfunction can frequently be mitigated or avoided by shutting the plant down if a key component fails.

In the event that a source fails to comply with the applicable CAA section 111 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to avoid malfunctions and to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 111 standard was, in fact, "sudden, infrequent, not reasonably preventable" and was not instead "caused in part by poor maintenance or careless operation." 40 CFR 60.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause an exceedance of the relevant emission standard. (See, e.g., *State Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown* (Sept. 20, 1999); *Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions* (Feb. 15, 1983)). The EPA is therefore proposing to add an affirmative defense to civil penalties for exceedances of emission limits that are caused by malfunctions. See 40 CFR 60.71a (defining "affirmative defense" to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative

proceeding). We also are proposing other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; the source must prove by a preponderance of the evidence that it has met all of the elements set forth in 60.74a. (See 40 CFR 22.24). The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 60.2 (sudden, infrequent, not reasonably preventable and not caused by poor maintenance and/or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that excess emissions "[w]ere caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner \* \* \*." The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with section 60.72a(b) and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that "[r]epairs were made as expeditiously as possible when the applicable emission limitations were being exceeded \* \* \*" and that "[a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health \* \* \*." In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with section 113 of the Clean Air Act (see also 40 CFR part 22.77).

#### *B. How is the EPA proposing to revise the testing and monitoring requirements?*

The current NSPS requires an initial performance test, the installation of a continuous NO<sub>x</sub> monitor and the recording of the daily production rate and hours of operations. We are proposing that the new Subpart Ga also require the installation, operation, and maintenance of an exhaust gas flow rate monitor. The capital cost of this monitor is \$39,000 and the total annualized cost for this monitor for a new nitric acid production unit is estimated to be \$15,000. The gas flow rate monitor provides data on the volume of gas emitted per unit of time, and this information combined with the data from the NO<sub>x</sub> monitor will result in

more accurate measurements of the total NO<sub>x</sub> being emitted.

Subpart G currently requires that owners/operators of nitric acid production units conduct an initial performance test to demonstrate initial compliance with the NO<sub>x</sub> emission limit. The initial performance test is based on three one-hour test runs for NO<sub>x</sub> using manual testing methods; specifically, Method 7 (or, alternatively, Method 7A, 7B, 7C, or 7D) for NO<sub>x</sub> concentration, and Method 2 for volumetric flow rate (40 CFR 60, appendix A-4). The nitric acid production rate also must be determined during the initial performance test so that the emissions can be calculated in terms of the emissions limit, lb NO<sub>x</sub> per ton of acid produced (100 percent acid basis). The current rule does not provide specific procedures or criteria for determining the production rate or concentration.

The current NSPS also requires the owner/operator to install, calibrate, maintain and operate a CEMS for measuring NO<sub>x</sub> concentration (40 CFR 60, appendix B, Performance Specification 2) to demonstrate continuing compliance. The owner/operator is required to establish a conversion factor expressed as lb NO<sub>x</sub> per ton acid produced per ppm NO<sub>x</sub> by comparing the CEMS data (ppm NO<sub>x</sub>) obtained during the performance test to the performance test results (lb NO<sub>x</sub> per ton of acid). The conversion factor is used to convert the CEMS concentration data into units of the emissions standard on an on-going basis. Subsequently, the owner/operator must report periods of excess emissions defined as any 3-hour period during which the average nitric acid emissions (arithmetic average of three contiguous 1-hour periods) as measured by the CEMS exceed the emissions standard. The owner/operator must reestablish the conversion factor during any subsequent performance test.

As part of an ongoing effort to improve compliance with various federal air emission regulations, we are proposing to require use of a continuous compliance determination method (CCDM) for NO<sub>x</sub> for nitric acid production units subject to Subpart Ga. The proposed CCDM is a continuous emissions rate monitoring system (CERMS) comprised of the NO<sub>x</sub> CEMS and a continuous exhaust gas flow rate monitoring system. The CERMS would be required to meet the requirements of performance specification 6 (40 CFR 60, appendix B).

Performance Specification 6 (PS6) provides performance criteria for the flow rate monitoring system and stipulates the overall performance

criteria for the monitoring system in terms of pollutant emissions rate (*i.e.*, lb NO<sub>x</sub>/hour). PS6 refers to the criteria of performance specification 2 (PS2) for the NO<sub>x</sub> CEMS. Extractive Fourier Transform Infrared Spectroscopy (FTIR) is capable of measuring NO<sub>x</sub> through the requirements in Performance Specification 15 (PS15). The proposed regulation allows use of the FTIR CEMS for determining compliance with the NO<sub>x</sub> emissions limit, in lieu of a monitor meeting the requirements of PS2, at the discretion of the owner/operator.

This proposed rule would require the acid production rate to be determined on a daily basis. The daily NO<sub>x</sub> emissions rate measured by the CERMS (lb) and the daily production rate (tons of acid per day) are used to calculate the emissions rates in units of the standard, lbs NO<sub>x</sub> per ton of acid. This proposed rule would provide options for measuring the production rate and stipulates a minimum accuracy requirement for the measurement equipment. This proposed rule also requires that the concentration of the produced nitric acid be tested daily.

We are proposing that nitric acid production units subject to Subpart Ga will not be subject to an opacity standard; consequently no test or monitoring method for opacity is included in this proposed rule. Using the nitric acid production rate and concentration of the nitric acid, the NO<sub>x</sub> concentration from the NO<sub>x</sub> CEMS, and the flow rate from the proposed flow monitor, the NO<sub>x</sub> emission rate in units of the standard (lb NO<sub>x</sub>/ton acid) can be determined at any point in time. Therefore, an opacity standard is not required as an additional method of demonstrating compliance with a NO<sub>x</sub> emission limit.

*C. How is the EPA proposing to revise the notification, reporting, and recordkeeping requirements?*

The only recordkeeping requirements in the existing Subpart G are of daily production rate and hours of operation. The reporting requirements in the existing subpart G include reports of excess emissions and production rate. The frequency of reporting is semiannually as specified in 60.7(c).

Reporting and recordkeeping requirements are being proposed as separate sections for Subpart Ga. Owners/operators subject to Subpart Ga must keep records of all performance tests and results; and dated daily records of hours of operation, nitric acid production rate, and nitric acid concentration; explanations for periods of noncompliance and corrective actions

taken; span exceedances; and any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.

Owners/operators must report all performance tests and results; dated daily records of NO<sub>x</sub> emission rates that exceed the standard, explanations for periods of noncompliance and corrective actions taken, span exceedances, and any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications; and RATA (*i.e.*, from the initial certification) and performance test data. The frequency of reporting for Subpart Ga is the same as for Subpart G.

**V. Summary of Cost, Environmental, Energy, and Economic Impacts of These Proposed Standards**

In setting standards, the CAA requires us to consider alternative emission control approaches, taking into account the estimated costs as well as impacts on energy, solid waste, and other effects.

*A. What are the impacts for new nitric acid production units?*

We are presenting estimates of the impacts for the proposed 40 CFR part 60, Subpart Ga that change the performance standards for new nitric acid production units. The cost, environmental, and economic impacts presented in this section are expressed as incremental differences between the impacts of nitric acid production units complying with the proposed Subpart Ga and the current NSPS requirements of Subpart G (*i.e.*, baseline). The impacts are presented for future nitric acid production units that commence construction, reconstruction, or modification over the 5 years following promulgation of the revised NSPS. Costs are based on 2nd quarter of 2010. The analyses and the documents referenced below can be found in Docket ID No. EPA-HQ-OAR-2010-0750.

In order to determine the incremental impacts of this proposed rule, we first estimated the number of new nitric acid production units that would become subject to regulation during the five year period after promulgation of subpart Ga. Based on existing nitric acid production units and estimated future growth rates, 6 new nitric acid production units are expected to be required to meet the nitric acid production demand in that five year period. For further detail on the methodology of these calculations, see memorandum *Impacts of Nitric Acid NSPS Review—NO<sub>x</sub>*, dated December 15, 2010, in Docket ID No. EPA-HQ-OAR-2010-0750.

The proposed Subpart Ga NO<sub>x</sub> emission limit reflects the use of control technologies currently in use by the industry and reflects an adjustment of the limit to more accurately reflect the performance of these control technologies. The current Subpart G NSPS NO<sub>x</sub> emissions limit can be achieved using a number of control techniques including NSCR, SCR and HPI. In many cases, the air pollution control systems used to meet the current NSPS could be used to meet the proposed revised NO<sub>x</sub> emission limit for future affected facilities. The potential nationwide emission reduction associated with lowering the NO<sub>x</sub> limit from 3.0 to 0.50 lb NO<sub>x</sub>/ton acid (100 percent acid basis) is estimated to be 2,000 tons per year (tpy) NO<sub>x</sub>. This potential emission reduction may be overestimated because the majority of control systems installed on future affected facilities would likely result in emissions at or below the proposed emissions limit even in the absence of these proposed revisions.

There are many existing nitric acid production units currently meeting 0.50 lb NO<sub>x</sub>/ton acid. Therefore, there is no increase in control costs of meeting the proposed emission limit of 0.50 lb NO<sub>x</sub>/ton acid for new nitric acid production units compared to the control costs to comply with subpart Ga. The only costs incurred would be the installation of an air flow monitor, which is discussed below.

There are differences in notification, testing, monitoring, reporting, and recordkeeping (MRR) between Subpart G and the new Subpart Ga that result in increased costs. We are proposing the use of a CERMS for monitoring compliance with Subpart Ga. The CERMS requires the installation of both a continuous NO<sub>x</sub> monitor and continuous exhaust gas flow rate monitor. The current NSPS (subpart G) requires only the installation of a continuous NO<sub>x</sub> monitor. The installation, operation, and maintenance of an exhaust gas flow rate monitor will increase the cost to nitric acid production units over what would be incurred to comply with subpart G. We estimate that the total increase in nationwide annual cost associated with this proposed monitoring revision is \$90,110 for all six of the new production units projected to be built from 2011 to 2016.

The estimated nationwide incremental 5-year NO<sub>x</sub> emissions reductions and cost impacts for these proposed revisions are summarized in Table 2 of this preamble. The methodology is detailed in the memorandum *Impacts of Nitric Acid*

NSPS Review—NO<sub>x</sub>, dated December 13, 2010 (updated July 27, 2011). The

overall cost effectiveness is about \$45 per ton of NO<sub>x</sub> removed.

TABLE 2—NATIONAL INCREMENTAL NO<sub>x</sub> EMISSION REDUCTIONS AND COST IMPACTS FOR NEW NITRIC ACID PRODUCTION UNITS SUBJECT TO PROPOSED STANDARDS UNDER 40 CFR PART 60, SUBPART GA (FIFTH YEAR AFTER PROMULGATION)

| Proposed revisions for future affected facilities | Total annualized cost<br>[\$1,000/yr] | Potential annual NO <sub>x</sub> emission reductions<br>[tons NO <sub>x</sub> /yr] | Potential cost effectiveness<br>[\$/ton NO <sub>x</sub> ] |
|---|---------------------------------------|--|---|
| Revisions to NO <sub>x</sub> emission limit ..... | \$0                                   | 2,000  | \$0.00  |
| Revisions to MRR requirements .....               | 90                                    |  |   |
| Total .....                                       | 90                                    | 2,000  | 45  |

*B. What are the secondary impacts for new nitric acid production units?*

Indirect or secondary air quality impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*i.e.*, increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment that would be required under this proposed rule. In most cases, to comply with the current Subpart G NO<sub>x</sub> emission limit or this Subpart Ga NO<sub>x</sub> emission limit, the same control system (SCR, NSCR, or HPI) would have been installed. These proposed revisions only require the addition of exhaust gas flow monitors, which would result in minimal secondary air impacts or increase in overall energy demand.

*C. What are the economic impacts for new nitric acid production units?*

We performed an economic impact analysis that estimates changes in prices and output for nitric acid production units nationally using the annual compliance costs estimated for this proposed rule. All estimates are for the fifth year after promulgation since this is the year for which the compliance cost impacts are estimated. The impacts to producers and consumers affected by this proposed rule are slightly higher product prices and slightly lower outputs. Prices for products (nitric acid) from affected plants should increase by less than 0.07 percent for the fifth year. The output of nitric acid should decrease by less than 0.50 percent for the fifth year. Hence, the overall economic impact of this proposed NSPS should be low on the affected industries and their consumers. For more information, please refer to the Economic Impact Analysis for this proposed rulemaking in the public docket.

**VI. Statutory and Executive Order Reviews**

*A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a significant regulatory action because it could raise novel legal or policy issues. Accordingly, the EPA submitted this action to the Office of Management and Budget for review under Executive Order 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

*B. Paperwork Reduction Act*

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by the EPA has been assigned the EPA ICR number [2445.01].

These proposed revisions to the existing new source performance standards for nitric acid production units would add monitoring requirements for future affected facilities. We have revised the ICR for the existing rule.

These proposed revisions to the new source performance standards for nitric acid production units for future affected facilities include a change to the emission limit and additional continuous monitoring requirements. The monitoring requirements include installing a continuous flow monitor and monitoring the nitric acid concentration. These monitoring requirements are in addition to a CEMS for NO<sub>x</sub> concentration which is required under the current subpart G. These requirements are based on specific requirements in Subpart Ga which are mandatory for all operators subject to

NSPS. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to the EPA policies set forth in 40 CFR part 2, subpart B.

The annual burden for this information collection averaged over the first 3 years of this ICR is estimated to total 968 labor-hours per year at a cost of \$91,808 per year. The annualized capital costs are estimated at \$19,288 per year. The annualized operation and maintenance (O&M) costs are \$23,488. The total annualized capital and O&M costs are \$42,776 per year. Burden is defined at 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, the EPA has established a public docket for this rule, which includes this ICR, under Docket ID number EPA-HQ-OAR-2010-0750. Submit any comments related to the ICR to the EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to the EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, *Attention:* Desk Office for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after October 14, 2011, a comment to OMB is best assured of having its full effect if OMB receives it by November 14, 2011. The final rule will respond to any OMB

or public comments on the information collection requirements contained in this proposal.

#### *C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that this rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This certification is based on the economic impact of this action to all affected small entities. Only four small entities may be impacted by this proposed rule. We estimate that all affected small entities will have annualized costs of less than 0.3 percent of their sales. We conclude that there is no significant economic impact on a substantial number of small entities (SISNOSE) for this rule.

For more information on the small entity impacts associated with this proposed rule, please refer to the Economic Impact and Small Business Analyses in the public docket. Although this proposed rule would not have a significant economic impact on a substantial number of small entities, the EPA nonetheless tried to reduce the impact of this proposed rule on small entities. When developing the revised standards, the EPA took special steps to ensure that the burdens imposed on small entities were minimal. The EPA conducted several meetings with industry trade associations to discuss regulatory options and the corresponding burden on industry, such as recordkeeping and reporting. We continue to be interested in the potential impacts of the proposed rule

on small entities and welcome comments on issues related to such impacts.

#### *D. Unfunded Mandates Reform Act*

This rule does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local, and tribal governments, in the aggregate, or to the private sector in any one year. This rule is not expected to impact state, local, or tribal governments. The nationwide annualized cost of this proposed rule for affected industrial sources is \$90,010/yr. Thus, this rule is not subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act (UMRA).

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule will not apply to such governments and will not impose any obligations upon them.

#### *E. Executive Order 13132, Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Nitric acid plants are privately owned companies and there will be no direct impact on states and other federal offices. Thus, Executive Order 13132 does not apply to this proposed rule. In the spirit of Executive Order 13132, and consistent with the EPA policy to promote communications between the EPA and state and local governments, the EPA specifically solicited comment on this proposed rule from state and local officials.

#### *F. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. This proposed rule imposes requirements on owners and operators of nitric acid production units and not tribal governments. We do not know of any nitric acid production units owned

or operated by Indian tribal governments. However, if there are any, the effect of this proposed rule on communities of tribal governments would not be unique or disproportionate to the effect on other communities. Thus, Executive Order 13175 does not apply to this action. The EPA specifically solicits additional comment on this proposed rule from tribal officials.

#### *G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks*

The EPA interprets Executive Order 13045 (62 FR 19885, April 22, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it is based solely on technology performance.

#### *H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

#### *I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law No. 104–113 (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs the EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable VCS.

This proposed rulemaking involves technical standards. The EPA proposes to use: ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, and ASTM E1584, Standard Test Method for Assay of Nitric Acid, which have been incorporated by reference.

The EPA welcomes comments on this aspect of the proposed rulemaking and specifically invites the public to identify



potentially applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

The EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The EPA has also determined that a proximity-based demographic study comparing populations in closest proximity to the regulated sources to the general population is not appropriate for this rulemaking due to lack of pollutants with localized effects.

**List of Subjects in 40 CFR Part 60**

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements, Incorporation by reference.

Dated: September 30, 2011.

**Lisa P. Jackson,**  
*Administrator.*

For the reasons stated in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

**PART 60—[AMENDED]**

1. The authority citation for part 60 continues to read as follows:

**Authority:** 42 U.S.C. 7401.

**Subpart A—[Amended]**

2. Section 60.17 is amended by revising paragraph (a)(82) and adding paragraph (a)(93) to read as follows:

**§ 60.17 Incorporations by reference.**

\* \* \* \* \*

(a) \* \* \*

(82) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, IBR approved for § 60.73a(f)(2) of subpart Ga, table 7 of subpart IIII of this part, and table 2 of subpart JJJJ of this part.

\* \* \* \* \*

(93) ASTM E1584–00(2005)e1, Standard Test Method for Assay of Nitric Acid, IBR approved for § 60.73a(b)(2) of subpart Ga.

\* \* \* \* \*

3. Section 60.70 is amended by revising paragraph (b) to read as follows:

**§ 60.70 Applicability and designation of affected facility.**

\* \* \* \* \*

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, and on or before October 14, 2011 is subject to the requirements of Subpart G. Any facility that commences construction or modification after October 14, 2011 is subject to Subpart Ga.

\* \* \* \* \*

4. Add Subpart Ga to read as follows:

**Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011**

Sec.

60.70a Applicability and designation of affected facility.

60.71a Definitions.

60.72a Standards.

60.73a Emissions testing and monitoring.

60.74a Affirmative Defense for Exceedance of Emission Limit During Malfunction.

60.75a Calculations.

60.76a Recordkeeping.

60.77a Reporting.

**Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011**

**§ 60.70a Applicability and designation of affected facility.**

(a) The provisions of this subpart are applicable to each nitric acid production unit, which is the affected facility.

(b) This subpart applies to any nitric acid production unit that commences construction or modification on or after October 14, 2011.

**§ 60.71a Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Affirmative defense* means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

(b) *Nitric acid production unit* means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(c) *Operating day* means a 24-hour period beginning at 12:00 a.m. during which the nitric acid production unit at any time during this period.

(d) *Weak nitric acid* means acid which is 30 to 70 percent in strength.

**§ 60.72a Standards.**

(a) *Nitrogen oxides.* On and after the date on which the performance test required to be conducted by § 60.73a(a) is completed, you may not discharge into the atmosphere from any affected facility any gases which contain NO<sub>x</sub>, expressed as NO<sub>2</sub>, in excess of 0.50 pounds (lb) per ton of nitric acid produced, as a 30-day emission rate calculated based on 30 consecutive operating days, the production being expressed as 100 percent nitric acid. The emission standard applies at all times.

(b) *General Duty to minimize emissions.* At all times, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

**§ 60.73a Emissions testing and monitoring.**

(a) *Nitric acid production monitoring.*

(1) For any affected facility, you must determine the daily nitric acid production parameters (production rate and concentration) by installing, calibrating, maintaining, and operating a permanent monitoring system (e.g., weigh scale, volume flow meter, mass flow meter, tank volume) to measure



and record the weight rates of nitric acid produced in tons per day. You must verify that each component of the monitoring system has an accuracy and precision of no more than  $\pm 5$  percent of full scale.

(2) You may analyze product concentration via titration or by determining the temperature and specific gravity of the nitric acid. You may also use ASTM E1584–00(2005)e1 (incorporated by reference, see § 60.17), for determining the concentration of nitric acid in percent. You must determine product concentration daily.

(3) For any affected facility, you must use the acid concentration to express the daily nitric acid production as 100 percent nitric acid.

(4) For any affected facility, you must record the daily nitric acid production, expressed as 100 percent nitric acid, and the hours of operation.

(b) *Nitrogen oxides continuous emissions monitoring system.* (1) You must install, calibrate, maintain, and operate a continuous emission rate monitoring system (CERMS) for measuring and recording the mass emissions of  $\text{NO}_x$  in accordance with the provisions of 60.13 and Performance Specifications 2 and 6 of appendix B of this part. The CERMS must consist of equipment for measuring  $\text{NO}_x$  concentration and stack gas volumetric flow rate monitoring equipment for measuring the volumetric flow rate and for calculating and reporting hourly and daily  $\text{NO}_x$  mass emissions rates in units of lb/hour and lb  $\text{NO}_x$ /ton of 100% nitric acid.

(2) As applicable, use a span value, as defined in Performance Specification 2 § 3.11, for all  $\text{NO}_x$  concentration monitoring equipment equal to 125 percent of the maximum estimated  $\text{NO}_x$  emission concentration.

(3) You must conduct performance evaluations of the  $\text{NO}_x$  CERMS according to the requirements in § 60.13(c) and Performance Specifications 2 and 6 of appendix B of this part. For conducting the relative accuracy evaluations, per § 8.4 of the Performance Specification 2, use either EPA Reference Method 7, 7A, 7C, 7D, or 7E of appendix A–4 of this part; EPA Reference Method 320 of appendix A of part 63 of this chapter; or ASTM D6348–03 (incorporated by reference, see § 60.17).

(4) If you use EPA Reference Method 7E of Appendix A–4 of this part, you must mitigate loss of  $\text{NO}_2$  in water according to the requirements in paragraphs (a)(4)(i), (ii), or (iii) of this section and verify performance by conducting the system bias checks required in § 8 of EPA Reference

Method 7E of appendix A–4 of this part according to (b)(4)(iv) of this section, or follow the dynamic spike procedure according to paragraph (b)(4)(v) of this section.

(i) For a wet-basis measurement system, you must measure and report temperature of sample line and components (up to analyzer inlet) to demonstrate that the temperatures remain above the sample gas dew point at all times during the sampling.

(ii) You may use a dilution probe to reduce the dew point of the sample gas.

(iii) You may use a refrigerated-type condenser or similar device (e.g., permeation dryer) to remove condensate continuously from sample gas while maintaining minimal contact between condensate and sample gas.

(iv) If your analyzer measures nitric oxide (NO) and nitrogen dioxide ( $\text{NO}_2$ ) separately, you must use both NO and  $\text{NO}_2$  calibration gases. Otherwise, you must substitute  $\text{NO}_2$  calibration gas for NO calibration gas in the performance of system bias checks.

(v) You must conduct dynamic spiking according to § 16.1 in EPA Reference Method 7E of appendix A–4 of this part using  $\text{NO}_2$  as the spike gas.

(5) You must use stack gas flow rate measurement equipment with a full scale output of at least 125 percent of the maximum expected exhaust volumetric flow rate (see § 8 of Performance Specification 6, Appendix B, of this part).

(d) CERMS Quality Assurance and Quality Control.

(1) The CERMS must comply with the quality assurance requirements in Procedure 1 of Appendix F of this part. You must use cylinder gas audits to fulfill the quarterly auditing requirement at Appendix F, Procedure 1, § 5.1 of this part only on the  $\text{NO}_x$  concentration measurement equipment. You must conduct relative accuracy testing to provide for calculating the relative accuracy for RATA and RAA determinations in units of lb/hour and lb  $\text{NO}_x$ /ton nitric acid.

(2) You must determine daily calibration drift assessments separately for each analyzer in terms of its specific measurement. You must perform the daily assessments in accordance with the procedures specified in §§ 8.1 and 13.1 of Performance Specification 6 of appendix B of this part.

(3) Should you apply an FTIR CEMS meeting the requirements of Performance Specification 15, Appendix B of this part, you must replace the Relative Accuracy Test Audit requirements of Procedure 1 of appendix F of this part with the validation requirements and criteria of

§§ 11.1.1 and 12.0 of Performance Specification 15 of appendix B of this part.

(e) For each CERMS, including  $\text{NO}_x$  concentration measurement, volumetric flow rate measurement, and nitric acid production measurement equipment, you must meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) You must operate the CERMS and collect data at all required intervals at all times the affected source is operating except for periods of monitoring system malfunctions or out-of-control periods as defined in Appendix F, §§ 4 and 5, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to affect monitoring system repairs in response to monitoring system malfunctions or out-of-control periods, and to return the monitoring system to operation as expeditiously as practicable.

(2) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in calculating emissions and the status of compliance with the applicable emissions limit in accordance with § 60.72a(a).

(3) Except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments, failure to collect required data is a violation of the monitoring requirements.

(f) *Initial Performance Testing.* You, as the owner or operator of a new unit, must conduct an initial performance test to demonstrate compliance with the  $\text{NO}_x$  emissions limit under § 60.72a(a) beginning in the calendar month following initial certification of the  $\text{NO}_x$

and flow rate monitoring CEMS. The initial performance test consists of collection of hourly NO<sub>x</sub> average concentration, mass flow rate (SCFH) recorded with the certified NO<sub>x</sub> concentration and flow rate CEMS and the corresponding acid generation (tons) data for all of the hours of operation for the first 30 days beginning on the first day of the first month following completion of the CEMS installation and certification as described above. You must assure that the CERMS meets all of the data quality assurance requirements as per § 60.13 and appendix F, procedure 1 of this part and you must use the data from the CERMS for this compliance determination.

**§ 60.74a Affirmative Defense for Exceedance of Emission Limit During Malfunction.**

In response to an action to enforce the standards set forth in paragraph § 60.72a, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

- (1) The excess emissions:
  - (i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner; and
  - (ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and
  - (iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and
  - (iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
- (2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and
- (3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) *Notification.* The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 60.72a to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

**§ 60.75a Calculations.**

(a) The 30-day rolling NO<sub>x</sub> emission rate is calculated as the sum of all daily NO<sub>x</sub> mass emissions recorded by the

CERMS for 30 consecutive operating days divided by the sum of nitric acid production for these 30 consecutive operating days. Calculate and record the daily mass emissions of NO<sub>x</sub> according to the procedures in paragraphs (a)(1) through (4) of this section.

(1) You must calculate the daily mass emissions according to Equation 1:

$$M_d = \sum_{i=1}^n C_i * Q_i \quad (\text{Eq. 1})$$

Where:

M<sub>d</sub> = daily mass emissions of NO<sub>x</sub> as NO<sub>2</sub>, lb NO<sub>x</sub>.

C<sub>i</sub> = concentration of NO<sub>x</sub> for hour i, lb/standard cubic foot (scf).

Q<sub>i</sub> = volumetric flow rate of effluent gas for hour i, scf/hour.

n = number of operating hours in the operating day.

(2) For any operating day where monitoring data are only available for part of the hours where nitric acid is produced during that day due to CERMS malfunctions, out-of-control periods, or repairs associated with monitoring system malfunctions or out-of-control periods, you must calculate M<sub>d</sub> for the periods where monitoring data are available using Equation 1 in (a)(1) above, and then adjust upwards overall operating hours on a *pro rata* basis.

(3) You must ensure appropriate corrections for moisture are made when measuring flow rates.

(4) Following each calendar day on which the affected facility was operated, you must calculate the 30-day NO<sub>x</sub> emission rate according to Equation 2:

$$E_{30\text{-day}} = \frac{\sum_{d=1}^m M_d}{\sum_{d=1}^m P_d} \quad (\text{Eq. 2})$$

Where:

E<sub>30-day</sub> = emission rate of NO<sub>x</sub> as NO<sub>2</sub> calculated based on 30 consecutive operating days, lb NO<sub>x</sub>/ton of 100 percent nitric acid.

M<sub>d</sub> = daily mass emissions of NO<sub>x</sub> as NO<sub>2</sub> for operating day d, lb NO<sub>x</sub>

P<sub>d</sub> = daily nitric acid production for operating day d, tons of 100 percent nitric acid.

m = number of days in the 30-day compliance period for which CERMS data is available.

**§ 60.76a Recordkeeping.**

(a) For the NO<sub>x</sub> emissions rate, you must keep records of the performance test data from the initial and subsequent performance tests and from the performance evaluation of the continuous monitors.

(b) You must maintain records of the following information for each 30 day period:

- (1) Hours of operation.
- (2) Production rate of nitric acid, expressed as 100 percent nitric acid.
- (3) NO<sub>x</sub> mass emissions.

(c) You must maintain records of the following time periods:

- (1) Times when you were not in compliance with the emissions standards.
- (2) Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> pollutant monitoring equipment.
- (3) Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.

(d) You must maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.

(e) You must maintain records of any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.

(f) For each malfunction, you must maintain records of the following information:

- (1) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

- (2) Records of actions taken during periods of malfunction to minimize emissions in accordance with section 60.72a(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

#### **§ 60.77a Reporting.**

(a) The performance test data from the initial and subsequent performance tests and from the performance evaluations of the continuous monitors must be submitted to the Administrator at the appropriate address as shown in 40 CFR 60.4.

(b) The following information must be reported to the Administrator for each 30 day period where you were not in compliance with the emissions standard:

- (1) Time period.
- (2) NO<sub>x</sub> emission rates (lb/ton of acid produced).
- (3) Reasons for noncompliance with the emissions standard; and description of corrective actions taken.

(c) You must also report the following whenever they occur:

- (1) Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> pollutant monitoring equipment.

(2) Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.

(d) You must report any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.

(e) As of December 31, 2011 and within 60 days after the date of completing each performance evaluation or test required under this subpart, you must submit the relative accuracy test audit data and performance test data by successfully submitting the data electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see [http://www.epa.gov/ttn/chief/ert/ert\\_tool.html](http://www.epa.gov/ttn/chief/ert/ert_tool.html)).

(f) If a malfunction occurred during the reporting period, you must submit a report that contains the following:

- (1) The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.

- (2) A description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with 60.72a(b), including actions taken to correct a malfunction.

[FR Doc. 2011-26089 Filed 10-13-11; 8:45 am]

BILLING CODE 6560-50-P

## **DEPARTMENT OF HEALTH AND HUMAN SERVICES**

### **42 CFR Part 71**

[Docket No. CDC-2011-0007]

RIN 0920-AA37

#### **Foreign Quarantine; Etiological Agents, Hosts, and Vectors**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC) within the U.S. Department of Health and Human Services (HHS) is issuing this Notice of Proposed Rulemaking (NPRM) to revise the regulations that cover the importation of etiological agents and the hosts and vectors of human disease. The changes are proposed to improve CDC's ability to prevent the introduction, transmission, or spread of communicable diseases into the United States.

**DATES:** To be assured consideration, comments must be received on or before

December 13, 2011. Comments received after the close of the comment period will be considered to the fullest extent possible.

**ADDRESSES:** You may submit comments, identified by Regulatory Information Number (RIN) 0920-AA37 in the heading of this document, by any of the following methods:

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

- **E-mail:** [SAPcomments@cdc.gov](mailto:SAPcomments@cdc.gov). Please include the RIN number in the subject line of the message.

- **Fax:** 404-718-2093.

- **Mail:** Division of Select Agents and Toxins, Centers for Disease Control and Prevention, ATTN: Importation Regulations, 1600 Clifton Road, NE., MS A-46, Atlanta, Georgia 30333.

- **Hand Delivery/Courier:** Division of Select Agents and Toxins, Centers for Disease Control and Prevention, ATTN: Importation Regulations, 1600 Clifton Road, NE., MS A-46, Atlanta, Georgia 30333.

**Instructions:** All submissions received must include the agency name and RIN for this rulemaking. All relevant comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided.

**Docket:** For access to the docket to read background documents or comments received or to download an electronic version of the NPRM, go to <http://www.regulations.gov>. Comments will be available for public inspection Monday through Friday, except for legal holidays, from 9 a.m. until 5 p.m. at 1600 Clifton Road, NE., Atlanta, GA 30333. Please call ahead to 1-866-694-4867 and ask for a representative in the Division of Select Agents and Toxins to schedule your visit. Our general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet as they are received and without change.

**FOR FURTHER INFORMATION CONTACT:** Robbin Weyant, PhD, Director, Division of Select Agents and Toxins, Centers for Disease Control and Prevention, 1600 Clifton Road, NE., MS A-46, Atlanta, GA 30333. Telephone: 404-718-2000.

**SUPPLEMENTARY INFORMATION:** The Preamble to this notice of proposed rulemaking is organized as follows:

- I. Background
  - A. HHS/CDC Authority
- II. Proposed Changes to 42 CFR 71.54
  - A. Section Heading & Definitions
  - B. Biosafety and Inspection Provisions

# **Exhibit 5**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS

\_\_\_\_\_  
UNITED STATES OF AMERICA,

Plaintiff,

v.

RENTECH NITROGEN, LLC, successor to  
RENTECH ENERGY MIDWEST CORP.,

Defendant.  
\_\_\_\_\_

11 C 50358

**FILED**

FEB 13 2012

THOMAS G. BRUTON  
CLERK, U.S. DISTRICT COURT

**CONSENT DECREE**

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WHEREAS, Plaintiff the United States of America (United States), on behalf of the United States Environmental Protection Agency (EPA), has filed a complaint concurrently with this Consent Decree, alleging that Defendant Rentech Nitrogen, LLC, successor to Rentech Energy Midwest Corporation (Rentech) violated Sections 111 and 165 of the Clean Air Act (CAA), 42 U.S.C. §§ 7411 and 7475, and the federally-enforceable State Implementation Plan (SIP) for Illinois approved by EPA pursuant to Section 110 of the CAA, 42 U.S.C. § 7410, which incorporates and/or implements the above-listed federal requirements, and that Rentech violated the Title V permit requirements of the CAA, 42 U.S.C. § 7661a(a), with respect to emissions of nitrogen oxide (NO<sub>x</sub>);

WHEREAS, the Plaintiff alleges that at all times relevant to the Complaint, Rentech and/or its predecessors in interest owned and operated the #1 Nitric Acid Production Plant located in East Dubuque, Illinois (the Facility);

WHEREAS, the Plaintiff alleges that Rentech and/or its predecessors in interest constructed, modified, and operated the Facility without obtaining the appropriate pre-construction and operating permits, and without installing the best available control technology (BACT); that Rentech has failed to comply with applicable New Source Performance Standard (NSPS) NO<sub>x</sub> emission limits; and that Rentech failed to obtain a valid Title V permit, and to comply with ongoing requirements for emissions monitoring, recordkeeping and reporting, in violation of the CAA;

WHEREAS, as more specifically described in Section IV, at the Facility, Rentech has agreed to reduce emissions of NO<sub>x</sub> to BACT-equivalent levels, as defined at 40 C.F.R. § 52.21(b)(12), and to implement best work practices to minimize air pollution at the Facility;

WHEREAS, Rentech does not admit the violations alleged in the Complaint occurred, and further does not admit liability for civil penalties, fines or injunctive relief to the United States arising out of the circumstances alleged in the Complaint;

WHEREAS, Rentech has worked cooperatively with the Plaintiff to settle this matter in an expedited and environmentally beneficial manner;

WHEREAS, the Parties recognize, and this Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith, will avoid litigation among the Parties, and that this Consent Decree is fair, reasonable, and in the public interest;

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

#### **I. JURISDICTION AND VENUE**

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331, 1345, 1355, 1362, and 1367, and Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c) and 1395(a), because the violations alleged in the Complaint are alleged to have occurred in, and Rentech conducts business in, this judicial district. Rentech consents to this Court's jurisdiction over this Consent Decree and any action to enforce this Consent Decree, and to venue in this judicial district.

2. For purposes of this Consent Decree, and without admitting the violations alleged, Rentech agrees that the Complaint states claims upon which relief may be granted pursuant to Sections 111, 165 and 502 of the CAA, 42 U.S.C. §§ 7411, 7475 and 7611a.



3. Notice of the commencement of this action has been given to the State of Illinois as required by Section 113 of the CAA, 42 U.S.C. § 7413.

## **II. APPLICABILITY**

4. The obligations of this Consent Decree apply to and are binding upon the United States and upon Rentech and its officers, employees, agents, subsidiaries, successors, assigns, and other entities or persons otherwise bound by law.

5. No transfer of ownership or operation of the Facility, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Rentech of its obligations to ensure that the terms of this Consent Decree are implemented. At least 30 Days prior to such transfer, Rentech shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to EPA, the United States Attorney for the Northern District of Illinois, and the United States Department of Justice, in accordance with Section XIV of this Consent Decree (Notices). Any attempt to transfer ownership or operation of the Facility without complying with this Paragraph constitutes a violation of this Consent Decree.

6. Rentech shall provide a copy of this Consent Decree to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Consent Decree, as well as to any contractor retained to perform work required under this Consent Decree. Rentech shall condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

### **III. DEFINITIONS**

7. Terms used in this Consent Decree that are defined in the CAA or in federal and state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise provided in this Consent Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

- a. “CEMS” or “Continuous Emission Monitoring System” shall mean the total equipment, required under the CEMS Plan attached as Appendix A to this Consent Decree, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters specified in the CEMS Plan;
- b. “CEMS Plan” shall mean the CEMS Plan for the Facility that is attached as Appendix A;
- c. “Complaint” shall mean the Complaint filed by the United States in this action;
- d. “Consent Decree” or “Decree” shall mean this Consent Decree and all appendices attached hereto, but in the event of any conflict between the text of this Consent Decree and any Appendix, the text of this Consent Decree shall control;
- e. “Day” shall mean a calendar day unless expressly stated to be a working day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day;
- f. “Effective Date” shall have the meaning given in Section XV;
- g. “Facility” shall mean Rentech’s #1 Nitric Acid Production Plant located at 16675 US Highway 20 W, East Dubuque, Illinois 61025, which is the only process unit

covered by this Consent Decree and does not include vessel #162-ME-01-0205 which supplies ammonia to multiple process units located at 16675 US Highway 20W, East Dubuque, Illinois 61025;

h. "Interest" shall mean the interest rate set forth in 28 U.S.C. § 1961;

i. "Long-Term NO<sub>x</sub> Limit" shall mean a 365-day rolling average NO<sub>x</sub> emission limit (rolled daily) expressed as pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (lb/ton); compliance with the Long-Term NO<sub>x</sub> Limit shall be calculated in accordance with the CEMS Plan attached to this Consent Decree as Appendix A. The Long-Term NO<sub>x</sub> Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction;

j. "Malfunction" shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in whole or in part by poor maintenance or careless operation;

k. "Month" shall mean calendar month;

l. "NSPS" shall mean the standards of performance for new stationary sources codified at 40 C.F.R. Part 60. General NSPS requirements are codified at 40 C.F.R. Part 60, Subpart A. NSPS requirements specifically for Nitric Acid Plants are codified at 40 C.F.R. Part 60, Subpart G;

m. "NSPS NO<sub>x</sub> Limit" shall mean the NO<sub>x</sub> emission limitation of 1.5 kg per metric ton of 100% Nitric Acid Produced (3 lb per ton) at 40 C.F.R. § 60.72(a)(1);

n. “100% Nitric Acid Produced” shall mean the quantity of nitric acid product manufactured by a Nitric Acid Plant multiplied by the concentration of actual nitric acid in the product. For example, if a Nitric Acid Plant produces 100 tons of a 54% nitric acid product, this equals 54 tons of 100% Nitric Acid;

o. “Nitric Acid Plant” shall mean a process unit engaged in the production of nitric acid through the catalytic oxidation of ammonia;

p. “NO<sub>x</sub>” shall mean consistent with 40 C.F.R. § 60.2, all oxides of nitrogen except nitrous oxide (N<sub>2</sub>O). For the purposes of calculating mass emission rates, NO<sub>x</sub> has a molecular weight of 46.0055 lb/lb-mol;

q. “Operating Periods” shall mean periods during which the Facility is producing nitric acid and NO<sub>x</sub> is emitted. Operating periods begin at the initiation of startup, and completion of shutdown, and include all periods of malfunction;

r. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral;

s. “Parties” shall mean the United States and Rentech;

t. “PSD” shall mean the Prevention of Significant Deterioration requirements at Part C of Subchapter I of the CAA, 42 U.S.C. §§ 7470-7492, and the implementing regulations at 40 C.F.R. Part 52;

u. “Rentech” shall mean Rentech Nitrogen, LLC, successor to Rentech Energy Midwest Corporation;

v. “Section” shall mean a portion of this Consent Decree identified by a Roman numeral;

w. “Short-Term NO<sub>x</sub> Limit” shall mean a 3-hour rolling average NO<sub>x</sub> emission limit (rolled hourly) expressed in terms of pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (lb/ton); compliance with the Short-Term NO<sub>x</sub> Limit shall be calculated in accordance with the CEMS Plan attached to this Consent Decree as Appendix A. The Short-Term NO<sub>x</sub> Limit does not apply during periods of Startup, Shutdown, or Malfunction;

x. “Shutdown” shall mean the cessation of operation of the nitric acid production operations of the Facility for any reason. Shutdown begins at the time the feed of ammonia to the Facility ceases and ends the earlier of 3 hours later or cessation of feed of compressed air to the Facility;

y. “Startup” shall mean the process of initiating nitric acid production operations of the Facility. Startup begins 1 hour prior to the initiation of the feed of ammonia to the Facility and ends no more than 5 hours after such initiation of the feed of ammonia to the Facility;

z. “Time” shall mean, with respect to the collection of data by the CEMS, Central Standard Time year round;

aa. “Title V Permit” shall mean a permit required by or issued pursuant to the requirements of 42 U.S.C. §§ 7661-7661f, and the implementing regulations at 40 C.F.R. Part 70;

bb. “Ton” or “tons” shall mean short ton or short tons. One Ton equals 2000 pounds; and

cc. “U.S. EPA” or “EPA” shall mean the United States Environmental Protection Agency or any successor department, agency, or entity.

#### **IV. COMPLIANCE REQUIREMENTS**

##### **A. NO<sub>x</sub> Emission Limits and Schedule of Compliance**

8. By no later than November 1, 2012, Rentech shall comply with the following NO<sub>x</sub> emission requirements at the Facility:

- a. Short-Term NO<sub>x</sub> Limit: 1.0 lb/ton.
- b. Long-Term NO<sub>x</sub> Limit: 0.60 lb/ton.

9. Rentech shall commence monitoring its NO<sub>x</sub> emissions from the Facility no later than November 1, 2012, in accordance with the CEMS Plan, but shall have until November 1, 2013, to demonstrate compliance with the Long-Term NO<sub>x</sub> Limit.

##### **B. NSPS Applicability**

10. The Facility is an affected facility for purposes of the NSPS, 40 C.F.R. Part 60, Subpart G. At the Facility, Rentech shall comply with all applicable requirements for affected facilities under the NSPS 40 C.F.R. Part 60, Subparts A and G, as in effect on the date the Consent Decree is executed by Rentech, or with the requirements of this Consent Decree (if more stringent).

11. **Best Practices.** At all times after the Effective Date of this Consent Decree, including periods of Startup, Shutdown, and Malfunction, Rentech shall to the extent practicable maintain and operate the Facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, consistent with 40 C.F.R. § 60.11(d).

##### **C. Emissions Monitoring**

12. **Installation, Certification, and Calibration.** By no later than the date set forth in Paragraph 15, Rentech shall install, certify, and calibrate a NO<sub>x</sub> continuous emissions monitoring

system (CEMS) capable of measuring the NO<sub>x</sub> emissions at the Facility. At the Facility, Rentech shall install analyzers to measure NO<sub>x</sub> concentration and stack volumetric flow rate. The NO<sub>x</sub> concentration analyzers shall comply with 40 C.F.R. Part 60, Appendix B, Performance Specification 2. The stack volumetric flow rate analyzer shall comply with 40 C.F.R. Part 60, Appendix B, Performance Specification 6. Both analyzers shall comply with the quality assurance/quality control requirements specified in 40 C.F.R. Part 60, Appendix F.

13. Continuous Operation of CEMS and Minimization of CEMS Downtime. After the applicable date set forth in Paragraph 15, and except during CEMS breakdowns, analyzer malfunctions, repairs, and required quality assurance or quality control activities (including calibration checks, and required zero and span adjustments), the CEMS on the Facility shall be in continuous operation during all Operating Periods to demonstrate compliance with the NO<sub>x</sub> emission limits established in Section IV.A of this Consent Decree. Rentech shall take all steps necessary to minimize CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs to the equipment.

14. NO<sub>x</sub> CEMS Plan. By and after the date set forth in Paragraph 15, Rentech shall implement the CEMS Plan in Appendix A at the Facility. Appendix A includes the CEMS Plan that describes how Rentech shall monitor compliance with the NO<sub>x</sub> emission limits established in Section IV.A of this Consent Decree, including the methodology required to demonstrate compliance in the event of CEMS downtime. EPA has approved the monitoring methods specified in the CEMS Plan as appropriate alternative monitoring methods for purposes of NSPS, pursuant to 40 C.F.R. § 60.13(i), for the Facility.

**D. Performance Testing**

15. Dates. Rentech shall conduct the performance tests required in this Section IV.D by no later than November 1, 2012.

16. NO<sub>x</sub> Emission Limits. Rentech shall conduct a performance test measuring the emission rate of NO<sub>x</sub> in accordance with the applicable requirements of 40 C.F.R. §§ 60.8, 60.73, 60.74, Part 60 Appendix A, and Part 60 Appendix B. This test shall consist of at least nine method test runs and may serve as the CEMS relative accuracy test required under Performance Specification 2 in Part 60 Appendix B. Rentech shall take all steps necessary to assure accurate measurements of 100% Nitric Acid Production during each test run.

17. Conversion Factor. In each performance test required under Paragraph 16 of this Consent Decree, Rentech shall establish a conversion factor for the purpose of converting monitoring data, in terms of NO<sub>x</sub> concentration, into terms of mass of NO<sub>x</sub> per unit of acid production consistent with 40 C.F.R. § 60.73(b). Subsequently, Rentech shall reestablish the conversion factor during each Relative Accuracy Test Audit conducted in accordance with 40 C.F.R. Part 60, Appendix F.

18. Advance Notification. By no later than 30 Days before any performance test required by this Section IV.D is conducted, Rentech shall provide notice, in the manner set forth in Section XIV (Notice), of its intent to conduct such test to EPA. This notification must include the scheduled date of the test, an emissions test protocol, a description of the planned operating rate and operating conditions, and the procedures that will be used to measure 100% Nitric Acid Production. If EPA identifies any adjustments required for the testing protocol or operating conditions, EPA shall notify Rentech, in writing, a minimum of 7 Days prior to the performance test date. Rentech shall make such adjustments and conduct the performance test in conformity



with EPA's requirements or submit the issue(s) for resolution under the dispute resolution provisions (Section X) of this Consent Decree.

19. Report of Results. By no later than 60 Days after conducting a performance test required under this Section IV.D, Rentech shall submit to EPA, in the manner set forth in Section XIV (Notices), a report documenting the results of the performance tests.

**E. Operation and Maintenance Plan**

20. By no later than October 1, 2012, Rentech shall prepare and submit to EPA, in the manner set forth in Section XIV (Notices), an Operation and Maintenance Plan (O&M Plan) for the Facility. EPA may provide comments and/or recommendations with respect to the O&M Plan.

21. The O&M Plan shall describe the operating and maintenance procedures necessary to: (i) minimize the frequency of Shutdowns (thereby reducing the number of Startups); and (ii) at all times, including during periods of Startup, Shutdown, and Malfunction, maintain and operate the Facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. This Paragraph and the O&M Plan is not intended to prevent or hinder Rentech from shutting down the Facility for voluntary reasons that are unrelated to operation and maintenance.

22. By the date on which the O&M Plan is submitted, but no later than October 1, 2012, Rentech shall implement the O&M Plan. At least once every three years, Rentech shall review, and update as necessary, the O&M Plan.

**V. PERMITS**

23. Permits Prior to Construction or Installation. Rentech shall obtain all required

federal, state and local permits necessary for performing any compliance obligation under this Consent Decree, including without limitation permits for construction of pollution control technology and the installation of equipment at the Facility. Rentech may seek relief under the provisions of Section IX (Force Majeure) of this Consent Decree for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation if Rentech has submitted timely and complete applications and has taken all other actions necessary to obtain such permit(s) or approval(s).

24. Applications for Permits Incorporating the Limits in Section IV.A. By no later than the date set forth in Paragraph 25, Rentech shall submit to the State of Illinois permitting authority a complete application to incorporate the following requirements into a federally enforceable minor or major New Source Review (NSR) permit(s) or other federally-enforceable permits (other than Title V permits):

- a. The limits for NO<sub>x</sub> emissions and the requirements established in Section IV.A of this Consent Decree; and
- b. The monitoring requirements established in the CEMS Plan.

25. Dates for Permit Applications. Rentech shall submit the permit applications required in Paragraph 24 by December 1, 2012.

26. Following submission of the complete permit application, Rentech shall cooperate with the State of Illinois by promptly submitting all available information that the State of Illinois seeks following its receipt of the permit materials.

27. Title V or Other Operating Permits: Emission Limits and Standards. This Consent Decree shall not terminate until the requirements set forth in this Paragraph are

incorporated into a Title V operating permit for the Facility. Therefore, during the duration of this Consent Decree, Rentech shall file all applications necessary to incorporate the following Consent Decree requirements into the operating permits for the Facility in accordance with state rules, including applicable administrative amendment provisions of such rules:

a. The limits for NO<sub>x</sub> emissions established in Section IV.A of this Consent Decree;

b. A requirement that the NO<sub>x</sub> emission limits shall not be relaxed; and

c. The monitoring requirements established in the CEMS Plan.

28. Requirements incorporated into Title V operating permits pursuant to Paragraph 27 shall survive termination of this Consent Decree.

29. For any permit application required by this Section V that is filed after the Effective Date of this Consent Decree, Rentech shall submit to EPA in the manner set forth in Section XIV (Notices) a copy of each application, as well as a copy of any permit proposed as a result of such application, to allow for timely participation in any public comment opportunity. If, as of the Effective Date, Rentech already has received any permit necessary to implement the requirements of this Consent Decree, then no later than 30 Days after the Effective Date, Rentech shall submit copies of such permits to EPA in the manner set forth in Section XIV (Notices). EPA may excuse in writing all or part of the latter submissions if copies of such permits have already been submitted prior to the Effective Date.

30. Emission Credit Generation. Rentech shall not use any NO<sub>x</sub> emission reductions resulting from any projects conducted pursuant to this Consent Decree for the purpose of obtaining netting credits or offsets in any PSD, major NSR, and/or minor NSR permit or permit

proceeding, and shall not buy, sell or trade any emission reductions; provided however, that nothing in this Consent Decree is intended to prohibit Rentech from:

- a. Using netting reductions or emission offset credits from the Facility covered by this Consent Decree to the extent that the proposed netting reductions or emission offset credits represent the difference between the emission limits set forth in this Consent Decree and the more stringent emission limits that Rentech may elect to accept for these units in a permitting process;
- b. Using netting reductions or emissions offset credits from units that are not subject to an emission limitation under this Consent Decree; and/or
- c. Using netting reductions or emissions offset credits for any pollutants other than NO<sub>x</sub>.

31. Baseline Actual Emissions. For the purposes of calculating baseline actual emissions as defined in the PSD or NSR rules, in any PSD, major NSR, and/or minor NSR permit or permit proceeding for the Facility, the emission rate of NO<sub>x</sub> during any 24-month period selected by Rentech shall be adjusted downward to exclude any emissions that would have exceeded the Long-Term NO<sub>x</sub> Limit established under this Consent Decree had the Facility been required to comply with the Long-Term NO<sub>x</sub> Limit during the consecutive 24-month period.

## **VI. REPORTING REQUIREMENTS**

32. Information Documenting how Compliance will be Achieved. By no later than November 1, 2011, or 30 Days after the Effective Date of this Consent Decree, whichever is later, Rentech shall submit, in the manner set forth in Section XIV (Notices), information

(including, if applicable, preliminary design specifications) documenting how Rentech intends to comply with the emission limitations set forth in Section IV.A.

33. Semi-Annual Reports: Contents. Rentech shall submit, in the manner set forth in Section XIV (Notices), a semi-annual progress report no later than February 28 and August 31 of each year, with the first semi-annual report due on February 28, 2012. Each semi-annual report shall contain the following information with respect to, respectively, the half-year between July 1 and December 31, or the half-year between January 1 and June 30:

- a. Work performed and progress made toward implementing the requirements of Section IV of this Consent Decree;
- b. Any significant modifications to previously-submitted design specifications of any pollution control system, or to monitoring equipment, required to comply with the requirements of Section IV of this Consent Decree;
- c. Any significant problems encountered or anticipated in complying with the requirements of Section IV of this Consent Decree;
- d. A summary of the emissions monitoring and testing data collected to demonstrate compliance with a requirement of this Consent Decree;
- e. On and after the Compliance Dates for the Short-Term Limit, a description of all periods of Startup, Shutdown, and Malfunction, including quantity of NO<sub>x</sub> emitted during such periods and the causes of Malfunctions;
- f. On and after the Compliance Dates for the Short-Term Limit, all information required to be reported in the applicable CEMS Plan;
- g. Status of permit applications and a summary of all permitting activity pertaining to compliance with this Consent Decree;

h. Any reports to the State of Illinois pertaining to compliance with this Consent Decree; and

j. After submission of the O&M Plan specified in Paragraph 20 of this Consent Decree, a description of any changes or updates made to such Plan.

34. Notification of Potential Non-Compliance. If Rentech violates, or has reason to believe that it may violate, any requirement of this Consent Decree or of any applicable permit, Rentech shall notify the United States of such violation or potential violation and its duration or anticipated likely duration, in writing, within 30 calendar Days of the day Rentech first becomes aware of the violation or potential violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Rentech shall so state in the report. Rentech shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 days of the day Rentech becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Rentech of its obligation to provide the notice required by Section IX of this Consent Decree (Force Majeure).

35. Imminent Threat. Whenever any violation of this Consent Decree or of any applicable permits or any other event affecting Rentech's performance under this Consent Decree, or the performance of the Facility, may pose an immediate threat to the public health or welfare or the environment, Rentech shall notify EPA orally or by electronic or facsimile transmission as soon as possible, but no later than 24 hours after Rentech first knew of, or should have known of, the violation or event. This procedure is in addition to the requirements set forth

in the preceding Paragraph, and is in addition to any other state or federal reporting requirement which may be applicable.

36. All reports shall be submitted to the persons and in the manner designated in Section XIV of this Consent Decree (Notices).

37. Each report submitted by Rentech under this Section shall be signed by a plant manager, a corporate official responsible for environmental management and compliance, or a corporate official responsible for plant operations management of Rentech and shall include the following certification:

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

38. The reporting requirements of this Consent Decree do not relieve Rentech of any reporting obligations required by the CAA or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement. The reporting requirements of this Section are in addition to any other reports, plans, or submissions required by other Sections of this Consent Decree.

39. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law. All information and documents submitted by Rentech to the United States pursuant to this Consent Decree shall be subject to public inspection unless identified and

supported as confidential business information (CBI) in accordance with 40 C.F.R. Part 2.

Under no circumstances shall emissions data be identified or considered CBI.

## **VII. CIVIL PENALTY**

40. Within 30 Days after the Effective Date of this Consent Decree, Rentech shall pay the sum of \$108,000 as a civil penalty to the United States by FedWire Electronic Funds Transfer (EFT) to the U.S. Department of Justice in accordance with written instructions to be provided to Rentech following lodging of the Consent Decree, by the Financial Litigation Unit of the U.S. Attorney's Office for the Northern District of Illinois. At the time of payment, Rentech shall send a copy of the EFT authorization form and the EFT transaction record, together with a transmittal letter, which shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in United States v. Rentech Nitrogen, LLC., and shall reference the civil action number and DOJ # 90-5-2-1-09773/1, to the United States in the manner set forth in Section XIV of this Consent Decree (Notices), by email to acctsreceivable.CINWD@epa.gov, and by mail to:

EPA Cincinnati Finance Office  
26 Martin Luther King Drive  
Cincinnati, Ohio 45268

41. If any portion of the civil penalty due to the United States is not paid when due, Rentech shall pay Interest on the amount past due, accruing from the Effective Date through the date of payment, at the rate specified in 28 U.S.C. § 1961. Interest payment under this Paragraph shall be in addition to any stipulated penalty due.

42. Rentech shall not deduct any penalties paid under this Consent Decree pursuant to this Section or Section VIII (Stipulated Penalties) in calculating its federal or state or local income tax.



**VIII. STIPULATED PENALTIES**

43. Rentech shall be liable for stipulated penalties to the United States for violations of this Consent Decree as specified below, unless excused under Section IX (Force Majeure), or reduced or waived pursuant to Paragraph 53 of this Consent Decree. A violation includes failing to perform any obligation required by the terms of this Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

44. Late Payment of Civil Penalty. If Rentech fails to pay the civil penalty required to be paid under Section VII of this Consent Decree (Civil Penalty) when due, Rentech shall pay a Stipulated Penalty of \$1,000 per Day for each Day that the payment is late.

45. Short-Term NO<sub>x</sub> Limit as set forth in Paragraph 8. For each violation of the Short-Term NO<sub>x</sub> Limit, in any non-overlapping 3-hour period (*i.e.*, no more than eight violations in a single twenty-four hour period) on and after November 1, 2012, the Stipulated Penalty shall be:

| <u>Percentage Over the Limit</u> | <u>Penalty per Violation</u> |
|----------------------------------|------------------------------|
| 1 - 50%                          | \$250                        |
| 51 - 100%                        | \$500                        |
| Over 100%                        | \$750                        |

Where a violation of the Short-Term NO<sub>x</sub> Limit also violates the NSPS NO<sub>x</sub> Limit, the provisions of this Stipulated Penalty paragraph shall apply.

46. Long-Term NO<sub>x</sub> Limit as set forth in Paragraph 8. For each violation, per day, of the Long-Term NO<sub>x</sub> Limit, the stipulated penalty shall be as follows:

| <u>Period of Noncompliance</u>   | <u>Penalty per violation per day</u> |
|----------------------------------|--------------------------------------|
| 1st - 14th day                   | \$1000                               |
| 15th - 30th day                  | \$1500                               |
| 31st day and each day thereafter | \$2000                               |

47. Emissions Monitoring. For each violation of any of the requirements of Paragraphs 12 - 14 and the CEMS Plan, the Stipulated Penalty shall be as follows:

| <u>Period of Noncompliance</u>   | <u>Penalty per violation per day</u> |
|----------------------------------|--------------------------------------|
| 1st - 14th day                   | \$1500                               |
| 15th - 30th day                  | \$2000                               |
| 31st day and each day thereafter | \$2500                               |

48. Performance Testing. For each violation of any of the requirements of Paragraphs 15 - 19, the Stipulated Penalty shall be as follows:

| <u>Period of Noncompliance</u>   | <u>Penalty per violation per day</u> |
|----------------------------------|--------------------------------------|
| 1st - 14th day                   | \$1000                               |
| 15th - 30th day                  | \$1500                               |
| 31st day and each day thereafter | \$2000                               |

49. Permitting Requirements. For each violation of any of the requirements of Paragraphs 23 - 31, the Stipulated Penalty shall be as follows:

| <u>Period of Noncompliance</u> | <u>Penalty per violation per day</u> |
|--------------------------------|--------------------------------------|
| 1st - 14th day                 | \$1000                               |
| 15th - 30th day                | \$1500                               |

31st day and each day thereafter \$2000

50. Reporting Requirements. For each violation of any of the requirements of Paragraphs 32 - 37, the Stipulated Penalty shall be as follows:

| <u>Period of Noncompliance</u>   | <u>Penalty per violation per day</u> |
|----------------------------------|--------------------------------------|
| 1st - 14th day                   | \$150                                |
| 15th - 30th day                  | \$250                                |
| 31st day and each day thereafter | \$500                                |

51. All Others. For each failure to comply with any requirement of this Consent Decree not specifically referenced in Paragraphs 43 - 50 or of any plan or schedule approved under this Consent Decree within the specified time established by or approved under this Consent Decree, the Stipulated Penalty shall be as follows:

| <u>Period of Noncompliance</u>   | <u>Penalty per violation per day</u> |
|----------------------------------|--------------------------------------|
| 1st - 14th day                   | \$150                                |
| 15th - 30th day                  | \$250                                |
| 31st day and each day thereafter | \$500                                |

52. Rentech shall pay stipulated penalties upon written demand by the United States.

53. Waiver of Payment. After consultation, the United States may, in its unreviewable discretion, waive payment of any portion or all of the stipulated penalties that may be due to it under this Consent Decree.

54. Demand for Stipulated Penalties. A written demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates; the stipulated penalty amount that the United States is demanding for each violation (as can be best

estimated); the calculation method underlying the demand; and the grounds upon which the demand is based.

55. Stipulated Penalties' Accrual. Stipulated penalties will begin to accrue on the day after performance is due or the day a violation occurs, whichever is applicable, and will continue to accrue until performance is satisfactorily completed or the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

56. Stipulated Penalties Payment Due Date. Stipulated penalties shall be paid no later than 30 Days after receipt of a written demand by the United States unless the demand is disputed through compliance with the requirements of Section X (Dispute Resolution) of this Consent Decree.

57. Manner of Payment of Stipulated Penalties. Stipulated penalties owing to the United States shall be paid in the manner set forth in Paragraph 40, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid.

58. Disputes over Stipulated Penalties. Stipulated penalties shall continue to accrue as provided in Paragraph 55, during any Dispute Resolution, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of the United States that is not appealed to the Court, Rentech shall pay accrued penalties determined to be owing, together with Interest, to the United States within 30 Days of the effective date of the agreement or the receipt of the United States' decision or order.

b. If the dispute is appealed to the Court and the United States prevails in whole or in part, Rentech shall pay all accrued penalties determined by the Court to be

owing, together with Interest, within 60 Days of receiving the Court's decision or order, except as provided in subparagraph c, below.

c. If any Party appeals the District Court's decision, Rentech shall pay all accrued penalties determined to be owing, together with Interest, within 15 Days of receiving the final appellate court decision.

59. No amount of the stipulated penalties paid by Rentech shall be used to reduce its federal or state tax obligations.

60. If Rentech fails to pay stipulated penalties according to the terms of this Consent Decree, Rentech shall be liable for Interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States from seeking any remedy otherwise provided by law for Rentech's failure to pay any stipulated penalties.

61. Subject to the provisions of Section XII of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for a violation of this Consent Decree or applicable law. If the violations of the Long-Term NO<sub>x</sub> Limit at the Facility result in excess NO<sub>x</sub> emissions greater than one ton of NO<sub>x</sub> as determined based on a 365-day rolling average (rolled daily), then the United States may elect to seek compensatory emissions reductions equal to or greater than the excess NO<sub>x</sub> amounts emitted at the Facility in addition to injunctive relief or stipulated penalties. Where a violation of this Consent Decree also is a violation of Subparts A or G of the NSPS or of the PSD requirements, Rentech shall be allowed a credit for any stipulated penalties paid against any statutory penalties imposed for such violation.

#### **IX. FORCE MAJEURE**

62. "Force Majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Rentech, of any entity controlled by Rentech, or of Rentech's contractors, which delays or prevents the performance of any obligation under this Consent Decree despite Rentech's best efforts to fulfill the obligation. The requirement that Rentech exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. "Force Majeure" does not include Rentech's financial inability to perform any obligation under this Consent Decree.

63. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, Rentech shall provide notice orally or by electronic or facsimile transmission to the United States and EPA individuals listed in Section XIV (Notices) within 120 hours of when Rentech first knew that the event might cause a delay. Within 7 Days thereafter, Rentech shall provide in writing to United States and EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Rentech's rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of Rentech, such event may cause or contribute to an endangerment to public health, welfare or the environment. Rentech shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall

preclude Rentech from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Rentech shall be deemed to know of any circumstance of which Rentech, any entity controlled by Rentech, or Rentech's contractors knew or should have known.

64. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. EPA will notify Rentech in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

65. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify Rentech in writing of its decision.

66. If Rentech elects to invoke the dispute resolution procedures set forth in Section X (Dispute Resolution), it shall do so no later than 15 Days after receipt of EPA's notice. In any such proceeding, Rentech shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Rentech complied with the requirements of Paragraphs 62 and 63, above. If Rentech carries this burden, the delay at issue shall be deemed not to be a violation by Rentech of the affected obligation of this Consent Decree identified to EPA and the Court.

**X. DISPUTE RESOLUTION**

67. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. Rentech's failure to seek resolution of a dispute under this Section shall preclude Rentech from raising any such issue as a defense to an action by the United States to enforce any obligation of Rentech arising under this Consent Decree.

68. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Rentech sends the United States a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 20 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States shall be considered binding unless, within 10 Days after the conclusion of the informal negotiation period, Rentech invokes formal dispute resolution procedures as set forth below.

69. Formal Dispute Resolution. Rentech shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Rentech's position and any supporting documentation relied upon by Rentech .

70. The United States shall serve its Statement of Position within 45 Days of receipt of Rentech's Statement of Position. The United States' Statement of Position shall include, but



need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States.

71. Rentech may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XIV of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 10 Days of receipt of the United States' Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Rentech's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

72. The United States shall respond to Rentech's motion within the time period allowed by the Local Rules of this Court. Rentech may file a reply memorandum, to the extent permitted by the Local Rules.

73. Standard of Review: Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 69, Rentech shall have the burden of demonstrating that its position complies with this Consent Decree and the CAA. The EPA reserves the right to argue based on applicable principles of administrative law that its position is reviewable only on the record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law.

74. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Rentech under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but

payment shall be stayed pending resolution of the dispute as provided in Paragraph 58. If Rentech does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section VIII (Stipulated Penalties).

#### **XI. INFORMATION COLLECTION AND RETENTION**

75. The United States, and its representatives, including attorneys, contractors, and consultants, shall have the right of entry into the Facility, at all reasonable times, upon presentation of credentials, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States in accordance with the terms of this Consent Decree;
- c. obtain samples and, upon request, splits of any samples taken by Rentech or its representatives, contractors, or consultants in connection with their performance under this Consent Decree;
- d. obtain documentary evidence, including photographs and similar data, relevant to compliance with the terms of this Consent Decree; and
- e. assess Rentech's compliance with this Consent Decree.

76. Rentech shall be entitled to obtain or receive from the United States (1) splits of samples collected under Paragraph 75.c. where feasible, and (2) copies of any sampling and analytical results, documentary evidence and data obtained by the United States and its representatives pursuant to Paragraph 75 of the Consent Decree.

77. Until at least 3 years after the termination of this Consent Decree, Rentech shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information in electronic form in its or its contractors' or agents'

possession or control, or that come into it or its contractors' or agents' possession or control, and that directly relate to Rentech's performance of its obligations under this Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, the United States may request copies of any documents, records, or other information required to be maintained under this Paragraph.

78. At the conclusion of the information retention period specified in the preceding Paragraph, Rentech shall notify the United States at least 90 Days prior to destroying any document(s), record(s), or other information subject to the requirements of the preceding Paragraph and, upon request by the United States, Rentech shall deliver any such document(s), record(s), or other information to the Plaintiff. Rentech may assert that certain documents, records, or other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Rentech asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Rentech. However, no documents, records, data, or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

79. Rentech may also assert that information required to be provided under this Section is protected as CBI under 40 C.F.R. Part 2. As to any information that Rentech seeks to protect as CBI, Rentech shall follow the procedures set forth in 40 C.F.R. Part 2.

80. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of Rentech to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

## **XII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS**

81. This Consent Decree resolves the civil claims of the United States for the violations alleged in the Complaint filed in this action through the date of lodging which include:

a. The claim alleged in Count I of the Complaint for violations arising from the construction of the Facility based on Part C of Subchapter I of the CAA, 42 U.S.C. §§ 7470-7492, and the implementing regulations at 40 C.F.R. § 52.21 or the equivalent Illinois SIP approved regulation;

b. The claim alleged in Count II of the Complaint for violations at the Facility of Section 111 of the CAA, 42 U.S.C. § 7411 and the implementing regulations at 40 C.F.R. Part 60, Subchapter G; and

c. The claim alleged in Count III of the Complaint for violations of Sections 502(a), 503 and 504(a) of the CAA, and the implementing regulations at 40 C.F.R. Part 70, arising from the failure to obtain permits containing applicable requirements triggered by the construction of the Facility.

82. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 81. This Consent Decree shall not be construed to limit the rights of the United States to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal or state laws,

regulations, or permit conditions, except as expressly specified in Paragraph 81. The United States further reserves all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, the Facility, whether related to the violations addressed in this Consent Decree or otherwise.

83. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, civil penalties, other appropriate relief relating to the Facility or Rentech's violations, Rentech shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 81 of this Section.

84. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. Rentech is responsible for achieving and maintaining complete compliance with all applicable federal, State, and local laws, regulations, and permits; and Rentech's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States does not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that Rentech's compliance with any aspect of this Consent Decree will result in compliance with provisions of the CAA, or with any other provisions of federal, State, or local laws, regulations, or permits.

85. This Consent Decree does not limit or affect the rights of Rentech or the United States against any third parties, not party to this Consent Decree, nor does it limit the rights of

third parties, not party to this Consent Decree, against Rentech, except as otherwise provided by law.

86. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not a party to this Consent Decree.

### **XIII. COSTS**

87. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States shall be entitled to collect the costs (including attorneys' fees), against Rentech incurred in any action necessary to enforce this Consent Decree or to collect any portion of the civil penalty or any stipulated penalties due but not paid by Rentech.

### **XIV. NOTICES**

88. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed to the (i) United States Department of Justice; and (ii) EPA Region 5. The contact information for the parties to the Consent Decree is set forth in Appendix B.

89. Any Party may, by written notice to the other Parties, change its designated notice recipient(s) or notice address(es) provided in Appendix B. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

### **XV. EFFECTIVE DATE**

90. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

#### **XVI. RETENTION OF JURISDICTION**

91. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Consent Decree, entering orders modifying this Consent Decree pursuant to Sections X and XVII, or effectuating or enforcing compliance with the terms of this Consent Decree.

#### **XVII. MODIFICATION**

92. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by the United States and Rentech, and filed with the Court as part of the record in this case. Where the modification constitutes a material change to any term of this Consent Decree, it shall be effective only upon approval by the Court.

#### **XVIII. TERMINATION**

93. After Rentech has maintained continuous satisfactory compliance with the requirements of the CAA and this Consent Decree for a period of one year after achieving compliance with all of the requirements of this Consent Decree, Rentech may serve upon the United States a Request for Termination, together with all necessary supporting documentation, stating that Rentech has satisfied those requirements including:

- a. demonstrating one year of compliance with the Short-Term NO<sub>x</sub> Limit and Long-Term NO<sub>x</sub> Limit in Section IV.A;
- b. applying for and obtaining all permits required by this Consent Decree;  
and
- c. Paying the civil penalty and any accrued stipulated penalties as required by this Consent Decree.

In the event that Rentech has satisfied the requirements in a. through c. above, except for the receipt of a Title V operating permit from the State of Illinois after applying for such permit, Rentech may serve on the United States a Request for Partial Termination of the Consent Decree. Partial termination of the Consent Decree shall terminate all requirements and obligations of this Consent Decree except those specified in Paragraphs 27 and 28. If the United States accepts Rentech's Request for Partial Termination, the remaining surviving requirements of the Consent Decree specified in Paragraphs 27 and 28 shall automatically terminate once the Title V operating permit is issued and becomes effective.

94. If the United States does not agree that the Consent Decree may be terminated, Rentech may invoke Dispute Resolution under Section X of this Consent Decree. However, Rentech shall not file such a motion until 90 Days after service of its Request for Termination. On any such motion, Rentech shall bear the burden of proving that the conditions necessary for termination or partial termination of the Consent Decree have been satisfied.

#### **XIX. PUBLIC PARTICIPATION**

95. This Consent Decree shall be lodged with the Court for a period of not less than 30 days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Rentech consents to entry of this Consent Decree without further notice.



**XX. SIGNATORIES/SERVICE**

96. Each undersigned representative of Rentech and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice (or his or her designee) certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

97. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis.

98. Rentech agrees not to oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree, unless the United States has notified Rentech in writing that it no longer supports entry of the Consent Decree.

99. The Parties agree to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons. The Parties further agree that Rentech need not file a responsive pleading to the Complaint in this action unless the United States withdraws its consent to this Consent Decree and/or the Court expressly declines to enter this Consent Decree as written by the Parties.

**XXI. INTEGRATION**

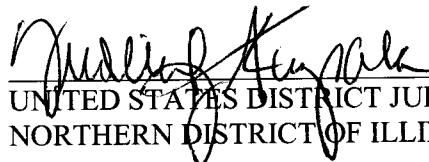
100. This Consent Decree and its Appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree and its Appendices and supersede all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. No other document, except for any plans or other deliverables that are submitted and approved pursuant to

this Consent Decree, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Consent Decree or the settlement it represents, and no such extrinsic document or statement of any kind shall be used in construing the terms of this Consent Decree.

**XXII. FINAL JUDGMENT**

101. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court in this action as to the United States and Rentech. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.


DATED this 10th day of February 2012  
~~2011.~~

  
UNITED STATES DISTRICT JUDGE  
NORTHERN DISTRICT OF ILLINOIS


WE HEREBY CONSENT to entry of the Consent Decree in United States v. Rentech Energy Midwest Corporation

FOR THE UNITED STATES OF AMERICA

Dated 11/29/2011

  
\_\_\_\_\_  
W. BENJAMIN FISHEROW  
Acting Chief  
Environmental Enforcement Section  
Environment and Natural Resources Division  
United States Department of Justice

Dated 11/29/2011

  
\_\_\_\_\_  
NIGEL COONEY  
Environmental Enforcement Section  
Environment and Natural Resources Division  
P.O. Box 7611  
Washington, D.C. 20044-7611  
(202) 514-3145 (tel)  
(202) 616-6584 (fax)  
Nigel.Cooney@usdoj.gov

PATRICK J. FITZGERALD  
United States Attorney for the  
Northern District of Illinois

JOHN MCKENZIE  
Assistant United States Attorney  
Northern District of Illinois  
211 South Court Street  
Rockford, Illinois 61101

WE HEREBY CONSENT to entry of the Consent Decree in United States v. Rentech Energy Midwest Corporation

Date: 11-17-11



SUSAN HEDMAN  
Regional Administrator  
U.S. Environmental Protection Agency  
Region 5

WE HEREBY CONSENT to entry of the Consent Decree in United States v. Rentech Energy Midwest Corporation

FOR RENTECH ENERGY MIDWEST CORPORATION

 9/26/2011  
JOHN A. AMBROSE

President  
Rentech Energy Midwest Corporation

**APPENDIX A****REMC NITRIC ACID PLANT CEMS PLAN****CEMS Plan for NO<sub>x</sub> Emissions****REMC****Nitric Acid Plant #1****Principle**

This CEMS Plan is the mechanism for determining compliance with the Short-Term NO<sub>x</sub> Limit and Long-Term NO<sub>x</sub> Limit applicable to Nitric Acid Plant #1 as specified in the Consent Decree and is used to evaluate the compliance status with the NSPS NO<sub>x</sub> limits. The methodology described in this CEMS Plan will provide a continuous indication of compliance with the above-referenced NO<sub>x</sub> emission limits established in the Consent Decree by accurately determining the emission rate in terms of pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced (lb/ton) as a rolling 3-hour average and a rolling 365-day average. The CEMS will utilize equipment to measure stack NO<sub>x</sub> concentration, the stack volumetric flow rate, and the 100% nitric acid production rate. From this data, real-time, accurate, and quality controlled measurements of the mass NO<sub>x</sub> emission rate per unit of production can be obtained.

**Definitions**

Terms used in this CEMS Plan that are defined in the Clean Air Act ("CAA") or in Federal or state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein. The following definitions specifically apply for purposes of this CEMS Plan.

- "CEMS" or "Continuous Emission Monitoring System" shall mean the total equipment, required under this CEMS Plan, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.
- "Day," "day," or "calendar day" shall mean a calendar day.
- "DSCFH" shall mean dry standard cubic feet per hour.
- "Gauze change" shall mean the periodic replacement of the catalyst gauze, which is normally changed every 110 – 130 Production days.
- "Long-Term NO<sub>x</sub> Limit" or "LTL" shall mean a 365-day rolling average NO<sub>x</sub> emission limit (rolled daily) expressed as pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced ("lb/ton"); compliance with the Long-Term NO<sub>x</sub> Limit shall be calculated in accordance with this CEMS Plan. The Long-Term NO<sub>x</sub> Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction.
- "Malfunction" shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in whole or in part by poor maintenance or careless operation.
- "NSPS NO<sub>x</sub> Limit" shall mean the NO<sub>x</sub> emission limit expressed as 1.5 kg of NO<sub>x</sub> per metric ton of 100% Nitric Acid Produced (3 lb per ton) specified at 40 C.F.R. § 60.72(a)(1).
- "NO<sub>x</sub>" shall mean, consistent with 40 C.F.R. § 60.2, all oxides of nitrogen except nitrous oxide (N<sub>2</sub>O). For the purposes of calculating mass emission rates, NO<sub>x</sub> has a molecular weight of 46.0055 lb/lb-mol.
- "NO<sub>x</sub> stack analyzer" shall mean that portion of the CEMS that senses NO<sub>x</sub> and generates an output proportional to the NO<sub>x</sub> concentration.
- "100% Nitric Acid" shall mean nitric acid product manufactured by a Nitric Acid Plant multiplied by the concentration of actual nitric acid in the product. For example, if a Nitric Acid Plant produces 100 tons of a 54% nitric acid product, this equals 54 tons of 100% Nitric Acid.

- "One-hour period" and "1-hour period" shall mean any 60-minute period commencing on the hour.
- "One-minute measurement" shall mean any single measurement or the arithmetic average of multiple measurements of a parameter during a one-minute period on-the-clock.
- "Operating Periods" shall mean periods during which Nitric Acid Plant #1 is producing nitric acid and NO<sub>x</sub> is emitted. Operating Periods begin at the initiation of Startup, end at the completion of Shutdown, and includes all periods of Malfunction.
- "Production rate analyzer" shall mean that portion of the CEMS that senses the mass of nitric acid produced, the concentration of nitric acid produced, and generates an output proportional to the 100% Nitric Acid produced in a given time period.
- "REMC" shall mean Rentech Energy Midwest Corporation.
- "Short-Term NO<sub>x</sub> Limit" or "STL" shall mean a 3-hour rolling average NO<sub>x</sub> emission limit (rolled hourly) expressed in terms of pounds of NO<sub>x</sub> emitted per ton of 100% Nitric Acid Produced ("lb/ton"); compliance with the Short-Term NO<sub>x</sub> Limit shall be calculated in accordance with this CEMS Plan. The Short-Term NO<sub>x</sub> Limit does not apply during periods of Startup, Shutdown, or Malfunction.
- "Shutdown" shall mean the cessation of nitric acid production operations of Nitric Acid Plant #1 for any reason. Shutdown begins at the time the feed of ammonia to Nitric Acid Plant #1 ceases and ends the earlier of 3 hours later or cessation of feed of compressed air to Nitric Acid Plant #1.
- "Stack flowmeter" shall mean that portion of the CEMS that senses the volumetric flow rate and generates an output proportional to that flow rate.
- "Standard Cubic Foot" or "SCF" shall mean a quantity of gas equal to one cubic foot at a temperature of 68° Fahrenheit and a pressure of 14.696 pounds per square inch absolute.
- "Startup" shall mean the process of initiating nitric acid production operations of Nitric Acid Plant #1. Startup begins 1 hour prior to the initiation of the feed of ammonia to Nitric Acid Plant #1 and ends no more than 5 hours after such initiation of the feed of ammonia.
- "Ton" or "tons" shall mean short ton or short tons. One Ton equals 2,000 pounds.

#### **Emissions Monitoring**

Emissions monitoring under this CEMS Plan will be done using a NO<sub>x</sub> stack analyzer and a stack flowmeter on Nitric Acid Plant #1. Except for periods of CEMS breakdowns, analyzer malfunctions, repairs, and required quality assurance or quality control activities (including calibration checks and required zero and span adjustments), REMC will conduct continuous monitoring pursuant to this CEMS Plan at Nitric Acid Plant #1 during all Operating Periods as follows:

- Once every minute, the NO<sub>x</sub> stack analyzer will measure the stack NO<sub>x</sub> concentration, in parts per million by volume, dry basis (ppmvd), the stack flowmeter will measure the volumetric flow rate in dry standard cubic feet per hour (DSCFH)<sup>1</sup> and the production rate analyzer will measure the tons of 100% nitric acid produced.
- For every 1-hour period (60-minute period commencing on the hour), the CEMS will reduce the one-minute measurements generated by the NO<sub>x</sub> stack analyzer and the stack flowmeter by taking the arithmetic average of all the one-minute measurements made during the previous 1-hour period. At least four one-minute measurements must be used to make this calculation.
- For every 1-hour period, the CEMS will calculate the hourly 100% nitric acid production rate by taking the sum of all the one-minute measurements made by the production rate analyzer during the previous 1-hour period. At least four one-minute measurements must be used to make this calculation. If less than sixty one-minute measurements are available in a 1-hour period, the hourly 100% nitric acid production rate will be determined on a *pro rata* basis.

<sup>1</sup> For the purposes of the calculations under this CEMS Plan, as-is volumetric flow rate measurements will be assumed to be dry. However, REMC may adjust for any moisture contained in the stack gas if Nitric Acid Plant #1 is equipped with a continuous moisture analyzer.

Backup Monitoring Procedure for Long-Term NO<sub>x</sub> Limit

In the event that the NO<sub>x</sub> stack analyzer, stack flowmeter, and/or production rate analyzer is/are not available or is/are out-of-control, REMC will implement the backup monitoring procedure specified below. The resulting data will be used to calculate the 365-day average NO<sub>x</sub> emission rate.

- a) REMC will comply with the following requirements to fill in data gaps in the array:
  - Exit stack gas will be sampled and analyzed for NO<sub>x</sub> at least once every three (3) hours, during all Operating Periods. Sampling will be conducted by making physical measurements of the NO<sub>x</sub> concentration in the gas stream to the main stack using alternative/non-CEMS methods (e.g., through the use of a portable analyzer/detector or non-certified NO<sub>x</sub> stack analyzer). The reading obtained will be substituted for the 180 (or less) one-minute measurements that would otherwise be utilized if the CEMS were operating normally. Alternatively, REMC may conduct the required sampling and analysis using a redundant certified NO<sub>x</sub> analyzer.
  - Stack volumetric flow rate will be estimated using engineering judgment.
  - 100% nitric acid production will be measured in 3-hour blocks based on ammonia feed or tank level changes.
- b) During required quality assurance or quality control activities (including calibration checks and required zero and span adjustments) of the CEMS and stack flowmeter, REMC may utilize either (1) the previous calendar day average when the previous day does not include a Startup, Shutdown, or Malfunction, or (2) the average of the block hour average immediately preceding the affected analyzer's(s') stoppage and the initial block hour average of the affected analyzer's(s') upon the resumption of operation following the stoppage, when the previous calendar day includes a Startup, Shutdown or Malfunction, to fill in any data gaps in lieu of the procedures specified in subparagraph a).
- c) If any one or more than one of the CEMS or stack flowmeter is/are not operating for a period of less than 24 consecutive hours due to breakdowns, malfunctions, repairs, or out-of-control period of the same, REMC may utilize either (1) the previous calendar day average when the previous day does not include a Startup, Shutdown, or Malfunction, or (2) the average of the block hour average immediately preceding the affected analyzer's(s') stoppage and the initial block hour average of the affected analyzer's(s') upon the resumption of operation following the stoppage, when the previous calendar day includes a Startup, Shutdown or Malfunction, to fill in any data gaps in lieu of the procedures specified in subparagraph a).

Conversion Factor

During each performance test for Nitric Acid Plant #1 required under Paragraph 16 of the Consent Decree, REMC will develop a conversion factor, in units of lb/ton of 100% Nitric Acid Produced per ppmvd consistent with 40 C.F.R. § 60.73(b). Subsequently, REMC will reestablish the conversion factors during each Relative Accuracy Test Audit conducted in accordance with 40 C.F.R. Part 60, Appendix F.

Emissions CalculationsRolling 3-Hour Average

Compliance with the Short-Term NO<sub>x</sub> Limit shall be based on a rolling 3-hour average (rolled hourly). For purposes of calculating a rolling 3-hour average NO<sub>x</sub> emission rate, the CEMS will maintain an array of the 3 most recent and contiguous 1-hour period average measurements of stack NO<sub>x</sub> concentration. Every hour, it will add the most recent 1-hour period values to the array and exclude



the oldest 1-hour period values. Data generated using the backup monitoring procedure, specified above, need not be included in this calculation. Any data generated during periods that are not Operating Periods will not be included in this calculation.

The rolling 3-hour average lb/ton NO<sub>x</sub> emission rate ( $E_{3hravg}$ ) will then be calculated every hour using Equation 1.

Equation 1:

$$E_{3hravg} = \frac{K \cdot \sum_{i=1}^3 C_{NOx i}}{3}$$

Where:

- $C_{NOx i}$  = Arithmetic average of all one-minute measurements of stack NO<sub>x</sub> concentration, parts per million by volume, dry basis (ppmvd) during 1-hour period "i"
- $K$  = Conversion factor determined during the most recent NO<sub>x</sub> performance test or RATA (lb/ton of 100% nitric acid produced per ppmvd).

$$E_{3hravg} = 3\text{-hour average lb NO}_x \text{ per ton 100\% Nitric Acid Produced}$$

#### Rolling 365-Day Average

Compliance with the Long-Term NO<sub>x</sub> Limit shall be based on a rolling 365-day average (rolled daily). For the purposes of calculating the 365-day average NO<sub>x</sub> emission rate each calendar day at Nitric Acid Plant #1, REMC will maintain an array of the mass emissions (lb/day) of NO<sub>x</sub> (calculated using Equation 2) and the 100% Nitric Acid Produced for that day (tons/day) and the preceding 364 days. Each subsequent day, the data from that day will be added to the array, and the data from the oldest day will be excluded.

For the purposes of calculating daily mass emission rate, the CEMS will maintain an array of each one-hour average NO<sub>x</sub> concentration (ppmvd) at the exit stack and each one-hour average volumetric flow rate (DSCFH) of the exit stack over each day. Any partial hourly data will be adjusted on a *pro-rata* basis. In the event that one or more of the CEMS and stack flowmeter is/are not available, REMC will use the backup monitoring procedure, specified above, to fill in the data gaps. Any data generated during periods that are not Operating Periods will not be included in this calculation.

Following each calendar day, the daily NO<sub>x</sub> mass emissions will be calculated using Equation 2.

Equation 2:

$$M_{NOx, Day} = 1.193 \times 10^{-7} \cdot \sum_{i=1}^n Q_{Stack i} \cdot C_{NOx i}$$

Where:

- $C_{NO_x i}$  = Arithmetic average of all one-minute measurements of stack  $NO_x$  concentration, parts per million by volume, dry basis (ppmvd) during 1-hour period "i"  
 $Q_{Stack i}$  = Arithmetic average of all one-minute measurements of stack volumetric flow rate, DSCFH during 1-hour period "i"  
 $1.193 \times 10^{-7}$  = Conversion factor in units of pounds per standard cubic foot (lb/SCF)  $NO_x$  per ppm  
 $M_{NO_x Day}$  = Mass emissions of  $NO_x$  during a calendar day, lb  
 $n$  = Number of hours of Operating Period in a calendar day

Following each calendar day, the  $NO_x$  emission rate as lb/ton, averaged over a rolling 365-day period ( $E_{365-Day Avg}$ ) will be calculated using Equation 3.

Equation 3:

$$E_{365-Day Avg} = \frac{\sum_{d=1}^{365} M_{NO_x Day d}}{\sum_{d=1}^{365} P_d}$$

Where:

- $M_{NO_x Day d}$  = Mass emissions of  $NO_x$  during a calendar day "d", lb  
 $P_d$  = 100% Nitric Acid Produced during a calendar day "d", tons  
 $E_{365-Day Avg}$  = 365-day rolling average lb  $NO_x$  per ton of 100% Nitric Acid Produced

**Rounding of Numbers resulting from Calculations**

Upon completion of the calculations, the final numbers shall be rounded as follows:

$E_{3hravg}$  : Rounded to the nearest tenth.

$E_{365-Day Avg}$  : Rounded to the nearest hundredth.

The numbers "5"-"9" shall be rounded up, and the numbers "1"-"4" shall be rounded down. Thus, "1.05" shall be rounded to "1.1", and "1.04" shall be rounded to "1.0".

**Compliance with Consent Decree NO<sub>x</sub> Limits****Short-Term NO<sub>x</sub> Limits**

The Short-Term NO<sub>x</sub> Limits do not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at Nitric Acid Plant #1, REMC will be in compliance with the Short-Term NO<sub>x</sub> Limit specified in the Consent Decree if  $E_{3hravg}$  does not exceed 1.0 lb of NO<sub>x</sub> per ton of 100% Nitric Acid Produced. If REMC contends that any 3-hour rolling average emission rate is in excess of 1.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period, REMC shall recalculate  $E_{3hravg}$  to exclude measurements recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether Nitric Acid Plant #1 would have been in compliance with the Short-Term Limit if the appropriate performance test or compliance procedure had been performed.

**NSPS NO<sub>x</sub> Limits**

The NSPS NO<sub>x</sub> Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at Nitric Acid Plant #1, REMC will be in compliance with the NSPS Limit if  $E_{3hravg}$  does not exceed 3.0 lb of NO<sub>x</sub> per ton of 100% Nitric Acid Produced. If REMC contends that any 3-hour rolling average emission rate is in excess of 3.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period, REMC shall recalculate  $E_{3hravg}$  to exclude measurements recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether Nitric Acid Plant #1 would have been in compliance with the NSPS NO<sub>x</sub> Limit if the appropriate performance test or compliance procedure had been performed.

**Long-Term NO<sub>x</sub> Limits**

REMC will be in compliance with the Long-Term NO<sub>x</sub> Limit specified in the Consent Decree if  $E_{365-Day Avg}$  does not exceed 0.60 lb of NO<sub>x</sub> per ton of 100% Nitric Acid Produced. The Long-Term NO<sub>x</sub> Limit applies during all Operating Periods, including during periods of Startup, Shutdown, or Malfunction.

**Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction**

REMC will retain all data generated by the NO<sub>x</sub> analyzer and stack flowmeter, including all data generated during Startup, Shutdown, and/or Malfunction ("SSM") at Nitric Acid Plant #1 in accordance with Section XI of the Consent Decree.

**Analyzer Specifications**

The NO<sub>x</sub> stack analyzers and the stack flowmeter required under this CEMS Plan at Nitric Acid Plant #1 will meet the following specifications:

**Table 1**

| Analyzer                        | Parameter                                  | Location | Span Value   |
|---------------------------------|--|----------|--|
| NO <sub>x</sub> Stack Analyzers | NO <sub>x</sub> , ppm by volume, dry basis | Stack    | Normal: 0 – 500 ppm NO <sub>x</sub><br>SSM: 0 – 5000 ppm NO <sub>x</sub> |
| Stack Flowmeter                 | Volumetric flow rate, SCFH                 | Stack    | 0 to 125% of the maximum expected volumetric flow rate                   |

The NO<sub>x</sub> stack analyzers will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, 40 C.F.R. Part 60, Appendix B, Performance Specification 2, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1. It should be noted, however, that the daily drift test requirement at 40 C.F.R. § 60.13(d) and the requirements of Appendix F apply only to the normal range of the NO<sub>x</sub> stack analyzers. The SSM range of the NO<sub>x</sub> stack analyzers will be evaluated at each normal gauge change to verify accuracy.

The stack flowmeters will meet 40 C.F.R. Part 60, Appendix B, Performance Specification 6 and will be evaluated at each normal gauge change and during the RATA of the NO<sub>x</sub> stack analyzers to verify accuracy.

100% nitric acid production rates measured by the production rate analyzer will be evaluated monthly in comparison to production rates measured through changes in tank volume and acid concentration and/or ammonia feed rates.

**Compliance with the NSPS: 40 C.F.R. Part 60, Subpart G**

In addition to the requirements in this CEMS Plan, REMC also will comply with all of the requirements of the NSPS relating to monitoring at Nitric Acid Plant #1 except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart G:

- The requirement at 40 C.F.R. § 60.73(a) that the NO<sub>x</sub> stack analyzers have a span value of 500 ppm. In lieu of this, REMC will utilize the span values specified in Table 1 of this CEMS Plan; and
- The requirement at 40 C.F.R. § 60.73(a) that pollutant gas mixtures under Performance Specification 2 and for calibration checks under 40 C.F.R. § 60.13(d) be nitrogen dioxide (NO<sub>2</sub>). REMC will use calibration gases containing NO and/or NO<sub>2</sub> as appropriate to assure accuracy of the NO<sub>x</sub> stack analyzers except where verified reference cells are used in accordance with Performance Specification 2.

**APPENDIX B**

Contact Information for the Parties to  
U.S. v. Rentech Nitrogen, LLC

Notice or submission to the United States:

Chief, Environmental Enforcement Section  
Environment and Natural Resources Division  
U.S. Department of Justice  
P.O. Box 7611 Ben Franklin Station  
Washington, DC 20044-7611  
Re: DOJ No. 90-5-2-1-09773/1

Notice or submission to EPA:

Air Enforcement Division Director  
U.S. Environmental Protection Agency  
Office of Civil Enforcement  
Air Enforcement Division  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave, NW  
Mail Code: 2242A  
Washington, DC 20460

and

Michelle Heger  
U.S. Environmental Protection Agency  
Region 5  
AE-17J  
77 West Jackson Blvd.  
Chicago, IL 60604

Including an electronic courtesy copy to:  
Heger.michelle@epa.gov

and

Cynthia A. King  
U.S. Environmental Protection Agency  
Region 5  
C-14J  
77 West Jackson Blvd.  
Chicago, IL 60640

Including an electronic courtesy copy to:  
King.cynthia@epa.gov

Notice or submission to Rentech Nitrogen, LLC:

John A. Ambrose, President  
Rentech Nitrogen, LLC  
P.O. Box 229  
East Dubuque, IL 61025-0229

Including an electronic courtesy copy to:  
JAmbrose@rnp.net

and

Philip G. Crnkovich, EHSS & QA Manager  
Rentech NitrogenEnergy Midwest Corporation  
P.O. Box 229  
East Dubuque, IL 61025-0229

Including an electronic courtesy copy to:  
PCRNKOVICH@rnp.net

and

Colin Morris, Secretary  
Rentech Nitrogen, LLC  
c/o Rentech, Inc.  
10877 Wilshire Boulevard, Suite 710  
Los Angeles, CA 90024

Including an electronic courtesy copy to:  
cmorris@rentk.com

# **Exhibit 6**

# ***Statement of Basis***

for the DRAFT CAAPP Permit for:

## **Source Name:**

**East Dubuque Nitrogen Fertilizers, LLC**

Statement of Basis No.: 96010003-1611

I.D. No.: 085809AAA

Permit No.: 96010003

Date Prepared: November 28, 2016

## Permitting Authority:

Illinois Environmental Protection Agency  
Bureau of Air, Permit Section  
217/785-1705

This Statement of Basis is being provided to USEPA and any interested parties as required by Section 39.5(8)(b) of the Illinois Environmental Protection Act.



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#### CHAPTER IV - DESCRIPTION OF THE CHANGES FROM PREVIOUSLY ISSUED CAAPP PERMITS

- 4.1 Major Changes Summary
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### ENDNOTES

## **PREFACE**

### **Reason For This Document**

This document is a requirement of the permitting authority in accordance with 502(a) of the Clean Air Act, 40 CFR 70.7(a)(5), and Section 39.5(8)(b) of the Illinois Environmental Protection Act. Section 39.5(8)(b) of the Illinois Environmental Protection Act states the following:

"The Agency shall prepare a ..... statement that sets forth the legal and factual basis for the Draft CAAPP permit conditions, including references to the applicable statutory or regulatory provisions."

### **Purpose Of This Document**

The purpose of this Statement of Basis is to provide discussion regarding the development of this Draft CAAPP Permit. This document would also provide the permitting authority, the public, the source, and the USEPA with the applicability and technical matters that form the basis of the Draft CAAPP Permit.

### **Summary Of Historical Actions Leading Up To Today's Permitting Action**

Since the initial CAAPP Permit issued on October 23, 2003, the source has also been issued the following: A Minor Modification on August 10, 2005.

### **Limitations**

This Statement of Basis is not enforceable and only sets forth the legal and factual basis for the Draft CAAPP Permit Conditions (Chapters I and II). Chapter III contains supplemental material that would assist in educating interested parties about this source and the Draft CAAPP Permit. The Statement of Basis does not shield the source from enforcement actions or its responsibility to comply with existing or future applicable regulations. Nor does the Statement of Basis constitute a defense to a violation of the Federal Clean Air Act or the Illinois Environmental Protection Act including implementing regulations.

This document does not purport to establish policy or guidance.

## INTRODUCTION

The Clean Air Act Permit Program (CAAPP) is the operating permit program established in Illinois for major stationary sources as required by Title V of the federal Clean Air Act and Section 39.5 of the Illinois Environmental Protection Act. The Title V Permit Program (CAAPP) is the primary mechanism to apply the various air pollution control requirements established by the Clean Air Act to major sources, defined in accordance with Title V of the Clean Air Act. The Draft CAAPP Permit contains conditions identifying the state and federal applicable requirements that apply to the source. The Draft CAAPP Permit also establishes the necessary monitoring and compliance demonstrations. The source must implement this monitoring to demonstrate that the source is operating in accordance with the applicable requirements of the permit. The Draft CAAPP Permit identifies all applicable requirements for the various emission units as well as establishes detailed provisions for testing, monitoring, recordkeeping, and reporting to demonstrate compliance with the Clean Air Act. Further explanations of the specific provisions of the Draft CAAPP Permit are contained in the following Chapters of this Statement of Basis.

The Illinois EPA has focused in on key elements of the permit that relate to the requirements of the CAAPP Program:

- Emissions of:
  - PM<sub>10</sub>/PM<sub>2.5</sub>
  - NO<sub>x</sub>
  - VOM
  - HAP

In addition, the Illinois EPA has committed substantial resources and effort in the development of an acceptable Statement of Basis (this document) that would meet the expectations of USEPA, Region 5. As a result, this document contains discussions that address applicability determinations, periodic monitoring, streamlining, prompt reporting, and SSM authorizations (as necessary). These discussions involve, where necessary, a brief description and justification for the resulting conditions and terms in this Draft CAAPP Permit. This document begins by discussing the legal basis for the contents of the Draft CAAPP Permit, moves into the factual description of the permit, and ends with supplemental information that has been provided to further assist with the understanding of the background and genesis of the permit content.

It is Illinois EPA's preliminary determination that this source's Permit Application meets the standards for issuance of a "Final" CAAPP Permit as stipulated in Section 39.5(10)(a) of the Illinois Environmental Protection Act (see Chapter I - Section 1.2 of this document). The Illinois EPA is therefore initiating the necessary procedural requirements to issue a Final CAAPP Permit. The Illinois EPA has posted the Draft CAAPP permit and this Statement of Basis on USEPA website:

<http://www.epa.gov/reg5oair/permits/ilonline.html>

## **CHAPTER I – LEGAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS**

### **1.1 Legal Basis for Program**

The Illinois EPA's state operating permit program for major sources established to meet the requirements of 40 CFR Part 70 are found at Section 39.5 of the Illinois Environmental Protection Act [415 ILCS 5/39.5]. The program is called the Clean Air Act Permitting Program (CAAPP). The underlying statutory authority is found in the Illinois Environmental Protection Act at 415 ILCS 5/39.5. The CAAPP was given final full approval by USEPA on December 4, 2001 (see 66 FR 62946).

### **1.2 Legal Basis for Issuance of CAAPP Permit**

In accordance with Section 39.5(10)(a) of the Illinois Environmental Protection Act, the Illinois EPA may only issue a CAAPP Permit if all of the following standards for issuance have been met:

- The applicant has submitted a complete and certified application for a permit, permit modification, or permit renewal consistent with Sections 39.5(5) and (14) of the Illinois Environmental Protection Act, as applicable, and applicable regulations (Section a. below);
- The applicant has submitted with its complete application an approvable compliance plan, including a schedule for achieving compliance, consistent with Section 39.5(5) of the Illinois Environmental Protection Act and applicable regulations (Section b. below);
- The applicant has timely paid the fees required pursuant to Section 39.5(18) of the Illinois Environmental Protection Act and applicable regulations (Section c. below); and
- The applicant has provided any additional information as requested by the Illinois EPA (Section d. below).

#### **a. Application Status**

The source submitted an application for a Renewal CAAPP Permit in January 22, 2008 and submitted an update to the application on January 1, 2016. The source is currently operating under an application shield resultant from a timely and complete renewal application submittal. This Draft CAAPP Permit addresses application content and necessary revisions to meet the requirements for issuance of the permit.

#### **b. Present Compliance Status**

At the time of this Draft CAAPP Permit, there were no pending State or Federal enforcement actions against the source; therefore, a Compliance Schedule is not required for this source. The source submitted an approvable Compliance Plan as part of its Certified Permit Application. The source has certified compliance with all applicable rules and regulations. In addition, the draft permit requires the source to certify its compliance status on an annual basis.

#### **c. Payment of Fees**

The source is current on payment of all fees associated with operation of the emission units.

**d. Additional Information**

The source provided all the necessary additional application material as requested by the Illinois EPA.

**1.3 Legal Basis for Conditions in the CAAPP Permit**

This industrial source is subject to a variety of Federal and SIP regulations, which are the legal basis for the conditions in this permit (see Sections a. and b. below). Also, the CAAPP provides the legal basis for additional requirements such as periodic monitoring, reporting, and recordkeeping. The following list summarizes those regulations that form the legal basis for the conditions in this Draft CAAPP Permit and are provided in the permit itself as the origin and authority.

**a. Applicable Federal Regulations**

This source operates emission units that are subject to the following Federal regulations.

40 CFR Part 60 - Subpart A, NSPS General Provisions  
40 CFR Part 60 - Subpart G, Standards of Performance for Nitric Acid Plants  
40 CFR Part 61 - Subpart M, Standard of Asbestos  
40 CFR Part 63 - Subpart A, NESHAP General Provisions  
40 CFR Part 63 - Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing  
40 CFR Part 63 - Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters  
40 CFR Part 63 - Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines  
40 CFR Part 65 - Subpart F, Equipment Leaks  
40 CFR Part 82 - Subpart F, Ozone Depleting Substances

**b. Applicable SIP Regulations**

This source operates emission units that are subject to the following SIP regulations:

35 IAC Part 201 - Permits And General Provisions  
35 IAC Part 212 - Visible And Particulate Matter Emissions  
35 IAC Part 214 - Sulfur Limitations  
35 IAC Part 215 - Organic Material Emission Standards And Limitations  
35 IAC Part 216 - Carbon Monoxide Emissions  
35 IAC Part 217 - Nitrogen Oxides Emissions  
35 IAC Part 244 - Episodes  
35 IAC Part 254 - Annual Emissions Report

**c. Other Applicable Require**

In addition to these SIP permit terms, there are also applicable requirements derived from a Consent Order issued to the source (see Chapter III Section 3.6).

The source also has several applicable requirements that are based on SIP approved permits, which are listed and identified in Chapter II Section 2.8.

**CHAPTER II – FACTUAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS****2.1 Source History**

There is no significant source history warranting discussion for this source.

**2.2 Description of Source**

SIC Code: 2873

County: Jo Daviess County

The source produces nitrogenous products that such as nitrogenous fertilizer. In addition, the source produces anhydrous ammonia along with nitric acid, urea, ammonium nitrate and urea ammonium nitrate. Carbon dioxide, a byproduct of ammonia synthesis, is recovered and sold commercially.

The source contains the following processes:

| <i>Emission Units</i> | <i>Description</i>  |
|-----------------------|---|
| SG-1                  | Sulfur Guard  |
| R-2                   | Secondary Reformer  |
| R-3                   | High Temperature Shift Convertor                              |
| R-4                   | Low Temperature Shift Convertor                               |
| T-1                   | Carbon Dioxide Absorber                                       |
| R-5                   | Methanator  |
| DC-20                 | Clark Suction Drum  |
| T-2                   | Hot Potassium Absorbent Regenerator                           |
| R-1                   | Primary Reformer (371.5 mmBtu/hr)                             |
| H-R4                  | Low Temperature Shift Convertor Startup Heater (3.5 mmBtu/hr) |
| H-R6                  | Ammonia Synthesis Convertor Startup Heater (26 mmBtu/hr)      |
| W-1A                  | Cooling Tower   |
| W-1B                  | Cooling Tower   |
| W-1C                  | Cooling Tower   |
| W-1D                  | Cooling Tower   |
| W-1E                  | Cooling Tower   |
| W-1F                  | Cooling Tower   |
| W-1G                  | Cooling Tower   |
| C-02A                 | Clark Compressor 5500 HP                                      |
| C-02B                 | Clark Compressor 5500 HP                                      |
| C-02C                 | Clark Compressor 5500 HP                                      |
| MR-25                 | Ammonia Safety Flare  |
| MR-25 Flare Pilot     | Ammonia Safety Flare Pilot                                    |
| MR-51                 | Flare   |
| MR-51 Pilot           | Flare Pilot   |
| UR-4A                 | Falling Film Evaporator                                       |
| UR-4B                 | Falling Film Evaporator                                       |
| D24                   | Curtain Granulator  |
| C39                   | Fluidized Bed Cooler  |
| G54                   | Dust Separator  |
| Tower 1               | Nitric Acid Plant 1, Tower 1                                  |
| Tower 2               | Nitric Acid Plant 2, Tower 2                                  |
| AN-1                  | Acid Neutralizer  |
| ME-01-0109A           | Nitric Acid Storage Tank #1                                   |
| ME-010109B            | Nitric Acid Storage Tank #2                                   |
| 062-D-1806            | Nitric Acid Storage Tank #3                                   |
| D-3602                | Nitric Acid Storage Tank #4                                   |
| D-3604                | Nitric Acid Storage Tank #4                                   |

|                       |                             |
|-----------------------|-----------------------------|
| D-3606                | Nitric Acid Storage Tank #6 |
| S-5                   | Boiler (70.5 mmBtu/hr)      |
| S-6                   | Boiler (48 mmBtu/hr)        |
| S-7                   | Boiler (170 mmBtu/hr)       |
| Gasoline Storage Tank | 881 Gallons                 |
| Diesel Storage Tank   |                             |

### 2.3 Single Source Status

Under both Section 39.5 of the Act and 40 CFR 52.21(b) (5), separate facilities can be considered a single stationary source for purposes of Title V and Prevention of Significant Deterioration (PSD), respectively, if they:

- a. belong to the same industrial grouping or operate as a support facility,
- b. are located on contiguous or adjacent properties, and
- c. are under common ownership or common control<sup>1</sup>.

#### 2.3.1

East Dubuque Nitrogen Fertilizers, LLC is not a single stationary source with the following facility:

- Tessenderlo Kerley, Inc (I.D. No. 085804AAE, located at 16677 US Highway 20 West, East Dubuque, IL)

#### 2.3.2

The rationale for not considering the Permittee and the above facility a single stationary source is as follows:

- a. Contiguous/Adjacent - The facilities reviewed have been considered to be contiguous or adjacent to each other because:

Properties are contiguous if they abut or touch each other. Properties are adjacent if they lie near or close to one another; they may or may not be abutting or touching but there cannot be anything of the same kind that intervenes or lies between the properties. Recent developments in federal case law indicate that adjacency must be defined in terms of physical proximity, not functionality.

- b. Ownership/Common Control - The facilities reviewed have not been considered to be under common ownership or common control because:

The facilities are not under common ownership in that the facilities are not dependent to the extent to constitute the existence of control.

- c. SIC Code/Support Function - The facilities reviewed have not been considered to have a support relationship between the facilities because

The facilities are not engaged in a support relationship (i.e., conveys, stores, or otherwise assists) to any significant extent, in the production of a principle product.

### 2.4 Ambient Air Quality Status for the Area

The source is located in an area that as of the date of permit issuance designated attainment or unclassifiable for the National Ambient Air Quality

Standards for all criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, PM<sub>2.5</sub>, PM<sub>10</sub>, sulfur dioxide). (See 40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes)

## 2.5 Source Status

The source requires a CAAPP permit because this source is considered major (based on its PTE) for the following regulated pollutants: PM<sub>10</sub>, PM<sub>2.5</sub>, nitrogen oxides (NO<sub>x</sub>), volatile organic material (VOM), carbon monoxide (CO), greenhouse gas (GHG), and hazardous air pollutant (HAP)

This source maintains synthetic minor limits for the following regulated pollutants: PM<sub>10</sub>, PM<sub>2.5</sub>, nitrogen oxides (NO<sub>x</sub>), volatile organic material (VOM), carbon monoxide (CO), and sulfur dioxide (SO<sub>2</sub>).

Based on available data, this source is a major source of emissions for GHG, because the estimated potential emissions of GHG that are more than 100 tons per year (mass) and 100,000 tons per year (CO<sub>2</sub>e). East Dubuque Nitrogen Fertilizers, LLC voluntarily submitted data for actual emissions of GHGs in its 2014 AER, reporting actual annual emissions of GHG of 693,586.17 tons per year.

This source is not currently subject to any "applicable requirements," as defined by Section 39.5(1) of the Act, for emissions of greenhouse gases (GHG) as defined by 40 CFR 86.1818-12(a), as referenced by 40 CFR 52.21(b)(49)(i). There are no GHG-related requirements under the Illinois Environmental Protection Act, Illinois' State Implementation Plan, or the Clean Air Act that apply to this facility, including terms or conditions in a Construction Permit addressing emissions of GHG or BACT for emissions of GHG from a major project at this facility under the PSD rules. In particular, the USEPA's Mandatory Reporting Rule for GHG emissions, 40 CFR Part 98, does not constitute an "applicable requirement" because it was adopted under the authority of Sections 114(a)(1) and 208 of the Clean Air Act. This permit also does not relieve the Permittee from the legal obligation to comply with the relevant provisions of the Mandatory Reporting Rule for this facility.

## 2.6 Annual Emissions

The following table lists annual emissions (tons) of criteria pollutants for this source, as reported in the Annual Emission Reports (AER) sent to the Illinois EPA:

| <i>Pollutant</i> | <i>2014</i> | <i>2013</i> | <i>2012</i> | <i>2011</i> | <i>2010</i> |
|------------------|-------------|-------------|-------------|-------------|-------------|
| CO               | 670.90      | 570.34      | 659.99      | 655.34      | 824.60      |
| NO <sub>x</sub>  | 482.18      | 485.55      | 422.63      | 586.15      | 789.18      |
| PM               | 101.51      | 93.11       | 103.61      | 93.94       | 80.17       |
| SO <sub>2</sub>  | 1.27        | 1.32        | 1.32        | 1.15        | 1.29        |
| VOM              | 41          | 32.91       | 38.28       | 329.02      | 515.10      |
| CO <sub>2E</sub> | 693,586.17  | 724,116.35  | 816,103.15  | 566,058.73  | 401,099.90  |
| HAP (top)        | -           | -           | -           | -           | 7.27        |

## 2.7 Fee Schedule

The following table lists the approved annual fee schedule (tons) submitted in the Source's permit application:

| <i>Pollutant</i>                | <i>Tons/Year</i> |
|---------------------------------|------------------|
| Volatile Organic Material (VOM) | 52.06            |



|                                |                    |         |
|--------------------------------|--------------------|---------|
| Sulfur Dioxide                 | (SO <sub>2</sub> ) | 1.62    |
| Particulate Matter             | (PM)               | 130.99  |
| Nitrogen Oxides                | (NO <sub>x</sub> ) | 837.82  |
| HAP, not included in VOM or PM | (HAP)              | 3.46    |
| Total                          |                    | 1025.95 |

## 2.8 SIP Permit Facts (T1 Limits)

CAAPP Permits must address all "applicable requirements," which includes the terms and conditions of preconstruction permits issued under regulations approved by USEPA in accordance with Title I of the CAA (See definition of applicable requirements in Section 39.5(1) of the Illinois Environmental Protection Act). Preconstruction permits, commonly referred to in Illinois as Construction Permits, derive from the New Source Review ("NSR") permit programs required by Title I of the CAA. These programs include the two major NSR permit programs: (1) the Prevention of Significant Deterioration ("PSD") program<sup>2</sup> and (2) the nonattainment NSR program.<sup>3</sup> These programs also encompass state construction permit programs for projects that are not major.

In the CAAPP or Illinois's Title V permit program, the Illinois EPA's practice is to identify requirements that are carried over from an earlier Title I permit into a New or Renewed CAAPP Permit as "TI" conditions (i.e., Title I conditions). Title I Conditions that are revised as part of their incorporation into a CAAPP Permit are further designated as "TIR." Title I Conditions that are newly established through a CAAPP Permit are designated as "TIN." It is important that Title I Conditions be identified in a CAAPP Permit because these conditions will not expire when the CAAPP Permit expires. Because the underlying authority for Title I Conditions comes from Title I of the CAA and their initial establishment in Title I Permits, the effectiveness of T1 Conditions derives from Title I of the CAA rather than being linked to Title V of the A. For "changes" to be made to Title I Conditions, they must either cease to be applicable based on obvious circumstances, e.g., the subject emission unit is permanently shut down, or appropriate Title I procedures must be followed to change the conditions.

- Previously Incorporated Construction Permits:

| Permit No. | Date Issued | Subject   |
|------------|-------------|---|
| 91070051   | 2/11/93     | Urea Granulating Plant  |
| 98020034   | 5/18/98     | Modification of the Ammonium Nitrate Neutralizer and Scrubber |
| 99010054   | 2/10/99     | Nitric Acid Storage   |
| 75050110   | 11/07/2003  | Urea Granulating Plant  |
| 88090042   | 11/29/1988  | Modification of Nitric Acid Plant #1                          |
| 97050064   | 11/07/2003  | Nitric Acid Plant   |

- Newly Issued Construction Permits:

| Permit No. | Date Issued | Subject   |
|------------|-------------|---|
| 11020024   | 3/31/2011   | Changes to NOx Control Technology for Clark Engines (removal of SCR addition of low-NOx emission combustion technology) |
| 11030025   | 6/4/12      | SCR System for Nitric Acid Plant #1 and incorporation of Consent Decree 11-CV-50358                                     |
| 11030041   | 4/26/11     | N <sub>2</sub> O Catalytic Converter  |
| 11050039   | 6/6/11      | Ammonia Plant Changes- installation of Cooling Tower  |
| 13100010   | 11/4/13     | Abatement Catalyst Bed for Nitric Acid Plant #2   |
| 14030058   | 7/3/14      | Replacement Air Compressor for Nitric Acid Plant #1   |

|          |         |                               |
|----------|---------|-------------------------------|
| 94030110 | 12/2/14 | MR-51 Flare                   |
| 15050034 | 6/9/15  | Converter Replacement Project |

- There are no newly issued Construction Permits for projects not yet constructed for this source.
- The following table lists the T1N Limits issued by the Illinois EPA and require incorporation into the CAAPP Permit prior to the proposal and issuance of this Draft CAAPP Permit.

| <i>T1 Type</i> | <i>Condition</i>                             | <i>Subject</i>   |
|----------------|--|--|
| T1N            | Section 4.2<br>Condition<br>4.2.2(c) (i) (A) | Minor NSR Limit to restrict usage of boiler to meet the definition of limited use boiler under 40 CFR 63 Subpart DDDDD |
| T1N            | Section 4.2<br>Condition<br>4.2.2(c) (i) (B) | Minor NSR Limit to restrict usage of boiler to meet the definition of limited use boiler under 40 CFR 63 Subpart DDDDD |

- Extraneous or Obsolete T1 Conditions:<sup>4</sup>

| <i>Construction<br/>Permit No.</i> | <i>Condition Number</i> | <i>Subject</i>   |
|------------------------------------|-------------------------|--|
| 07060026                           | 1-7                     | SCR system for compressor engines C-02A, C-02B, C-02C and QC-2   |
| 08100009                           | 5                       | Hydrogen peroxide injection system for Nitric Acid Plant #1  |
| 13050015                           |                         | The permit issued on 5/13/13 for the MR-25 Flare does not contain any applicable requirements  |
| 10050035                           | 5                       | The emission unit authorized by this permit was removed from service. Recordkeeping and reporting requirements are no longer applicable. |

**CHAPTER III - SUPPLEMENTAL DISCUSSIONS REGARDING THE PERMIT**

The information provided in this Chapter of the Statement of Basis is being provided to assist interested parties in understanding what additional information may have been relied on to support this draft CAAPP permit.

**3.1 Environmental Justice Discussions**

This location has not been identified as a potential concern for Environmental Justice consideration.

**3.2 Emission Testing Results**

The source has performed the following emission testing:

| <i>Emission Unit</i>    | <i>Date</i>         | <i>Pollutant</i> | <i>Results of Run</i> | <i>Compliance Margin %</i> |
|-------------------------|---------------------|------------------|-----------------------|----------------------------|
| Nitric Acid Plant 1 & 2 | 1/21/14-1/22/14     | NOx              | 0.88                  | 94%                        |
| Nitric Acid Plant #1    | 12/23/14            | NOx              | 0.56                  | 96.2%                      |
| Nitric Acid Plant #2    | 3/3/15              | NOx              | 4.95                  | 67%                        |
| Combined Clark Engines  | 12/15/11 - 12/16/11 | CO               | .292                  | N/A                        |
| Combined Clark Engines  | 12/15/11 - 12/16/11 | NOx              | 77.5                  | 35.9%                      |
| Combined Clark Engines  | 12/15/11 - 12/16/11 | VOM              | <.0018                | 99%                        |

**3.3 Compliance Reports (Annual Certifications, Semiannual Monitoring, NESHAP, etc.)**

A review of the source's compliance reports demonstrates the sources ability to comply with all applicable requirements.

**3.4 Field Inspection Results**

A review of the source's latest field inspection report dated 07/21/15 demonstrates the source's ability to comply with all applicable requirements.

**3.5 Historical Non-Compliance**

- United States of America v. Rentech Energy Midwest Corp Consent Decree 11-CV-50358  
The U.S. EPA alleges that Rentech constructed, modified, and operated the #1 Nitric Acid Production Plant without obtaining the appropriate preconstruction and operating permit and without installing the best available control technology. Furthermore, EPA alleged that Rentech failed to comply with the NSPS NO<sub>x</sub> emission limits and obtain a valid Title V permit.

**3.6 Source Wide Justifications and Rationale**

| <b>Applicable Requirements Summary</b>                          |                     |                                   |
|---|---------------------|-----------------------------------|
| Applicable Requirement  | Type                | Location                          |
| Fugitive Particulate Matter (35 IAC 212.301 and 35 IAC 212.314) | Applicable Standard | See the Permit, Condition 3.1(a)  |
| Opacity Requirements (35 IAC 212.123(a))                        | Applicable Standard | See the Permit, Condition 3.1(b)  |
| Ozone Depleting Substances Requirement (40 CFR 82.150(b))       | Applicable Standard | See the Permit, Condition 3.1(c)  |
| Asbestos Demolition and Renovation (40 CFR 61 Subpart M)        | Applicable Standard | See the Permit, Condition 3.1.(d) |
| Episode Action Plan (35 IAC 244.141 and 244.142)                | Applicable Plan     | See the Permit, Condition 3.2(c)  |
| Risk Management Plan (40 CFR 68.215(a))                         | Applicable Plan     | See the Permit, Condition 3.2(d)  |

### **Fugitive Particulate Matter and Visible Emissions (i.e., Opacity)**

The likelihood of the source generating any fugitive particulate matter emissions is very low. The Illinois EPA has not previously documented non-compliance with the particulate matter and/or visible emissions standard and no air quality complaints have been filed with the Agency.

For some individual emissions units that are more likely to emit particulate matter or visible emissions, more frequent monitoring is set in the unit specific requirements. (See Permit Conditions 4.1.2(a)(ii), 4.2.2(a)(ii), 4.4.2(a)(ii), 4.5.2.(a)(ii), 4.4.2(a)(ii), 4.7.2(a)(ii), 4.9.2(a)(ii))

### **Other Requirements**

As specified in Table 8, the permit includes requirements for ozone depleting substances (40 CFR Part 82, Subpart F), asbestos (40 CFR 61, Subpart M, and Section 9.13(a) of the Act), episode action plans (35 IAC 244.141 and 244.142), and risk management plans (40 CFR 68.215(a)). The Illinois EPA has reviewed the applicable provisions of these rules and determined that no additional monitoring is necessary beyond the monitoring, recordkeeping and reporting requirements inherent in these rules.

Note that 40 CFR 61, Subpart M, only applies generally as the source has indicated in its application it performs demolition and renovations of asbestos containing material, the source does not manufacture products containing asbestos.

### **Prompt Reporting Discussion**

Prompt reporting of deviations for source wide emission units has been established as 30 days. See rationale in Chapter III Section 3.9.

### **3.7 Emission Unit Justifications and Rationale**

| <b>1. Ammonia Plant- Ammonia Synthesizing Operations</b> |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                   |                     |  |
| Applicable Requirement                                   | Type                | Location                                 |
| Opacity Requirement (35 IAC 212.301 and 35 IAC 212.314)  | Applicable Standard | See the Permit, Condition 4.1.2(a)(i)(A) |
| PM Requirement   | Applicable          | See the Permit, Condition                |

|   |                     |  |
|---|---------------------|--|
| (35 IAC 212.322(a) and 35 IAC 212.321(a))                                   | Standard            | 4.1.2(b) (i) (A) - (B)                                 |
| PM Requirement<br>(Construction Permit #94030110)                           | Applicable Limit    | See the Permit, Condition 4.1.2.(b) (i) (C) - (D)      |
| SO <sub>2</sub> Requirement<br>(Construction Permit #94030110)              | Applicable Limit    | See the Permit, Condition 4.1.2(c) (i) (A)             |
| VOM Requirement<br>(35 IAC 215.301 and 35 IAC 215.302)                      | Applicable Standard | See the Permit, Condition 4.1.2(d) (i) (A) - (B)       |
| VOM Requirement<br>(Construction Permit #94030110)                          | Applicable Limit    | See the Permit, Condition 4.1.2(d) (i) (C)             |
| CO Requirement<br>(Construction Permit #94030110)                           | Applicable Limit    | See the Permit, Condition 4.1.2.(e) (i) (A) - (B)      |
| NO <sub>x</sub> Requirement<br>(Construction Permit #94030110)              | Applicable Limit    | See the Permit, Condition 4.1.2.(f) (i) (A) - (B)      |
| NO <sub>x</sub> Requirement<br>(Section 39.5(7) (a) of the Act)             | Applicable Limit    | See the Permit, Condition 4.1.2.(f) (i) (C)            |
| Operational and Production Requirements<br>(Section 39.5(7) (a) of the Act) | Applicable Limit    | See the Permit, Condition 4.1.2.(g) (i) (A), (C) - (D) |
| Operational and Production Requirements<br>(Construction Permit #9403110)   | Applicable Limit    | See the Permit, Condition 4.1.2.(g) (i) (B)            |
| SO <sub>2</sub> Requirement<br>(35 IAC 214.301)                             | Applicable Standard | See the Permit, Condition 4.1.4(c) (i) (A) (I)         |

**Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.1.2(a) (ii) (A))
  - o The Permittee will conduct visible emissions observations of unit SG-1 on a monthly basis, with the option to reduce the frequency of observations to quarterly if visible emissions are not detected for a period of 3 months. If visible emissions are detected at any time, observations will be required on a weekly basis with an option to reduce the frequency to monthly if no visible emissions are detected for a period of 4 weeks. The Permittee shall use either USEPA RM 22 with an observation period of 6 minutes or USEPA Method RM 9.
  - o The Permittee shall conduct visible emissions observations of the MR-51 flare tip at least once per period during which the flare has operated for 24 hours consecutively. The Permittee shall use either USEPA RM22 with an observation period of 6 minutes or USEPA Method RM 9.
- ✓ Recordkeeping as follows (Condition 4.1.2(a) (ii) (B)):
  - o The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken.

**Rationale and Justification for Periodic Monitoring for Visible Emissions**

IEPA does not expect significant visible emissions from these units during normal operations. Quarterly or monthly observations for visible emissions of unit SG-1 would be sufficient to determine if more frequent observations should be conducted. Visible emissions observations will be required for the MR-51 flare each time the flare operates over 24 consecutive hours. The MR-25 flare operates in very limited instances (historically less than 10 hours a year). Opacity of the MR-25 flare is expected to be below 30% opacity, and due to the limited operation of the flare, and fact that the flare only operates during emergencies such as low-pressure weather systems, power outages, and mechanical failures, it is not considered practicable or necessary to require regular visible emissions observations. Visible emissions are not expected from the other units. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being

threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

#### **Particulate Matter Emission**

- ✓ Monitoring as follows (Condition 4.1.2.(b) (ii) (A)-(C))
  - o Compliance with the limit shall be determined using the emission factors and equation in the permit.
  - o The Permittee shall monitor the hours of operation of the MR-51 Pilot in terms of hours per month.
  - o During periods in which the flare MR-51 is operation, the Permittee shall monitor natural gas usage of the processes venting to the flare (SG-1 and HR-4).
- ✓ Recordkeeping as follows (Condition 4.1.2(b) (ii) (D)-(I)) :
  - o The Permittee shall record the process weight rate for SG-1 and the hourly particulate matter emissions from SG-1.
  - o The Permittee shall maintain records of the emission calculations.
  - o The Permittee shall maintain records of the monthly usage of natural gas in terms of mmscf.
  - o The Permittee shall retain documentation of the rated capacity of the MR-51 Flare pilot and MR-51 Flare Tip
  - o The Permittee shall maintain records of the dates and times during which the MR-51 flare tip is operation and the usage of natural gas by the process units SG-1 and H-R4.

#### **Rationale and Justification for Periodic Monitoring for Particulate Matter Emissions**

IEPA does not expect significant PM emissions from any of the emissions units. The Permittee is required to monitor and maintain records of the process weight rate for SG-1 as well as the hourly PM emissions. This information is sufficient to demonstrate compliance with the process weight rate limits of 35 IAC 212.322(a) and 35 IAC 212.321(a). With the exception of the flare, the other ammonia synthesizing operations are not considered physically capable of emitting PM in a quantity that would require monitoring to demonstrate compliance with the standard.

IEPA does not expect the flare to emit large quantities of particulate matter. The flare pilot will combust natural gas, and gases from R-1, R-2, R-3, R 4, T-1, R-5 and DC-20 are routed to the flare during periods of startup and shutdown of the primary reformer. The gas routed to the flare is primarily comprised of hydrocarbons, carbon dioxide and carbon monoxide. Exhaust from the sulfur guards are not routed to the flare.

As such, IEPA expects that the PM emitted from the flare pilot and flare can be estimated using the AP-42 emission factor for natural gas from Table 1.4-2. The natural gas hourly flow rate is taken as the maximum natural gas flow rate to the pilot, and the maximum capacity of the flare respectively.

| Emission Unit     | Emission Factor*<br>(lb/mmscf) | Natural Gas<br>hourly flow rate<br>(mmscf/hour) | Emissions<br>(lb/hr) | Limit on<br>hours of<br>operation | Emissions<br>(tons/year) |
|-------------------|--------------------------------|---|----------------------|-----------------------------------|--------------------------|
| MR-51 Flare Pilot | 7.45                           | $9 \times 10^{-5}$                              | $6.7 \times 10^{-4}$ | 8760                              | $2.936 \times 10^{-3}$   |
| MR-51 Flare Tip   | 7.45                           | .6  | 4.47                 | 250                               | 0.559                    |

IEPA also estimated the emissions from the flare tip using the emission factor for soot from AP-42 Table 13.5-1, with the conservative assumption that the flare was a heavily smoking flare.

| Emission Unit      | Emission Factor<br>( $\mu\text{g/L}$ ) [ $\text{lb}/\text{ft}^3$ ] | Maximum Exit Gas<br>Flow Rate (ACFM) | Emissions<br>( $\text{lb}/\text{hr}$ ) | Limit on<br>hours of<br>operation | Emissions<br>(tons/year) |
|--------------------|--|--------------------------------------|--|-----------------------------------|--------------------------|
| MR-51 Flare<br>Tip | 274 [ $2.133 \times 10^{-8}$ ]                                     | 257,854                              | $5.5 \times 10^{-3}$                   | 250                               | $6.88 \times 10^{-4}$    |

The estimated hourly emissions and annual emissions are well below the limits established in the construction permit. Therefore, the recordkeeping and monitoring is determined to be sufficient to demonstrate compliance.

#### **Sulfur Emissions**

- ✓ Monitoring as follows (Condition 4.1.2(c) (ii) (A)-(C))
  - o Compliance with the limit shall be determined using the emission factors and equation in the permit.
  - o The Permittee shall monitor the hours of operation of the MR-51 Pilot in terms of hours per month.
- ✓ Recordkeeping as follows (Condition 4.1.2.(c) (ii) (D)-(E)) :
  - o The Permittee shall maintain records of the emission calculations.
  - o The Permittee shall retain documentation of the rated capacity of the MR-51 Flare pilot on site.
  - o The Permittee shall maintain records of the monthly natural gas usage.

#### **Rationale and Justification for Periodic Monitoring**

IEPA does not expect the flare to emit large quantities of  $\text{SO}_2$ . The flare pilot will combust natural gas, and gases from R-1, R-2, R-3, R-4, T-1, R-5 and DC-20 are routed to the flare during periods of startup and shutdown of the primary reformer. The gas routed to the flare is primarily comprised of hydrocarbons, carbon dioxide and carbon monoxide. Exhaust from the sulfur guards are not routed to the flare.

As such, IEPA expects that the  $\text{SO}_2$  emitted from the flare pilot can be estimated using the AP-42 emission factor for natural gas from Table 1.4-2.

| Emission Unit        | Emission Factor<br>( $\text{lb}/\text{mmscf}$ ) | Natural Gas<br>hourly flow rate<br>( $\text{mmscf}/\text{hour}$ ) | Emissions<br>( $\text{lb}/\text{hr}$ ) | Limit on<br>hours of<br>operation | Emissions<br>(tons/year) |
|----------------------|---|---|--|-----------------------------------|--------------------------|
| MR-51 Flare<br>Pilot | 0.588   | $9 \times 10^{-5}$  | $5.3 \times 10^{-5}$                   | 8760                              | $2.32 \times 10^{-4}$    |

The estimated hourly emissions and annual emissions are well below the  $\text{SO}_2$  limit established in the construction permit. Therefore, the recordkeeping and monitoring is determined to be sufficient to demonstrate compliance.

#### **Carbon Monoxide Emissions**

- ✓ Monitoring as follows (Condition 4.1.2(e) (ii) (A)-(F))
  - o Compliance with the limit shall be determined using the emission factors and equation in the permit.
  - o The Permittee shall monitor the hours of operation of the MR-51 Pilot.
  - o The Permittee shall monitor the natural gas usage of the processes venting to the flare (SG-1 and HR-4) during periods in which the flare MR-51 is operational.

- o Compliance with the visible emissions monitoring.
  - o Operation of a thermocouple or equivalent device to confirm the presence of a flame during operation during times when the flare is operational.
- ✓ Recordkeeping as follows (Condition 4.1.2.(e) (ii) (G)-(I)):
- o The Permittee shall maintain records of the emission calculations.
  - o The Permittee shall maintain records of the monthly natural gas usage of the units venting to the flare in terms of mmscf.
  - o The Permittee shall maintain records of the monthly natural gas usage of the MR-51 flare pilots.

#### Rationale and Justification for Periodic Monitoring

CO emissions from the flare and flare pilot are largely expected to be due to incomplete combustion of the natural gas. IEPA estimated emissions from the flare pilot using emission factors from AP-42 Table 1.4-2 below:

| Emission Unit        | Emission Factor<br>(lb/mmscf) | Natural Gas<br>hourly flow<br>rate<br>(mmscf/hour) | Emissions<br>(lb/hr) | Limit on hours<br>of operation | Emissions<br>(tons/year) |
|----------------------|-------------------------------|--|----------------------|--------------------------------|--------------------------|
| MR-51 Flare<br>Pilot | 82.35                         | $9 \times 10^{-5}$                                 | $7.4 \times 10^{-3}$ | 8760                           | 0.032                    |

Emissions from MR-51 Flare tip using emission factors from AP-42 Table 13.5-2 are included below.

| Emission Unit   | Emission Factor | Maximum<br>Capacity to<br>Flare  | Emissions (lb/hr) | Limit on<br>hours of<br>operation | Emissions<br>(tons/year) |
|-----------------|-----------------|----------------------------------|-------------------|-----------------------------------|--------------------------|
| MR-51 Flare Tip | 0.31 lb/MMBtu   | 600,000 SCF/HR<br>(1070 BTU/SCF) | 199.02            | 250                               | 24.9                     |

While emissions are estimated below the permit limitations, emissions when flaring gas are highly variable and the AP-42 emission factor is not always representative of actual emissions. Since CO emissions are correlated with low combustion efficiency, IEPA has included requirements to monitor parameters that indicate whether the flare is operating efficiently. Efficient operation is correlated with non-smoking flares as smoke is an indication that hydrocarbons are not being combusted completely. The Permittee shall be required to monitor the flare once per day of operation for visible emissions using Method 22 or Method 9. Further, the presence of a flame can be used to indicate efficient operation. The Permittee is required to install a thermocouple or equivalent device capable of determining whether a flame is present.

#### Nitrogen Oxides Emissions

- ✓ Monitoring as follows (Conditions 4.1.2(f) (ii) (A)-(F))
- o Compliance with the annual limit is determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) using the equations and emission factors included in the permit.
  - o The Permittee shall monitor the hours of operation of the MR-51 Pilot in terms of hours per month.
  - o Permittee shall monitor the ammonia flared per month using a flow meter.
  - o The Permittee shall monitor natural gas usage of the processes venting to the flare (SG-1 and HR-4) during periods in which the flare MR-51 is operational.



- ✓ Recordkeeping as follows (Condition 4.1.2(f) (ii) (G)-(K)) :
  - o The Permittee will maintain records of all emissions calculations performed.
  - o The Permittee will maintain records of the total heat input to flare MR-51, quantity of NH<sub>4</sub> flared per month, and quantity of natural gas fired in flare MR-51 per month.
  - o the Permittee shall maintain records of the dates and times the MR-51 flare tip is operational.

#### Rationale and Justification for Periodic Monitoring

NO<sub>x</sub> emissions are expected to occur as a result of both natural gas combustion and the combustion of the processes gases flared. For the gas flared in MR-25, which is primarily comprised of ammonia, the emission factor is determined by material balance.

| Emission Unit   | Emission Factor (lb/mmscf) | Emission Factor Units                   | Throughput rate                           | Emissions                    | Limits         | Annual Emissions (tons/year) |
|-----------------|----------------------------|---|---|------------------------------|----------------|------------------------------|
| MR-51 Pilot     | 98 <sup>*</sup>            | Lbs/mmscf natural gas                   | 9 x 10 <sup>-5</sup> mmscf natural gas/hr | 8.2 x 10 <sup>-3</sup> lb/hr | 8760 hrs.      | 0.36                         |
| MR-51 Flare Tip | 0.068 <sup>**</sup>        | Lb/mmBtu                                | 600,000 SCF/HR (1070 BTU/SCF)             | 43.7 lbs/hr                  | 250 hrs.       | 5.46 tons/year               |
| MR-25 Flare tip | 2.71 <sup>***</sup>        | Lb NO <sub>x</sub> / lb NH <sub>3</sub> | 10,310 lb/month                           | 13.9 tons/month              | 28,600 lb/year | 38.753 tons/year             |

\* AP-42 Table 1.4-2

\*\* AP-42 Table 13.5-1

\*\*\* Material Balance

Emissions from MR-51 pilot are estimated to be well below the emission limitations. Emissions from the MR-51 Flare Tip and the MR-25 Flare Tip, are estimated to be equal to or close to the NO<sub>x</sub> emission limitation.

#### Organic Material Emission

- ✓ Monitoring as follows (Condition 4.1.2(d) (ii) (A)-(E) )
  - o Compliance with the VOM limit for the Sulfur Guards is assumed as the potential emissions for the sulfur guards are well below the 8lb/hr emission limitation. The Permittee shall be required to maintain records documenting the potential emissions of the sulfur guards.
  - o In order to demonstrate compliance with the VOM limit for the Hot Potassium Absorbent Regenerator, the Permittee shall ensure ammonia production does not exceed 55.7 tons/hour. The Permittee shall monitor the hourly ammonia production using the ammonia production meters.
  - o The Permittee shall determine annual limits on a monthly basis from the sum of the current month plus the preceding 11 months using the equation and emission factors included in the permit.
  - o The Permittee shall monitor hours of operation of the MR-51 flare pilot.
- ✓ Recordkeeping as follows (Condition 4.1.2(d) (ii) (F)-(I)) :
  - o The Permittee shall maintain records of the ammonia production (determined using the ammonia production meters) and the VOM emission factor for T-2.
  - o The Permittee shall maintain records of that the maximum natural gas throughput for the Sulfur Guards and the VOM emission factor for the sulfur guards.
  - o The Permittee shall maintain records of the emission factors and calculations performed.

- o The Permittee shall maintain records the monthly natural gas usage of the MR-51 flare pilot.

Rationale and Justification for Periodic Monitoring

Periodic Monitoring is sufficient for these emission units because:

- **Sulfur Guard:** The maximum natural gas throughput to the sulfur guard is 0.98 mmscf/hr, and the emission factor which was derived via material balance is 0.016 lbs VOM/mmscf. The maximum hourly emissions are calculated as follows:

- 

$$\text{Hourly VOM Emissions} = \text{Hourly Natural Gas Usage} \left( \frac{\text{mmscf}}{\text{hr}} \right) * \text{Emission factor} \left( \text{lbs} \frac{\text{VOM}}{\text{mmscf}} \right)$$

$$\text{Hourly VOM Emissions} = 0.98 \left( \frac{\text{mmscf}}{\text{hr}} \right) * 0.016 \left( \text{lbs} \frac{\text{VOM}}{\text{mmscf}} \right)$$

$$\text{Hourly VOM Emissions} = .01568$$

This is well below the 8lb/hr VOM limit. The Permittee will be required to maintain records of the maximum natural gas throughput and the emission factor, but no other monitoring or recordkeeping will be required.

- **Hot Potassium Absorbent Regenerator:** The Permittee has chosen to limit hourly ammonia production to 55.7 tons per hour. At this production rate and with an emission factor based off of stack test data of 0.1418 lbs VOM/ton of ammonia VOM emissions are estimated to be 7.9 lbs per hour. Therefore, monitoring to ensure that the production rate does not exceed 55.7 tons per hour using the production flow meters is sufficient to determine compliance with the limit of 35 IAC 215.301.
- **R-2, R-3, R-4, T-2 and DC-20:** Due to the physical nature of the emission units, they are not expected to emit VOM in significant quantities.
- **MR-25 Pilot:** VOM emissions from the MR-25 pilot are estimated using the AP-42 emission factor for natural gas combustion.

| Emission Unit | Emission Factor*<br>(lb VOM/mmscf) | Natural Gas<br>hourly flow<br>rate<br>(mmscf/hour) | Emissions (lb<br>VOM /hr) | Maximum<br>Annual<br>Operation | Annual<br>Emissions<br>(tons VOM<br>/ year) |
|---------------|------------------------------------|--|---------------------------|--------------------------------|---|
| MR-25 Pilot   | 5.39                               | $9 \times 10^{-5}$                                 | $4.9 \times 10^{-4}$      | 8760 hrs.                      | $2.15 \times 10^{-3}$                       |

\* AP-42 Table 1.4-2

The estimated VOM emissions of  $4.9 \times 10^{-4}$  lbs per hour and  $2.15 \times 10^{-3}$  tons per year are well below their respective limits of .25 lbs per hour and 1.1 tons per year. As such maintaining records of emissions calculations and emission factors as well as the monthly natural gas usage is deemed sufficient to determine compliance.

Operational and Production Requirements

- ✓ Monitoring as follows (Condition 4.1.2(g) (ii) (A))
  - o The Permittee shall monitor the quantity of ammonia flared in MR-25 using the flow meters.
- ✓ Recordkeeping as follows (Condition 4.1.2(g) (ii) (B)-(E)):
  - o The Permittee shall keep records of the hours of operation of MR-51 flare including the date and duration of flaring and reason for flaring.

- o The Permittee shall maintain records of the dates, times and durations of startups and shutdowns of the Primary Reformer.
- o The Permittee shall maintain records of the monthly and annual throughput of ammonia to flare MR-25. The throughput of the current month shall be summed with that of the preceding 11 months to determine the annual ammonia throughput to flare MR-25.

#### Rationale and Justification for Periodic Monitoring

Maintaining records of the dates, duration, and reason for operation of Flare MR-51, and dates and durations of startup and shutdown of the Primary Reformers is sufficient to determine compliance with the associated construction permit limits. The requirement to monitor the throughput of ammonia to flare MR-25 and record the monthly and annual quantity of ammonia flared is sufficient to determine compliance with the Title 1 limits established in CAAP permit #96010003.

#### Non-Applicability Discussion

- As the ammonia synthesizing units do not produce ammonium sulfate they are not subject to the New Source Performance Standards (NSPS) for Ammonium Sulfate Manufacture, 40 CFR Part 60 Subpart PP.
- Since the ammonia synthesizing units are process units, and not combustion units they are not subject to 35 IAC 216.121.
- Since the emission units SG-1, R-2, R-3, R-4, T-1, R-5, DC-20 and T-2 do not use or produce nitric acid they are not subject to 35 IAC 217 Subpart O.
- Since the ammonia synthesizing units do not produce organic nitrations or oxidations using nitric acid they are not subject to 35 IAC 217 Subpart K pursuant to 35 IAC 217.301(a).
- The ammonia synthesizing units are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the none of the units use an add-on control device to achieve compliance with an emission limitation or standard.

#### Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

#### Additional Recordkeeping and Reporting Requirements

Additional requirements from Construction Permit #15050034 were incorporated into the CAAP in condition 4.1.4(a)- (b). These conditions require that the Permittee maintain additional records relating to Construction Permit #15050034 for a period of 10 years following completion of the project authorized by the construction permit. These recordkeeping and reporting requirements were issued pursuant to the construction permit and 40 CFR 52.21(r) (6). Additional state reporting requirements from this construction were incorporated into section 4.1.5(b) .

#### Operational Flexibility

The Permittee requested, and IEPA granted, operational flexibility in certain scenarios. Specifically, in condition 4.1.4.c, the Permittee is authorized to operate the sulfur guards in normal operating mode and the regeneration mode.

The facility will be required to comply with the same limits, monitoring, and recordkeeping as is required in 4.1.2 when the sulfur guards are operated in regeneration mode. In addition, when the sulfur guards are operated in regeneration mode, they are expected to emit SO<sub>2</sub> and the facility is required to comply with 35 IAC 214.301. The facility will demonstrate compliance with this requirement through a material balance and emission calculations recorded in the permit.

The Permittee has also requested that the ammonia safety flare be allowed to operate during low pressure weather system, power outages, mechanical failure of one or more compressor, and ammonia barge unloading. IEPA has authorized these scenarios and will require that the flare meet the limits and perform the monitoring and recordkeeping required in 4.1.2 of the permit.

| <b>2. Ammonia Plant- Combustion Units</b>                                  |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                                     |                     |  |
| <b>Applicable Requirement</b>  | <b>Type</b>         | <b>Location</b>                                |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314)                 | Applicable Standard | See the Permit, Condition 4.2.2(a) (i) (A)     |
| CO Requirement<br>(35 IAC 216.121)   | Applicable Standard | See the Permit, Condition 4.2.2(b) (i) (A)     |
| Operational and Production Requirement<br>(Section 39.5(7) (a) of the Act) | Applicable Limit    | See the Permit, Condition 4.2.2(c) (i) (A)-(B) |
| Operational and Production Requirements<br>(40 CFR 63 Subpart DDDDD)       | Applicable Standard | See the Permit, Condition 4.2.2(d) (i) (A)-(C) |

#### **Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.2.2(a) (ii) (A))
  - o The Permittee will conduct visible emissions observations weekly, with the option to reduce the frequency of observations to monthly or quarterly if visible emissions are not detected for periods of four weeks or 3 months respectively. If visible emissions are detected at any time, observations will revert to a weekly basis. The Permittee shall use either USEPA RM22 with an observation period of 6 minutes or USEPA Method RM 9.
- ✓ Recordkeeping as follows (Condition 4.2.2(a) (ii) (B)):
  - o The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken.

#### **Rationale and Justification for Periodic Monitoring**

As the emission units combust natural gas, IEPA does not expect significant visible emissions of PM emissions from these units during normal operations. Quarterly or monthly observations for visible emissions of the units would be sufficient to determine if more frequent observations should be conducted. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

#### **Carbon Monoxide Emissions**

- ✓ Monitoring as follows (Condition 4.2.2(b) (ii) (A))

- o Compliance with the requirements of 40 CFR 63 Subpart DDDDD (See Permit Condition 4.2.2.d) is used to demonstrate compliance with the CO limits.
- ✓ Recordkeeping as follows (Condition 4.2.2(b) (ii) (B)):
  - o The Permittee shall maintain records demonstrating that the units, R-1 and H-R6 are only capable of firing natural gas.

Rationale and Justification for Periodic Monitoring

Periodic Monitoring is sufficient for these emission units because:

**R-1:** The AP-42 emission factor for CO emissions from small boilers burning natural gas is 84 lbs/10<sup>6</sup> scf. The maximum natural gas usage per year for R-1 is 3,285 mmscf. Therefore, through unit analysis the hourly CO emissions are estimated to be 31 lbs/hr or .52 lbs/min. The average exit gas flow rate is 85,000 ACFM and the maximum temperature is 440°F or 899.67°R)

Using the ideal gas law, the maximum CO concentration can be estimated through the following equation:

$$C_{ppmv} = \frac{m(R)T}{P(V)(MW)} \times 10^6$$

Where:

$m$  = mass (.52 lbs/min)

$MW$  = molecular weight (28.01 lbs CO/mol CO)

$R$  = Universal Gas Constant ( 10.732 ((ft<sup>3</sup> \*psi)/R(lb\*mol)))

$T$  = Absolute Temperature (899.67°R)

$V$  = Volume (85,000 acfm)

$P$  = Atmospheric Pressure (14.696 psi)

$$C_{ppmv} = \frac{.52(10.732)899.67}{14.696(85000)(28.01)} \times 10^6$$

$$C_{ppmv} = 143.5 \text{ ppmv}$$

This is below the limitation of 200 ppm with a 30% compliance margin. However, these estimates are made assuming that the AP-42 emission factor is representative of actual emissions. The unit is also subject to the tune-up requirements of 40 CFR 63 Subpart DDDDD, which will further ensure that it is operating efficiently and reduce CO emissions. Further, the MACT requires performance testing of R-1 which will be used to demonstrate compliance with the SIP limitation. The Permittee is also required to maintain records demonstrating that the units are physically capable of firing only natural gas.

**H-R6:** The emissions of CO from a natural gas boiler are dependent on the combustion efficiency of the heaters. The process heater H-R6 is considered to be small in size, and does not have a history of non-compliance. Compliance with the CO limit shall be determined during testing performed during the annual tune-up required in Condition 4.2.2.d.i.D. The Permittee is also required to maintain records demonstrating that the unit is physically capable of firing only natural gas.

**Operational and Production Requirements**

- ✓ Recordkeeping as follows (Condition 4.2.2(c) (ii) (A)):
  - o The Permittee shall maintain records of the H-R6's monthly and annual natural gas usage in terms of  $10^6$  Ft<sup>3</sup>. Annual natural gas usage shall be determined by summing the natural gas usage of the eleven previous months and current month.

**Rationale and Justification for Periodic Monitoring**

Periodic Monitoring is sufficient for this emission unit because:

Measuring natural gas usage of H-R6 is sufficient to determine compliance with the production capacity and the annual average capacity factor.

**MACT Requirements**

- ✓ Monitoring as follows (Condition 4.4.2.(d) (ii) (A)-(B)):
  - o The Permittee is required to perform a tune-up of R-1, H-R4, and H-R6 every 5 years.
- ✓ Recordkeeping as follows (Condition 4.4.2.(d) (ii) (C)):
  - o The Permittee must maintain records of the results of measurements from the tune-ups and records of any corrective actions taken as part of the tune-ups.

**Rationale and Justification for Periodic Monitoring**

The facility is not subject to any numeric emissions limitations under the Boiler MACT, only that they must conduct annual tune-ups. The MACT standard contains adequate recordkeeping requirements to ensure compliance with the required provisions of the standard.

**Applicability Discussion**

**40 CFR 63 Subpart DDDDD: Boiler MACT**

R-1, H-R4 and H-R6 are industrial process heaters that are part of the facility, a major source of HAPs and pursuant to 40 CFR 63.7485 are therefore subject to the Boiler MACT. However, pursuant to 40 CFR 63.7500(e), none of the process heaters are subject to emissions limits.

Pursuant to 40 CFR 63.7500(e), because H-R4 is a natural gas fired boiler with a heat input less than 5 mmBtu/hr, the facility is required to conduct a tune-up of the unit once every 5 years as specified in 40 CFR 60.7540. R-1 has a continuous oxygen trim system and is subject to the requirement for a 5 year tune up as specified in 40 CFR 63.7540.

The Permittee has voluntarily elected to limit the heat capacity of H-R6 to meet the definition of limited use process heater under 40 CFR 63.7575. As a limited use process heater, H-R6 is subject to a five year tune up as specified in 40 CFR 63.7540.

The facility completed the requirement of 40 CFR 63.7530(e) to perform a one-time energy assessment on October 13-16 2014, so it is not necessary to include this requirement in the CAAPP permit.

**Non-Applicability Discussion**

- R-1, H-R4, and H-R6 are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the units do not use an add-on control device to achieve compliance with an emission limitation or standard.

#### **Other Requirements Discussion**

Recordkeeping and Reporting requirements from Construction Permit #15050034 were incorporated into CAAPP condition 4.2.4.a. These conditions require that the Permittee maintain additional records relating to Construction Permit #15050034 for a period of 10 years following completion of the project authorized by the construction permit. These recordkeeping and reporting requirements were issued pursuant to the construction permit and 40 CFR 52.21(r) (6). Additionally, emission testing requirements created under Construction #15050024 and associated recordkeeping were incorporated into Section 4.2.4(a) of the CAAPP.

#### **Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

| <b>3. Ammonia Plant- Cooling Towers</b>                                   |                     |  |
|---|---------------------|--|
| <b>Applicable Requirements Summary</b>                                    |                     |  |
| Applicable Requirement  | Type                | Location   |
| PM Requirement<br>(35 IAC 212.322(a) and 35 IAC 212.321(a))               | Applicable Standard | See the Permit, Condition 4.3.2(a) (i) (A) - (B) |
| PM Requirement<br>(Construction Permit #11050039)                         | Applicable Limit    | See the Permit, Condition 4.3.2(a) (i) (C)       |
| Operational and Production Requirements<br>(Construction Permit 11050039) | Applicable Limit    | See the Permit, Condition 4.3.2(b) (i) (A) - (D) |

#### **Particulate Matter Emission**

- ✓ Monitoring as follows (Condition 4.3.2(a) (ii) (A) - (F)) :
  - o The Permittee shall sample the water circulated in the cooling towers on at least a quarterly basis for dissolved solids content.
  - o Additionally, upon written request by IEPA, the Permittee shall promptly have the water sampled and analyzed for the presence of hexavalent chromium and maintain records of the results of such testing.
- ✓ Recordkeeping as follows (Condition 4.3.2(a) (ii) (G) - (K)) :
  - o The Permittee is required to maintain records of the results of the total dissolved solids testing, and calculations used to determine PM emissions from the cooling towers.

#### **Rationale and Justification for Periodic Monitoring for Particulate Matter Emission and Visible Emissions**

The cooling towers may emit PM since solids are dissolved in the cooling tower recirculating water that could be emitted as drift. The Permittee will be required to measure the total dissolved solids (TDS) content of the cooling tower recirculating water at least once per quarter. The Permittee will be required to maintain a record of all cooling tower recirculating water TDS measurements.

Assuming all TDS is emitted into the air, the maximum TDS concentration that will assure compliance with the emission limitations are documented below.

Using 8.4 lb/gal as the density of water from AP-42 Appendix A, the process weight rate of the cooling tower, in tons per hour, is calculated as the maximum recirculation rate gal/min x 60 min/hr x 8.4 lb/gal x 1 T / 2000 lb.

To calculate the maximum allowable TDS concentration, the following equation is used:

$$\text{Maximum TDS Concentration} = \frac{\text{Allowable PM emission rate } \left(\frac{\text{lb}}{\text{hr}}\right)}{\left(\text{Maximum Recirculation Rate } \left(\frac{\text{gal}}{\text{min}}\right) * \frac{60 \text{ min}}{\text{hr}} * \frac{1.7 \text{ lb}}{10^3 \text{ gal}}\right)} * 10^6$$

| Emission Unit   | Maximum recirculation rate (gallons/min) | Process Weight Rate (tons/hour) | Allowable PM Emission Rate lb/hr (tons/year) | Maximum TDS concentration to demonstrate compliance (ppm) |
|---|--|---------------------------------|--|---|
| Combined Circulation rate of W-1A, W-1B, W-1D, W-1E, W-1F | 58832                                    | 14825                           | 115.3 (505)                                  | 19,214  |
| W-1C  | 5662                                     | 1417.5                          | 79.2 (347)                                   | 137,310   |
| W-1G  | 16000                                    | 4005.6                          | 93.5 (409.6)                                 | 57,292  |

The TDS concentrations that would cause a violation of the PM emission limitation are significantly higher than the maximum TDS expected for the cooling towers. As such, quarterly TDS sampling and inspections of the cooling towers every six months shall be considered sufficient to demonstrate compliance with the PM emission limits of 35 IAC 212.321 and 35 IAC 322.22.

Compliance with the limit from construction permit #11050039 shall be demonstrated through use of drift eliminators in addition to TDS sampling, inspections of the drift eliminators and following best practices when operating and maintaining the cooling tower. Additionally, the Permittee is required to maintain records of the PM and PM<sub>10</sub> emissions and calculations performed using the TDS concentration.

The requirement to perform tests upon request for hexavalent chromium comes from 60 CFR 63 Subpart Q, National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers. This standard does not require routine monitoring, sampling, or analysis, but rather the testing requirement incorporated into the permit. This testing can be required if there is a reason to believe that the tower may be in violation of the standard.

While the cooling towers are subject to the opacity limitation of 35 IAC 212.301 and 35 IAC 212.314, due to the nature of the units it is unlikely that opacity will exceed 30%. Compliance with the PM limits and recordkeeping is deemed sufficient to demonstrate compliance with the SIP opacity limitation.

#### **Operational and Production Requirements**

- ✓ Monitoring as follows (Condition 4.3.2(b)(ii)(A)-(B))



- o The Permittee is required to perform inspections of the Cooling Towers at least once every six months.
- o The Permittee shall review and revise the written operating procedures for the cooling tower W-1G annually.
- ✓ Recordkeeping as follows (Condition 4.3.2(b)(ii)(C)-(H)):
  - o The Permittee shall keep a record of the design loss specifications for the drift eliminator on W-1G, the recommended procedures for inspection and maintenance, the operating factors, and MSDS sheets for all chemicals used in W-1G.
  - o The Permittee shall maintain records of the water circulated in the cooling tower in gallons per month and inspection and maintenance logs for the drift eliminators.
  - o Additionally, the Permittee is required to maintain records showing the emissions increase caused by the project authorized by Construction Permit #11050039 for 10 years.

#### Rationale and Justification for Periodic Monitoring

Periodic Monitoring is sufficient for these emission units because enough information is required to be maintained to be able to calculate the PM/PM<sub>10</sub> emissions from cooling tower W-1G. Additionally, the facility is required to maintain records that the drift eliminators installed are able to limit the loss of water droplets to not more than 0.0020 percent, as required by Construction Permit #11050039. Further, by requiring the facility to maintain a file of the MSDS sheets for all chemicals added to the cooling tower, enough information is available to determine if the facility has complied with the requirement to use only non-VOM additives. The requirement to maintain and revise the operating procedures as well as to log all maintenance and repairs provides sufficient information to ensure that the facility is operating the cooling tower W-1G in accordance with best practices.

#### Non-Applicability Discussion

- The cooling towers are not subject to 40 CFR 63 Subpart Q because they are not operated using chromium-based water treatment chemicals. However, should IEPA have reason to believe that the towers may be using chromium based chemicals, IEPA may require the facility to test the water of the cooling tower for chromium pursuant to 4.3.2(b)(ii)(D).
- The cooling towers are not subject to 40 CFR Part 64 because they do not use an add-on control device to achieve compliance with an emission limit with the exception of cooling tower W-1G. Tower W-1G is not subject to 40 CFR Part 64 because its uncontrolled emissions do not exceed 100 tons per year of PM.

#### Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

#### State Reporting Discussion

Additional reporting requirements created in construction permit #11050039 were incorporated into the Title V permit in condition 4.3.5.b. These conditions require the facility to report to Illinois EPA and USEPA if the annual emissions of CO, NO<sub>x</sub> or PM from construction permit #11050039 exceed the baseline actual emissions by a significant amount.

| <b>4. Ammonia Plant- Compressors</b>                       |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                     |                     |  |
| Applicable Requirement                                     | Type                | Location   |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314) | Applicable Standard | See the Permit, Condition 4.4.2(a) (i) (A)       |
| SO <sub>2</sub> Requirement<br>(35 IAC 214.301)            | Applicable Standard | See the Permit, Condition 4.4.2(b) (i) (A)       |
| NO <sub>x</sub> Requirement<br>(35 IAC 217 Subpart Q)      | Applicable Standard | See the Permit, Condition 4.4.2(d) (i) (A) - (B) |
| VOM Requirement<br>(35 IAC 215.301)                        | Applicable Standard | See the Permit, Condition 4.4.2.(c) (i) (A)      |

**Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.4.2(a) (ii) (A))
  - o The Permittee will conduct visible emissions observations weekly, with the option to reduce the frequency of observations to monthly or quarterly if visible emissions are not detected for periods of four weeks or 3 months respectively. If visible emissions are detected at any time, observations will revert to a weekly basis. The Permittee shall use either USEPA RM 22 with an observation period of 6 minutes or USEPA Method RM 9.
- ✓ Recordkeeping as follows (Condition 4.4.2(a) (ii) (B)) :
  - o The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken.

**Rationale and Justification for Periodic Monitoring**

IEPA does not expect significant visible emissions from these units during normal operations as the emission units burn natural gas. Quarterly or monthly observations for visible emissions of the units would be sufficient to determine if more frequent observations should be conducted. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

**Sulfur Emissions**

- ✓ Recordkeeping as follows (Condition 4.4.2(b) (ii) (A)) :
  - o The Permittee shall maintain daily records of the fuel types burned in the engines or records demonstrating that the compressors are physically capable of burning natural gas and no other fuel types.

**Rationale and Justification for Periodic Monitoring**

Periodic Monitoring is sufficient for these emission units because:

The AP-42 emission factor from 2-stroke lean burn engines for SO<sub>2</sub> is 0.000588 lb/mmBtu. The engines have a combined heat input of 150 mmBtu/hr. Therefore, the hourly SO<sub>2</sub> emissions are calculated to be 0.0882 lbs/hr or  $1.47 \times 10^{-3}$  lbs/min. The typical exit gas flow rate is 21,163 acfm and the maximum gas exit temperature is 650°F, or 1109.67°R.

Using the ideal gas law, the SO<sub>2</sub> concentration can be estimated through the following equation:

$$C_{ppmv} = \frac{m(R)T}{P(V)(MW)} \times 10^6$$

Where:

$m$  = mass ( $1.47 \times 10^{-3}$  lbs/min)

$MW$  = molecular weight (64 lbs  $\text{SO}_2$ /mol  $\text{SO}_2$ )

$R$  = Universal Gas Constant (  $10.732 \text{ ((ft}^3 \text{ *psi)/R(lb*mol))}$  )

$T$  = Absolute Temperature ( $1109.67^\circ\text{R}$ )

$V$  = Volume (21,163 acfm)

$P$  = Atmospheric Pressure (14.696 psi)

$$C_{ppmv} = \frac{1.47 \times 10^{-3}(10.732)1109.67}{14.696(21163)(64)} \times 10^6$$

$$C_{ppmv} = 0.88 \text{ ppmv}$$

This is well below the limit of 2000 ppm. Therefore the use of natural gas and maintaining records indicating that only natural gas was burned in the compressors is deemed sufficient to comply with the  $\text{SO}_2$  standard.

#### **Nitrogen Oxides Emissions**

- ✓ Monitoring as follows (Condition 4.4.2(d) (ii) (A) - (I))
  - The Permittee must inspect and perform periodic maintenance on each Clark Compressor.
  - The Permittee must monitor  $\text{NO}_x$  emissions annually between January 1 and May 1 or the first 676 hours of operation each calendar year using either a portable  $\text{NO}_2$  monitor or a method approved by IEPA.
  - Compliance is also determined by calculating emissions in accordance with the equations in the permit.
  - The Permittee shall conduct performance testing for  $\text{NO}_x$  using USEPA Method 7E once every 5 years, or within 60 days of the receipt of a written request for testing from Illinois EPA.
- ✓ Recordkeeping as follows (Condition 4.4.2(d) (ii) (J) - (K)):
  - The Permittee shall maintain records of the annual fuel input for the compressors and the aggregate annual  $\text{NO}_x$  emissions with supporting calculations
  - The Permittee shall maintain records of the manufacturer operating and maintenance procedures.
  - The Permittee shall maintain a log of the maintenance and repair activities performed.
  - The Permittee shall record any time periods for which sufficient monitoring data was not obtained, including the reason why monitoring was not sufficient.
  - Additionally, the Permittee shall maintain records of the calculations required under 35 IAC 217 Subpart Q and reports submitted to the Agency.

#### **Rationale and Justification for Periodic Monitoring**

Periodic Monitoring is sufficient for emission units because 35 IAC 217 Subpart Q contains sufficient monitoring and recordkeeping to demonstrate compliance with the limitations of the Subpart. In addition to the annual monitoring, emission calculation requirements, and maintenance and repair logs, the Permittee is required to conduct performance testing for  $\text{NO}_x$  once every five

years. IEPA considers the monitoring and recordkeeping to be sufficient to demonstrate compliance with 35 IAC 217 Subpart Q.

#### Organic Material Emission

- ✓ Recordkeeping as follows (Condition 4.4.2(c) (ii) (A)-(B)):
  - o The Permittee shall maintain daily records of the fuel types burned in the engines or records demonstrating that the compressors are physically capable of burning natural gas and no other fuel types.
  - o The Permittee shall maintain records of emission factors and the potential to emit calculations used to demonstrate compliance with the VOM limitation.

#### Rationale and Justification for Periodic Monitoring

VOM emission factor from Table 5 of the May 4, 2012 report of stack tests conducted in December 2011 reported an emission factor of the combined Clark engines (C-02A, C-02B, and C-02C) of 0.0017 lb/mmBtu. The maximum heat input of the engines combined is 150mmBtu/hr). Therefore, the maximum emissions are estimated:

$$VOM\ emissions\ \left(\frac{lbs}{hr}\right) = emission\ factor\ \left(\frac{lb}{mmBTU}\right) * Maximum\ Heat\ input\ \left(\frac{mmBtu}{hr}\right)$$
$$VOM\ emissions\ \left(\frac{lbs}{hr}\right) = 0.0017\ \left(\frac{lb}{mmBTU}\right) * 150\ \left(\frac{mmBtu}{hr}\right)$$

$$VOM\ emissions\ \left(\frac{lbs}{hr}\right) = 0.255\ lb/hr$$

This is well below the emission limit of 8lb/hr, so compliance is demonstrated through the combustion of natural gas. Therefore, the requirement that the Permittee maintain records of the emission factors and VOM emission calculations is deemed sufficient to demonstrate compliance in conjunction with the requirement that they maintain monthly records of the type of fuel combusted.

#### Applicability Discussion

##### **35 IAC 217 Subpart Q**

Pursuant to 35 IAC 217.386(a) (1), the Clarke compressors are subject to 35 IAC 217 Subpart Q, because the stationary reciprocating internal combustion engines are included in 35 IAC 217 Appendix G under Phoenix Chemical Company.

#### Non-Applicability Discussion

- The modification authorized under construction permit #11020024, the removal of the SCR system and installation of low-NO<sub>x</sub> combustion technology, did not constitute a reconstruction as defined in 40 CFR 60.15(b) or 63.6590(a) (3) (i). Therefore, 40 CFR 60 Subpart JJJJ does not apply. Additionally, the Clark Compressors do not have any applicable requirements from the National Emission Standards for Hazardous Air Pollution (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63 Subpart ZZZZ, because the pursuant to 40 CFR 63.6590(b) (3), existing spark ignition 2-stroke and 4-stroke lean burn engines do not have to meet the requirements of 40 CFR 63 Subpart ZZZZ or A.
- The Clark Compressors are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the

compressors do not use an add-on control device to achieve compliance with an emission limitation or standard. Low NO<sub>x</sub> combustion systems are not considered to be add on controls.

#### **Additional Title I Requirements Discussion**

Additional requirements from Construction Permit #11020024 were incorporated into section 4.4.4(a) (i). These conditions require the Permittee to maintain records to determine the annual NO<sub>x</sub>, CO and VOM emissions from the Clark Compressors.

#### **Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

#### **State Reporting Discussion**

Condition 4.4.5(b) includes additional state reporting requirements from 35 IAC 217 Subpart Q. These include the requirement that the facility notify IEPA prior to testing, reporting of exceedances of the applicable NO<sub>x</sub> limits, and notification if a unit is permanently shut down or submits an emissions averaging plan.

| <b>5. Urea Plant</b>   |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                                     |                     |  |
| Applicable Requirement   | Type                | Location                                     |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314)                 | Applicable Standard | See the Permit, Condition 4.5.2(a) (i) (A)   |
| PM Requirement<br>(35 IAC 212.321(b))                                      | Applicable Standard | See the Permit, Condition 4.5.2(b) (i) (A)   |
| PM Requirement<br>(Construction Permit #75050110)                          | Applicable Limit    | See the Permit, Condition 4.5.2(b) (i) (B)   |
| VOM Requirement<br>(35 IAC 215.301)  | Applicable Standard | See the Permit, Condition 4.5.2(c) (i) (A)   |
| Operational and Production Requirements<br>(Construction Permit #75050110) | Applicable Limit    | See the Permit, Condition 4.5.2. (d) (i) (A) |
| MACT Requirement<br>(40 CFR 63 Subpart FFFF)                               | Applicable Limit    | See the Permit, Condition 4.5.2(e) (i) (A)   |

#### **Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.5.2(a) (ii) ((A))
  - o The Permittee will conduct visible emissions observations weekly, with the option to reduce the frequency of observations to monthly or quarterly if visible emissions are not detected for periods of four weeks or 3 months respectively. If visible emissions are detected at any time, observations will revert to a weekly basis. The Permittee shall use either USEPA RM 22 with an observation period of 6 minutes or USEPA Method RM 9.
- ✓ Recordkeeping as follows (Condition 4.5.2(a) (ii) (B)) :
  - o The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken.

#### **Rationale and Justification for Periodic Monitoring**

IEPA does not expect significant visible emissions from these units during normal operations as the emission units are controlled with scrubbers. Quarterly or monthly observations for visible emissions of the units would be

sufficient to determine if more frequent observations should be conducted. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

**Particulate Matter Emission**

- ✓ Monitoring as follows (Condition 4.5.2(b)(ii)(A)-(H))
  - The Permittee shall comply with the production limitation and recordkeeping requirements of Conditions 4.5.2(d)(i) and 4.5.2(d)(ii).
  - The Permittee shall demonstrate compliance by calculating the emissions on a monthly basis using the emission factor and equation provided in the permit.
  - The Permittee shall develop and maintain written operating procedures for the scrubbers.
  - The Permittee shall maintain records of the pressure drop across the scrubbers using a manometer or equivalent system at least once every two hours. Once regular monitoring of the liquid flow rate begins, the Permittee may choose to discontinue monitoring pressure drop.
  - Beginning no later than January 1, 2020, the Permittee shall monitor the scrubber liquid flow rate and maintain the air to liquid ratio required in the operating procedures.
  - The Permittee shall perform visual external inspections of the scrubbers at least monthly and internal inspections of the scrubbers during each plant turnaround.
  - Within 180 days of the installation of the flow meters on scrubbers UF-R42, G52, G53, and G56 the Permittee shall conduct performance tests. During testing, the Permittee will monitor the air flow rate and liquid flow rate to the scrubbers.
- ✓ Recordkeeping as follows (Condition 4.5.2(b)(ii)(I)-(L)):
  - The Permittee shall keep records of monthly an annual aggregate PM emissions from the urea plant based on operating rates and applicable emission factors with supporting calculations.
  - The Permittee shall keep a copy of the operating procedures for the scrubbers on site at all times. Within 60 days of completion of the performance tests, the Permittee shall update the operating procedures to include the air to liquid ratio range determined to demonstrate compliance with the PM limits.
  - The Permittee shall keep logs of the pressure drops across the scrubbers at least until monitoring of the liquid flow rate has begun.
  - The Permittee shall maintain records of all inspections performed on the scrubbers.
  - The Permittee shall maintain written records of potential to emit calculations for PM including emission factors and their origin.
  - The Permittee shall record periods of time during which the emission unit or control device is not operating normally including an estimate of excess emissions, cause, what corrective action and repairs were made, and what steps were taken to prevent reoccurrence.
  - No later than January 1, 2020, the Permittee shall maintain records of the liquid flowrate and air to liquid ratio of the scrubbers.

**Rationale and Justification for Periodic Monitoring**

Proper use of a scrubber is expected to control PM with an efficiency between 70 to 99 percent. The permit includes conditions requiring the Permittee to

conduct parametric monitoring by recording pressure drop across the scrubber and liquid flow rate to the scrubber and undertake steps such as conducting inspections of the control equipment to ensure that it is operating efficiently. Further, the visual observations required by 4.6.2.ii will provide additional insight as to whether the scrubbers are operating efficiently. When operating properly, the scrubbers are expected to control the emissions from the units to well below the levels required by 35 IAC 212.321(b). Construction Permit #75050110 imposed a 14 ton per hour throughput limit for granulation activities. The controlled emission factors and emissions estimates for each emission unit are as follows:

| Activity             | Pollutant           | Controlled Emission Factor (Lb/Ton) | Maximum Allowable Hourly Emissions (lb/hr) |
|----------------------|---------------------|-------------------------------------|--|
| Evaporator           | PM/PM <sub>10</sub> | 0.088                               | 1.232                                      |
| Granulator           | PM/PM <sub>10</sub> | 0.249                               | 3.486                                      |
| Cooler               | PM/PM <sub>10</sub> | 0.131                               | 1.834                                      |
| Dust Separator       | PM/PM <sub>10</sub> | 0.023                               | .322                                       |
| Granulation PM Total | PM/PM <sub>10</sub> | 0.490                               | 6.86                                       |

Additionally, construction Permit #75050110 limits the hourly throughput for granulation to 14 tons per hour. At this rate, the Process Weight Rate limitation for PM is 39.07 lbs per hour.

The emission factors in the table above are based on stack tests conducted in 1992 and 1993 and assumed control device efficiencies of 85% for Scrubber G52, 85% for Scrubber UF-R42, 79.4% for Scrubber G-56, and 83.3% for Scrubber G-53. It can be seen from the table that the Maximum controlled hourly PM emissions are expected to be well below the PM process weight rate limit.

Construction permit #75050110 imposed PM limits of 3.7 tons per month and 29.5 tons per year from the urea plant. The permit also requires that the facility limit its throughput to 336 tons to the granulation equipment per day and 120,408 tons per year. Using these restrictions on operation of the granulation equipment, the maximum monthly and annual PM emission are determined as follows:

$$\text{Monthly PM emissions} = \frac{336 \text{ tons per day} * 0.490 \frac{\text{lb PM}}{\text{ton}} * 31 \text{ days per month}}{2000 \frac{\text{lbs}}{\text{ton}}} = 2.55 \text{ tons per month}$$

$$\text{Annual PM emissions} = \frac{120,408 \text{ tons per year} * 0.490 \frac{\text{lb PM}}{\text{ton}}}{2000 \frac{\text{lbs}}{\text{ton}}} = 29.5 \text{ tons per year}$$

The estimated monthly PM emissions are expected to be well below the associated emission limit and the annual emissions are expected to meet the associated emission limit. However, the control efficiencies of the scrubber can vary significantly. Therefore, parametric monitoring including measuring pressure drop and performing visual inspections have been required. Per the request of the Permittee, liquid flow rate has been added as parametric monitoring measure. As the facility needs to install liquid flow meters, such monitoring is not required until January 1, 2020. Once monitoring of liquid flow rate has begun, the Permittee may choose to discontinue monitoring pressure drop. IEPA believes the required monitoring will provide necessary assurance that the

scrubbers are operating efficiently to demonstrate compliance with the PM limits.

**Organic Material Emission**

- ✓ Monitoring as follows (Condition 4.5.2(c) (ii) (A))
  - o The Permittee shall comply with the production requirements limiting operation of the granulation equipment and the associated recordkeeping requirements.
- ✓ Recordkeeping as follows (Condition 4.5.2(c) (ii) (B)-(C)):
  - o The Permittee is required to comply with the recordkeeping requirements for the operational and production limitations.
  - o The Permittee is required to retain records of emissions calculations, including emission factors and emission factor origin, demonstrating that the potential emissions from the Granulation process does not exceed the 8 lb/hour limitation of 35 IAC 215.301.

**Rationale and Justification for Periodic Monitoring**

IEPA estimates the potential emission from the Granulator as follows:

The VOM emission factor is based on engineering estimates

| <u>Activity</u> | <u>Pollutant</u> | <u>Controlled<br/>Emission<br/>Factor<br/>(Lb/Ton)</u> | <u>Maximum<br/>allowable<br/>process rate<br/>(tons/hour)</u> | <u>Maximum VOM<br/>Emissions<br/>(lbs/hr)</u> |
|-----------------|------------------|--|---|---|
| Granulator      | VOM              | 0.011  | 14  | .154  |

The emissions from the granulator are anticipated to be well below the 8 lb/hour limitation. Therefore, IEPA believes that it is appropriate to require the facility to comply with the operational restrictions limiting the production of granulated urea and maintain emissions calculations to demonstrate compliance with the VOM limit.

**Operational and Production Requirements**

- ✓ Recordkeeping as follows (Condition 4.5.2(d) (ii) (A)):
  - o The Permittee shall keep written records of the throughput and operating hours of each emission unit.

**Rationale and Justification for Periodic Monitoring**

Periodic Monitoring is sufficient because sufficient information is required to be monitored and maintained to ensure compliance with the hourly, daily, and annual operational restrictions for the granulation processes.

**MACT Requirements- 40 CFR 63 Subpart FFFF**

The Permittee has selected to comply with 40 CFR Part 65 Subpart F in order to comply with 40 CFR Part 63 Subpart FFFF. The applicable requirements are incorporated into the Permit in Section 5.2.

**Applicability Discussion**

**40 CFR 63 Subpart FFFF: Miscellaneous Organic Chemical Manufacturing (MON)**

The Urea Plant utilizes UF-85 resin which is a liquid that includes formaldehyde exceeding 5% by weight. As such, the pumps, valves, and connectors from the UF-85 resin storage tank to the point where it is injected into the



liquid urea enroute to the granulator is equipment in organic HAP service as defined in 40 CFR 63.2550. Pursuant to 40 CFR 63.2480 and Table 6 of 40 CFR 63 Subpart FFFF, the Permittee has selected to comply with 40 CFR Part 65 Subpart F. The requirements of 40 CFR Part 65 Subpart F are incorporated into the permit in Section 5.2.

#### **Non-Applicability Discussion**

The Urea Plant emission units are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the emission units do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

#### **Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

| <b>6. Nitric Acid Plants</b>  |                     |  |
|---|---------------------|--|
| <b>Applicable Requirements Summary</b>  |                     |  |
| Applicable Requirement  | Type                | Location   |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314)                                    | Applicable Standard | See the Permit, Condition 4.6.2(a) (i) (A)       |
| Opacity Requirement<br>(40 CFR 60.72(a) (2))  | Applicable Standard | See the Permit, Condition 4.6.2(a) (i) (B)       |
| Opacity Requirement<br>(35 IAC 217.381)   | Applicable Standard | See the Permit, Condition 4.6.2(a) (i) (C)       |
| PM Requirement<br>(35 IAC 212.321(a))   | Applicable Standard | See the Permit, Condition 4.6.2(b) (i) (A)       |
| NO <sub>x</sub> Requirement<br>(40 CFR 60.72(a) (1))  | Applicable Standard | See the Permit, Condition 4.6.2(c) (i) (A)       |
| NO <sub>x</sub> Requirement<br>(35 IAC 217.381)   | Applicable Standard | See the Permit, Condition 4.6.2(c) (i) (B)       |
| NO <sub>x</sub> Requirement<br>(Construction Permit #11030025 and Consent Decree 11-CV-50358) | Applicable Limits   | See the Permit, Condition 4.6.2(c) (i) (C) - (D) |
| NO <sub>x</sub> Requirement<br>(Construction Permit #14030058)                                | Applicable Limit    | See the Permit, Condition 4.6.2(c) (i) (E)       |
| NO <sub>x</sub> Requirement<br>(Construction Permits #88090042 and #9750064)                  | Applicable Limit    | See the Permit, Condition 4.6.2(c) (i) (F)       |
| Operational and Production Requirements<br>(Construction Permit #14030058)                    | Applicable Limit    | See the Permit, Condition 4.6.2(d) (i) (A)       |
| Operational and Production Requirements<br>(Construction Permit #11030025)                    | Applicable Limit    | See the Permit, Condition 4.6.2(d) (i) (B)       |
| Operational and Production Requirements<br>(Construction Permit #11030041)                    | Applicable Limit    | See the Permit, Condition 4.6.2(d) (i) (C)       |
| Operational and Production Requirements<br>(Construction Permits #88090042 and #97050064)     | Applicable Limit    | See the Permit, Condition 4.6.2(d) (i) (D)       |

#### **Visible Emissions (i.e., Opacity)**

✓ Monitoring as follows (Condition 4.6.2(a) (ii) (A)):

To ensure compliance with the opacity limit, the Permittee shall perform either USEPA Method 9 or USEPA Method 22 testing on a weekly basis. At least one visible emissions observation shall be conducted during periods of startup or shutdown per quarter unless no startups or shutdowns occur during the quarter. Should the observer detect opacity during a USEPA Method 22 test, a follow-up Method 9 monitoring must be performed within 24 hours to quantify the

percentage of opacity from the affected emissions unit. If an exceedance is detected, the Permittee must take corrective action within 48 hours.

- ✓ Recordkeeping as follows (Condition 4.6.2(a)(ii)(B)):
  - o The Permittee shall maintain records of the dates, and times of all Method 9 or Method 22 tests performed. Additionally, records shall be maintained of the name of the observer, the total elapsed time for each observation, identification of equipment which was observed and the findings of the observation included presence of VE or percentage of opacity. Further, the operational status of each unit observed will be recorded as well as any corrective actions taken.

Rationale and Justification for Periodic Monitoring

IEPA does not expect significant visible emissions from these units during normal operations, however given the low opacity limitations of NSPS G and the SIP, more frequent observations are necessary. IEPA considers weekly observations for visible emissions are determined to be sufficient. As there are concerns that the opacity may increase during periods of startup and shutdown, monitoring must be conducted at least quarterly during a startup or shutdown unless no startups or shutdowns occur in a given quarter. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

Particulate Matter Emission

- ✓ Monitoring as follows (Condition 4.6.2(b)(ii)(A))
  - o The Permittee shall comply with the operational and production limitations and monitoring compliance to demonstrate compliance with the PM limitation.
- ✓ Recordkeeping as follows (Condition 4.6.2(b)(ii)(B)):
  - o The Permittee shall comply with the Operational and Production recordkeeping requirements to demonstrate compliance with the PM emission limit.

Rationale and Justification for Periodic Monitoring

Periodic Monitoring is sufficient for these emission units because:

The process weight rate for Nitric Acid Plant #1 is 7,400 lbs NH<sub>3</sub> per hour (3.7 tons per hour). The process weight rate for Nitric Acid Plant #2 is 4,500 lbs NH<sub>3</sub> per hour (2.25 tons per hour). Pursuant to 212.321(b), the maximum allowable PM for Nitric Acid Plant #1 is 5.11 lbs/hour and 3.92 lbs/hour for Nitric Acid Plant #2. Because of the nature of the process, IEPA does not expect the nitric acid plants to emit a significant quantity of PM, and believes that operation in accordance with good air pollution practices is sufficient to demonstrate compliance.

Nitrogen Oxides Emissions

- ✓ Monitoring as follows (Condition 4.6.2(c)(ii)(A)-(O))
  - o The Permittee shall conduct monitoring in accordance with the CEMS Plan for Nitric Acid Plant #1

- o The Permittee shall comply with the CEMS requirements of NSPS G for Nitric Acid Plant #1 and #2.
  - o To demonstrate compliance with the lb/hour and ton per year limitations originating from construction permits 88090042 and 9750064, the Permittee shall comply with the recordkeeping requirements and calculate emissions using the equation provided in the permit.
  - o The Permittee shall conduct emission tests according to the requirements of NSPS G within 5 years of the issuance of the permit. The emissions tests will be repeated every five years.
  - o Additionally, the Permittee shall conduct emissions tests for N<sub>2</sub>O, NO<sub>x</sub> and phenol disulfonic acid upon request by IEPA.
- ✓ Recordkeeping as follows (Condition 4.6.2(c) (ii) (P)-(X)):
- o The Permittee shall retain all data generated by the NO<sub>x</sub> CEMS for Nitric Acid Plant 1 including data generated by the NO<sub>x</sub> analyzer and stack flowmeter.
  - o The Permittee shall maintain all records of hourly NO<sub>x</sub> emissions from Nitric Acid Plant 1
  - o For Plant 1, the Permittee shall keep records of the NO<sub>x</sub> emission rates of the SCR system, an operating log or other record identifying periods that the SCR is not operational, a maintenance and repair log, and records of usage of the SCR reagent on a monthly basis.
  - o The Permittee shall maintain records of the three hour average of pounds NO<sub>x</sub>/Ton of 100% nitric acid produced rolled hourly, and the 365 day rolling average of pounds NO<sub>x</sub>/Ton of 100% nitric acid produced, rolled daily for Plant 1.
  - o The Permittee shall maintain records for each NO<sub>x</sub> monitoring system including the NO<sub>x</sub> measurements determined by the CEMS, the annual RATA/quarterly OGA data, results of daily calibration checks, records of all maintenance and adjustments performed, and all quarterly reports submitted in accordance with 40 CFR 60.7(c).
  - o The Permittee shall maintain records of the occurrence and duration of all startups and shutdowns.
  - o The Permittee shall maintain daily records of the type of nitric acid produced (i.e. the concentration of nitric acid) and production converted to 100% basis.
  - o The Permittee shall maintain records of the daily production rate and hours of operation of Plant 1 and Plant 2 separately.
  - o The Permittee shall follow the incorporated CAM plan.

Rationale and Justification for Periodic Monitoring

- Both Nitric Acid Plant #1 and Plant #2 are equipped with CEMS which can be used to determine compliance with NO<sub>x</sub> limitations. Additionally, the permit and NSPS G include procedures to determine compliance with the NSPS NO<sub>x</sub> limits. The lb per hour and ton per year emissions limits for Plant 1 and Plant 2 from Construction Permits 88090042 and 9750064 include emission factors and equations to determine compliance. Further, the permit contains requirements for testing, calibration checks, and performance evaluations of the CEMS. The permit contains sufficient recordkeeping requirements to ensure compliance with the limitations. For example, the Permittee is required to maintain records of production rates, type of acid produced, and occurrence and duration of startups and shutdowns. Finally, the Permittee is required to comply with a CAM plan for Nitric Acid Plant 1 and Plant 2. IEPA believes that the permit contains sufficient information to demonstrate compliance with the NO<sub>x</sub> limitations.

**Operational and Production Requirements**

- ✓ Monitoring as follows (Condition 4.6.2(d) (ii) (A)-(C))
  - The Permittee shall equip, operate, and maintain the Plant 1 SCR system with instrumentation to measure relevant operating parameters including the affected SCR reagent injection rate and flue gas temperature at the inlet of the SCR catalyst.
  - The Permittee shall maintain records of the measurements made at Plant 1 and records of the maintenance and operational activity associated with the systems.
  - The Permittee shall operate instrumentation for the temperature of the flue gas from Nitric Acid Plant #1 upstream of the associated catalytic converter.
- ✓ Recordkeeping as follows (Condition 4.6.2(d) (ii) (D)-(F)):
  - The Permittee shall maintain records of the emissions and operation of Nitric Acid Plant 1 and 2 including the daily production rates and hours of operation and the types of nitric acid produced.
  - The Permittee shall keep records of the vendor's operating and maintenance procedures for the Nitric Acid Plant #1 catalytic converter and the maintenance and repair log for the catalytic converter.
  - The Permittee shall keep records of the Permittee's operating and maintenance procedures for the Plant #2 catalyst bed.
  - During periods when the Nitric Acid Plant #2 is operated with the N<sub>2</sub>O abatement catalyst bed the Permittee shall record the data for the N<sub>2</sub>O emissions of the plant as monitored and the combination of representative data for the emissions of the plant as determined by testing.
  - The Permittee shall maintain a maintenance and repair log for the Plant 2 N<sub>2</sub>O abatement catalyst bed.

**Rationale and Justification for Periodic Monitoring**

IEPA considers the incorporated monitoring to be sufficient because required monitoring and recordkeeping of the Plant 1 SCR system provides enough information to determine if the SCR is being operated efficiently which supports the requirement that Plant 1 and the Plant 1 SCR be operated in a manner consistent with good air pollution control practices. The permit also requires the facility to record the daily operation and production rate of Nitric Acid Plant 1 and Plant 2 separately and the types of nitric acid produced. This provides sufficient monitoring to demonstrate compliance with the Title 1 construction permit limits on nitric acid production.

**Applicability Discussion**

**40 CFR Part 60 Subpart G: Standards of Performance for Nitric Acid Plants**

Nitric Acid Plant 1 and Plant 2 are subject to 40 CFR 60 Subpart G because they were constructed July, 1978. Pursuant to 40 CFR 60.70, since these nitric acid production units were constructed after August 17, 1971, they are subject to Subpart G. However, since the units did not commence construction or modification after October 14, 2011, they are not subject to 40 CFR 60 Subpart Ga. While Tower 2 was modified in 2013, the modification does not constitute a modification under 40 CFR 60.14 because the physical or operational change at the existing facility did not result in an increase in the emissions rate.

**40 CFR Part 64: Compliance Assurance Monitoring**

Nitric Acid Plant 1 and Plant 2 are subject to the requirements of 40 CFR Part 64 because each emission unit's pre-controls emissions exceed 100 tons of NO<sub>x</sub> per year. Additionally the units each rely on add-on control devices to

demonstrate compliance with applicable standards and limits. As such, the CAM plans for Nitric Acid Plant 1 and Plant 2 have been included in Condition 7.4 and Tables 7.4.1 and 7.4.2.

#### **Non-Applicability Discussion**

No non-applicability determinations were made for Nitric Acid Plant 1 or Nitric Acid Plant 2.

#### **Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

#### **Federal Reporting Discussion**

Permit Section 4.6.5.b contains additional federal reporting requirements from 40 CFR 60.73(e).

#### **State Reporting Discussion**

Additional reporting required by construction permits #11030025, #11030041, and #13100010 have been incorporated into permit section 4.6.5.c.

#### **Semi-Annual Reporting for NO<sub>x</sub>**

Pursuant to 40 CFR 60.7(c) and (d) the Permittee shall submit a written report of excess emissions to the Illinois EPA by the 30<sup>th</sup> day following the end of each six month period. Permit condition 4.6.5.d incorporates the semi-annual reporting requirement into the CAAPP permit.

| <b>7. Ammonium Nitrate Plant</b>   |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                                     |                     |  |
| Applicable Requirement   | Type                | Location   |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314)                 | Applicable Standard | See the Permit, Condition 4.7.2(a) (i) (A)       |
| Opacity Requirement<br>(35 IAC 217.301)                                    | Applicable Standard | See the Permit, Condition 4.7.2(a) (i) (B) - (C) |
| PM Requirement<br>(35 IAC 212.321(b))                                      | Applicable Standard | See the Permit, Condition 4.7.2(b) (i) (A)       |
| PM Requirement<br>(Construction Permit #98020034)                          | Applicable Limit    | See the Permit, Condition 4.7.2(b) (i) (B) - (C) |
| NO <sub>x</sub> Requirement<br>(35 IAC 217.301(a) (1))                     | Applicable Standard | See the Permit, Condition 4.7.2(c) (i) (A)       |
| Operational and Production Requirements<br>(Construction Permit #98020034) | Applicable Limit    | See the Permit, Condition 4.7.2(d) (i) (A)       |

#### **Applicability of 35 217.301**

As the Permittee did not provide sufficient information in the application or in response to information requests from IEPA to justify that 35 IAC 217.301(a) (2) does not apply, the condition has been incorporated into the permit. Additionally, the exemption associated with the 35 IAC 217.301(a) (2) has been incorporated into the permit. The Permittee may choose to either follow the opacity monitoring requirements to demonstrate compliance with the 5% opacity limit, or maintain records of the nitric acid usage and NO<sub>x</sub> emissions sufficient to demonstrate that the exemption of 35 IAC 217.301(c).

#### **Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.7.2(a) (ii) (A) - (B))
  - o The Permittee will conduct visible emissions observations weekly, with the option to reduce the frequency of observations to monthly or

quarterly if visible emissions are not detected for periods of four weeks or 3 months respectively. If visible emissions are detected at any time, observations will revert to a weekly basis. The Permittee shall use either USEPA RM 22 with an observation period of 6 minutes or USEPA Method RM 9.

- o Additionally, upon request by IEPA, a visual determination of the opacity of emissions from the ammonium nitrate neutralizer shall be made by an independent certified observer using Method 9.
- o As the Permittee did not provide sufficient information in the application to justify that 35 IAC 217.301(a)(2) does not apply, the conditions have been incorporated into the permit. Additionally, the exemption associated with the 35 IAC 217.301(a)(2) has been incorporated into the permit. The Permittee may choose to either follow the opacity monitoring requirements to demonstrate compliance with the 5% opacity limit, or maintain records of the nitric acid usage and NO<sub>x</sub> emissions sufficient to demonstrate that the exemption of 35 IAC 217.301(c)

✓ Recordkeeping as follows (Condition 4.7.2.a.ii(C)-(D)):

The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken. Additionally, should the Permittee claim the exemption of 35 IAC 217.301(c), the Permittee must maintain records of the nitric acid usage and NO<sub>x</sub> emissions sufficient to demonstrate that the exemption of 35 IAC 217.301(c).

Rationale and Justification for Periodic Monitoring

IEPA does not expect significant visible emissions from this unit during normal operations as the emission unit is controlled with a scrubber. Quarterly or monthly observations for visible emissions of the units would be sufficient to determine if more frequent observations should be conducted. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act. Between the opacity monitoring requirements and the optional recordkeeping requirements to demonstrate that the exemption from 35 IAC 217.301 applies (maintaining records of the nitric acid usage of the ammonium nitrate plant or maintaining records demonstrating that NO<sub>x</sub> emissions are less than 1 ton per year) sufficient monitoring and recordkeeping is required to demonstrate compliance with the 35 IAC 217.301.

**Particulate Matter Emission**

✓ Monitoring as follows (Condition 4.7.2(b)(ii)(A)-(J))

- o The pressure drop across the packed bed scrubber and the brink HV mist eliminator shall be monitored daily and the presence of visible emissions using RM 22 shall be monitored weekly.
- o Compliance with the annual PM limit of construction permit #98020034 shall be determined from a running total of 365 days of ammonium nitrate neutralizer data collected on a daily basis.
- o Compliance with the emission limits shall be based on recordkeeping requirements and the emission factors and formulas included in the permit.
- o The Permittee shall perform periodic maintenance in accordance with the vendor recommendations.

- o No later than January 1, 2020, the Permittee shall monitor the scrubber air rate and scrubber liquid flow rate and maintain the liquid flow rate according to the air to liquid ratio recorded in the operating procedures. The liquid flow rate shall be measured at least once every two hours.
  - o Within 180 days of installation of the scrubber liquid flow meter, the Permittee shall conduct performance testing using RM 5. During the performance test the Permittee will monitor the air flow rate to the scrubber and the scrubber liquid flow rate.
- ✓ Recordkeeping as follows (Condition 4.7.2(b) (ii) (K)-(O)):
- o The Permittee shall maintain a copy of the operating procedures for the scrubber onsite at all times. Within 60 days of completion of the required performance testing, the Permittee shall update the operating procedures to include the air to liquid ratio range determined to demonstrate compliance with the PM limits.
  - o The Permittee shall maintain records of the periodic maintenance of the ammonium nitrate neutralizer scrubber and mist eliminator.
  - o The Permittee shall record of the pressure drop across the scrubber and maintain records of the results of the weekly visible emission observations.
  - o The Acid Neutralizer is subject to CAM and shall comply with the monitoring requirements of the CAM plan.

#### Rationale and Justification for Periodic Monitoring

The potential PM emissions when the control devices are operated efficiently are expected to be considerably below the limit of 35 IAC 212.321 (b). The process weight rate for the unit is 22.69 tons per hour. Pursuant to 35 IAC 321 (b), the maximum allowable PM emission are therefore 13.29 lbs PM/hour.

| Emission Unit    | Pollutant | Controlled Emission Factor (Lb/Ton) | Maximum production rate (tons/hr) | Maximum Emissions (lbs/hr) | Maximum Allowable Daily Production (tons/day) | Maximum emissions (tons/day) | Maximum Allowable Annual Production (tons/year) | Maximum emissions (tpy) |
|------------------|-----------|-------------------------------------|-----------------------------------|----------------------------|---|------------------------------|---|-------------------------|
| Acid Neutralizer | PM        | .25                                 | 13.25                             | 3.3125                     | 600   | 0.075                        | 219,000   | 27.38                   |

Emission estimates were calculated using the following equations:

$$\text{Emissions (lbs/hr)} = [ (\text{Throughput, ton/hour}) \times (\text{Controlled Emission Factor, lb/ton}) ]$$

$$\text{Emissions (ton)} = [ [ (\text{Throughput, ton}) \times (\text{Controlled Emission Factor, lb/ton}) ] / (2000 \text{ lb/ton}) ]$$

Hourly PM emissions are expected to be 3.3125 lbs, which is significantly below the process weight rate limitation of 13.29 lbs/hr. Additionally, the maximum daily PM emissions (0.075 tons per day) has a 25% compliance margin from the PM limit of 0.10 tons per day established in construction permit #98020034. The annual PM emissions are not expected to exceed the annual PM limit. The monitoring of control equipment will provide additional means of ensuring that the control equipment is operating efficiently and that the facility is able to comply with its numeric PM limits. The Permittee has requested to replace the current parametric monitoring with the requirement to monitor liquid flow rate. However, as compliance testing has not yet been completed to determine an appropriate indicator range for the air to liquid ratio, the request to replace the pressure drop and visible emission monitoring incorporated into the CAM plan has not been granted. Instead, the permit requires that the facility

install liquid flow meters by January 1, 2020 and conduct performance tests and determine an appropriate liquid flow indicator range. Upon completing the performance testing and determining an appropriate indicator range, the Permittee may request to revise its CAM plan to replace the pressure drop and visible emission requirements with the liquid flow rate.

#### **Nitrogen Oxide Emissions**

- ✓ Recordkeeping as follows (Condition 4.7.2(c)(ii)(A)-(B)):
  - o The facility shall maintain records of nitric acid usage demonstrating that the annual usage of nitric acid; or
  - o The facility shall maintain emissions calculations or other documentation sufficient to justify that the annual nitrogen oxide emissions do not exceed 5 tons per year (or 1 ton per year if the Permittee is claiming the exemption of 35 IAC 217.301(c)).

#### **Rationale and Justification for Periodic Monitoring**

IEPA given the nature of the operation, IEPA expects that NO<sub>x</sub> emissions from ammonium nitrate plant are unlikely to exceed 5 tons per year, however from the information provided in the permit application it was not possible to determine if emissions would be less than 1 ton per year. It is appropriate to require the Permittee to maintain records of emission estimates or other justification sufficient to demonstrate that the annual NO<sub>x</sub> emissions do not exceed 5 tons per year. Alternatively, the Permittee may maintain records indicating NO<sub>x</sub> emissions do not exceed 1 ton per year or maintain records of the nitric acid usage to demonstrate that the exemption of 35 IAC 217.301(c) applies. The required monitoring is sufficient to demonstrate compliance with the applicable NO<sub>x</sub> limitations.

#### **Operational and Production Requirements**

- ✓ Recordkeeping as follows (Condition 4.7.2(d)(ii)(A)-(B)):
  - o The Permittee shall keep daily production records for the nitric acid neutralizer including production of ammonium nitrate (100% basis)
  - o The Permittee shall maintain records of annual production on a 365 day running total for the ammonium nitrate neutralizer on a 100% ammonium nitrate basis.

#### **Rationale and Justification for Periodic Monitoring**

Maintaining daily production records and records of annual production of ammonium nitrate is sufficient to determine compliance with daily and annual production limitation. This is standard monitoring requirements for such production limits.

#### **Applicability Discussion**

##### **40 CFR Part 64: Compliance Assurance Monitoring**

The Acid Neutralizer is subject to the requirements of 40 CFR Part 64 because the emission unit's pre-controls emissions exceed 100 tons of PM per year. Additionally the unit relies on an add-on control devices to demonstrate compliance with applicable standards and limits. As such, the CAM plan for AN-1 and has been included in Condition 7.4 and Tables 7.4.3

#### **Non-Applicability Discussion**



- The nitric acid neutralizer is not subject to the New Source Performance Standards (NSPS) for Ammonium Sulfate Manufacture, 40 CFR Part 60 Subpart PP, because the affected nitric acid neutralizer does not manufacture ammonium sulfate.
- The nitric acid neutralizer is not subject to 35 IAC Part 217, Subpart O, Nitric Acid Manufacturing Process, because the affected nitric acid neutralizer does not produce nitric acid.

**Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

**State Reporting Discussion**

Additionally reporting requirements from Construction Permit #98020034 were incorporated into the permit in section 4.7.5.b. These conditions require that the facility condense records into a monthly report which will sent to Illinois EPA. The report shall include the daily production of ammonium nitrate on a 100% ammonium nitrate basis, the annual production, the daily emission calculations, current annual emissions, and a list of any days in which the daily or annual production or emissions exceeded the allowable limits. Additionally, in conjunction with the annual emissions reporting requirements, the facility is required to include each month's daily and annual ammonium nitrate production for the preceding calendar year, emissions totals for the preceding calendar year, and whether there have been any exceedances during the prior calendar year.

| 8. Nitric Acid Storage                          |                        |  |
|---|------------------------|--|
| Applicable Requirements Summary                 |                        |  |
| Applicable Requirement                          | Type                   | Location                                   |
| NO <sub>x</sub> Requirement<br>(35 IAC 217.381) | Applicable<br>Standard | See the Permit, Condition 4.8.2(a) (i) (A) |

**Nitrogen Oxides Emissions**

- ✓ Monitoring as follows (Condition 4.8.2(a) (ii) (A))
  - o The Permittee shall monitor the temperature of the storage tanks and ensure that the temperature is maintained below 75°C.
- ✓ Recordkeeping as follows (Condition 4.8.2(a) (ii) (B)-(C)):
  - o The Permittee shall record the weekly temperature measurements
  - o The Permittee shall record the dates during which a tank is empty.

**Rationale and Justification for Periodic Monitoring**

Nitric Acid is not volatile unless it is at high temperatures. As such, IEPA considers an exceedance of the limit unlikely when the temperature of the storage tank is below 75°C. Monitoring of the temperature and maintaining it below 75°C when the tank holds nitric acid is deemed sufficient to determine compliance with the NO<sub>x</sub> limit of 35 IAC 217.381.

**Non-Applicability Discussion**

- The nitric acid storage tanks are not subject to the New Source Performance Standards (NSPS) for VOL Storage Vessels, 40 CFR Part 60 Subpart Kb, because the affected nitric acid tanks do not store volatile organic liquid.

- The nitric acid storage tanks are not subject to 35 IAC 215 Subpart B, because the tanks are not used to store an organic material.

**Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

| <b>9. Power House Combustion Units</b>                         |                     |  |
|--|---------------------|--|
| <b>Applicable Requirements Summary</b>                         |                     |  |
| Applicable Requirement   | Type                | Location   |
| Opacity Requirement<br>(35 IAC 212.301 and 35 IAC 212.314)     | Applicable Standard | See the Permit, Condition 4.9.2(a) (i) (A)       |
| CO Requirement<br>(35 IAC 216.121)                             | Applicable Standard | See the Permit, Condition 4.9.2(b) (i) (A)       |
| NESHAP Work Practice Requirements<br>(40 CFR 63 Subpart DDDDD) | Applicable Standard | See the Permit, Condition 4.9.2(c) (i) (A) - (C) |

**Visible Emissions (i.e., Opacity)**

- ✓ Monitoring as follows (Condition 4.9.2(a) (ii) (A))
  - o The Permittee will conduct visible emissions observations weekly, with the option to reduce the frequency of observations to monthly or quarterly if visible emissions are not detected for periods of four weeks or 3 months respectively. If visible emissions are detected at any time, observations will revert to a weekly basis. The Permittee shall use either USEPA RM 22 with an observation period of 6 minutes or USEPA Method RM 9.
- ✓ Recordkeeping as follows (Condition 4.9.2(a) (ii) (B)) :
  - o The Permittee shall keep records of all observations along with the operational status of each emission unit, indication of monitoring frequency, and descriptions of any corrective actions taken.

Rationale and Justification for Periodic Monitoring

As the boilers burn natural gas, IEPA does not expect that visible emissions would exceed the limitation. Quarterly or monthly observations for visible emissions of the units would be sufficient to determine if more frequent observations should be conducted. Note that the Permittee is not precluded from conducting additional observations on individual emission units should it suspect that any of the emissions standards are being threatened. Illinois EPA may order additional evaluations based on air quality complaints, a review of inspection reports and/or compliance certifications, and for other reasons as allowed by the Act.

**Carbon Monoxide Emissions**

- ✓ Monitoring and Recordkeeping as follows (Condition 4.9.2(b) (ii) (A) - (C))
  - o Compliance with the CO limit shall be determined by compliance with the requirements of 40 CFR 63 Subpart DDDDD.
  - o The Permittee shall maintain records demonstrating that the boilers are only physically capable of burning natural gas.

Rationale and Justification for Periodic Monitoring

Carbon monoxide emissions from the boilers are associated with inefficient combustion. The units are subject to the tune-up requirements

of 40 CFR 63 Subpart DDDDD, which will further ensure that they are operating efficiently and reduce CO emissions. Further, the MACT requires performance testing which will be used to demonstrate compliance with the SIP limitation. The Permittee is also required to maintain records demonstrating that the units are physically capable of firing only natural gas.

**NESHAP Requirements**

- ✓ Monitoring as follows (Condition 4.9.2(c)(ii)(A)-(B))
  - o The Permittee shall conduct an annual tune-up of Boilers S-5, S-6 and S-7
- ✓ Recordkeeping as follows (Condition 4.9.2(c)(ii)(D)):
  - o The Permittee must record and maintain an annual report containing the concentration of CO in the effluent stream in ppmv, a description of any corrective actions taken during the tune-up, the type and amount of fuel oil used over the 12 months prior to the tune-up.

**Rationale and Justification for Periodic Monitoring**

The boilers are not subject to any numeric emissions limitations under the Boiler MACT, only that they must conduct annual tune-ups. The MACT standard contains adequate recordkeeping requirements to ensure compliance with the required provisions of the standard.

**Applicability Discussion**

**40 CFR 63 Subpart DDDDD: Boiler MACT**

Boilers S-5, S-6, and S-7 are industrial boilers that are part of the facility, a major source of HAPs and pursuant to 40 CFR 63.7485 are therefore subject to the Boiler MACT. However, pursuant to 40 CFR 63.7500(e), none of the boilers are subject to emissions limits. Boilers S-5, S-6, and S-7 subject to the annual tune up requirements of 40 CFR 63.7540(a)(10) because they are natural gas fired boilers with a heat input greater than 10 mmBtu/hr.

The facility completed the requirement of 40 CFR 63.7530(e) to perform a one-time energy assessment on October 13-16 2014, so it is not necessary to include this requirement in the CAAPP permit.

**Non-Applicability Discussion**

- Boilers S-5, S-6, and S-7 are not subject to the New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60 Subpart Db, because the only boiler with a heat input greater than 100mm Btu/hr (S-7), was constructed prior to June 19, 1984 and has not been modified or reconstructed.
- Boilers S-5, S-6, and S-7 are not subject to 35 IAC 217.141, because the actual heat input of each affected boiler is less than 73.2 MW (250 mmBtu/hr).
- Boilers S-5, S-6 and S-7 are not subject to 35 IAC 217 Subpart D or Subpart E because the source is located in Jo Daviess County which is not one of the areas listed in 35 IAC 217.150.
- Boilers S-5, S-6, and S-7 not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the boilers do not use an add-on control device to achieve compliance with an emission limitation or standard.

**Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

**Federal Reporting Discussion**

Section 4.9.5.b contains additional annual compliance reporting requirements specific to 40 CFR 63 Subpart DDDDD.

| <b>10. Petroleum Storage Tanks</b>               |                        |   |
|--|------------------------|---|
| <b>Applicable Requirements Summary</b>           |                        |   |
| Applicable Requirement                           | Type                   | Location  |
| VOM Requirement<br>(35 IAC 215.301)              | Applicable<br>Standard | See the Permit, Condition<br>4.10.2(a) (i) (A)  |
| Work Practice Requirement<br>(35 IAC 215.122(b)) | Applicable Limit       | See the Permit, Condition<br>4.10.2.(b) (i) (A) |

**Organic Material Emission**

- ✓ Recordkeeping as follows (Condition 4.10.2(a) (ii) (A)-(B)) :
  - o The Permittee shall maintain identification and properties of each organic liquid stored such as vapor pressure and molecular weight.
  - o The Permittee shall maintain records of the throughput of each organic liquid through the tank and the annual VOM emissions calculated using an approved methodology such as the TANKS program.

**Rationale and Justification for Periodic Monitoring**

IEPA believes that it is unlikely that a storage tank with a submerged loading pipe would exceed the hourly emissions limitation of 35 IAC 215.301 as a submerged loading pipe greatly reduces the VOM emissions from loading operations. As such, IEPA believes that maintaining records of the properties of the liquids stored in the tank, the throughput of the tank and requiring the Permittee to evaluate VOM emissions using the TANKS program or other approved methodology is sufficient to demonstrate compliance with the SIP limitation.

**Work Practice Requirement**

- ✓ Recordkeeping as follows (Condition 4.10.2(b) (ii) (A)-(B)) :
  - o The Permittee shall maintain records indicating the presence of a submerged loading pipe.
  - o The Permittee shall maintain identification and properties of each organic liquid stored such as vapor pressure and molecular weight.

**Rationale and Justification for Periodic Monitoring**

Maintaining records of whether the tanks are equipped with a submerged loading pipe is sufficient to determine compliance with the limitation of 35 IAC 215.122(b), and is equivalent to the monitoring required for similar sources. The Permittee is also required to maintain records of the properties of the liquids stored in the tank so that it can be determined if the exemption for compounds for which no odor nuisance exists applies.

**Non-Applicability Discussion**

- The petroleum storage tanks are not subject to the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60 Subpart K, Ka because the tanks capacity do not exceed 40,000 gallons. The tanks are not subject to 40 CFR Part 60 Subpart Kb because the capacity of the tanks do not exceed 75 cubic meters.
- The petroleum storage tanks are not subject to 35 IAC 215.583, because the tanks are not located in a county listed in 35 IAC 215.583(b) (4) .
- The petroleum storage tanks are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the units do not use an add-on control device to achieve compliance with an emission limitation or standard.

### **Prompt Reporting Discussion**

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

### **3.8 Insignificant Activities Discussion**

| <b>Applicable Requirements Summary</b>   |                         |                                      |
|--|-------------------------|--------------------------------------|
| Applicable Requirement   | Type                    | Location                             |
| NESHAP Requirement   | Applicable Standard     | See the Permit, Condition 6.1(a) (i) |
| SIP Requirements <ul style="list-style-type: none"> <li>• 35 IAC 212.123(a) and (b)</li> <li>• 35 IAC 212.321 and 322</li> <li>• 35 IAC 214.301</li> <li>• 35 IAC 215.301, 215.302, 215.303, 215.304</li> <li>• 35 IAC 215.122(b)</li> </ul> | Applicable Requirements | See the Permit Condition 6.4         |

### **National Emission Standards for Hazardous Air Pollutants (NESHAP)**

- Presumed by rule as the source is subject to a standard promulgated after Nov. 1990.
- Monitoring is consistent with other sources in this source category.

### **State Requirements (SIP)**

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.

### **Applicability Discussion**

#### **40 CFR 63 Subpart FFFF: Miscellaneous Organic Chemical Manufacturing (MON)**

The Urea Plant utilizes UF-85 resin, which is a liquid that includes formaldehyde exceeding 5% by weight. As such, the pumps, valves, and connectors from the UF-85 resin storage tank to the point where it is injected into the liquid urea enroute to the granulator is equipment in organic HAP service as defined in 40 CFR 63.2550. Pursuant to 40 CFR 63.2480 and Table 6 of 40 CFR 63 Subpart FFFF, the Permittee has selected to comply with 40 CFR Part 65 Subpart F. The requirements of 40 CFR Part 65 Subpart F are incorporated into the permit in Section 5.2.

Pursuant to 40 CFR 63.2550, the UF-85 storage tank is a Group 2 process tank because its capacity of 6,000 gallons is less than the threshold capacity of

10,000 gallons. Pursuant to Table 4 of 40 CFR 63 Subpart FFFF, group 2 storage tanks are not subject to any additional requirements under the MON.

**40 CFR Part 63 Subpart ZZZZ: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

Pursuant to 40 CFR 63.6590(a)(1)(ii), the ammonia control room engine is considered existing stationary RICE because it has a site rating of less than 500 HP, is located at a major source of HAP emissions, and commenced construction prior to June 12, 2006. The unit is subject to the provisions pertaining to emergency engines. These requirements have been incorporated into the permit at 6.1(a)(ii).

**Non-Applicability Discussion**

IEPA evaluated the emergency engines to determine if they were subject to applicable requirements of 40 CFR Part 60 Subpart IIII or 40 CFR Part 63 Subpart ZZZZ.

The facility contains three stationary compression ignition (CI) internal combustion engines. Details of the engines are included in the table below.

| Location             | Unit ID   | In Service Date | Engine Manufacture Date | Hp  | Displacement (in <sup>3</sup> ) | Cylinders | Displacement per Cylinder (L) | Fuel          |
|----------------------|-----------|-----------------|-------------------------|-----|---------------------------------|-----------|-------------------------------|---------------|
|                      | [EAM ID]  |                 |                         |     |                                 |           |                               |               |
| Ammonia Control Room | 054-G-003 | Jan-97          | Oct-96                  | 102 | 239                             | 4         | 0.98                          | #2 ULS Diesel |
| Power House          | 055-G-02  | 10/8/2011       | May-03                  | 380 | 610                             | 6         | 1.67                          | #2 ULS Diesel |
| Process Water Wells  | 055-G-14  | 1/24/2012       | Dec-03                  | 755 | 912                             | 6         | 2.49                          | #2 ULS Diesel |

**40 CFR Part 60 Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

Pursuant to 40 CFR Part 60.4200, the subpart applies to stationary CI engines that commenced constructions after July 11, 2005 and are manufactured after April 1, 2006 and are not fire pump engines. Since the three engines were either installed or manufactured prior to the dates provided in the standard, the engines are not subject to 40 CFR Part 60 Subpart IIII.

**40 CFR Part 63 Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines**

Pursuant to 40 CFR 63.6590(a)(2)(i), the process water wells engine is considered a new stationary RICE because it has a site rating of more than 500 HP, is located at a major source of HAP emissions, and commenced construction or modification after December 19, 2002. Pursuant to 40 CFR 63.6590(b)(1), as the engine is a new emergency stationary RICE with a site rating of more than

500 HP at a major source of HAP and the engine does not operate or is not contractually obligated to be available more than 15 hours per calendar year, the engine does not have to meet the requirements of 40 CFR Part 63 Subpart A or 40 CFR Part 63 Subpart ZZZZ except for the initial notification requirements of 63.6645(f) and the requirements of 63.6625(c), 63.6650(g) and 63.6655(c). The engine does not have to meet the emissions limits and operating limits of the subpart.

Pursuant to 40 CFR 63.6590(a)(2)(ii), the power house engine is considered a new stationary RICE because it has a site rating of equal or less than 500 HP, is located at a major source, and commenced construction after June 12, 2006. Pursuant to 40 CFR 63.6590(c)(7), since the engine is a CI stationary RICE with a site rating less than 500 HP at a major source of HAP emissions, the engine must meet the requirements of 40 CFR Part 63 Subpart ZZZZ by meeting the requirements of 40 CFR Part 60 subpart IIII. No further requirements apply for the engine under 40 CFR 63 Subpart ZZZZ.

### **3.9 Prompt Reporting Discussion**

Among other terms and conditions, CAAPP Permits contain reporting obligations to assure compliance with applicable requirements. These reporting obligations are generally four-fold. More specifically, each CAAPP Permit sets forth any reporting requirements specified by state or federal law or regulation, requires prompt reports of deviations from applicable requirements, requires reports of deviations from required monitoring and requires a report certifying the status of compliance with terms and conditions of the CAAPP Permit over the calendar year.

The number and frequency of reporting obligations in any CAAPP Permit is source-specific. That is, the reporting obligations are directly related to factors, including the number and type of emission units and applicable requirements, the complexity of the source and the compliance status. This four-fold approach to reporting is common to virtually all CAAPP Permits as described below. Moreover, this is the approach established in the Draft CAAPP Permit for this source.

### **Regulatory Reports**

Many state and federal environmental regulations establish reporting obligations. These obligations vary from rule-to-rule and thus from CAAPP source to CAAPP source and from CAAPP Permit to CAAPP Permit. The variation is found in the report triggering events, reporting period, reporting frequency and reporting content. Regardless, the CAAPP makes clear that all reports established under applicable regulations shall be carried forward into the CAAPP Permit as stated in Section 39.5(7)(b) of the Illinois Environmental Protection Act. Generally, where sufficiently detailed to meet the exacting standards of the CAAPP, the regulatory reporting requirements are simply restated in the CAAPP Permit. Depending on the regulatory obligations, these regulatory reports may also constitute a deviation report as described below.

The Draft CAAPP Permit for this source would embody all regulatory reporting as promulgated under federal and state regulations under the Clean Air Act and the Illinois Environmental Protection Act. Depending on the frequency of the report, the regulatory report may also satisfy the prompt reporting obligations discussed below. These reports must be certified by a responsible official.

These reports are generally found in the reporting sections for each emission unit group. The various regulatory reporting requirements are summarized in the table at the end of this Reporting Section.

#### **Deviation Reports (Prompt Reporting)**

Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require prompt reporting of deviations from the permit requirements.

Neither the CAAPP nor the federal rules upon which the CAAPP is based and was approved by USEPA define the term "prompt". Rather, 40 CFR Part 70.6(a)(3)(iii)(B) intended that the term have flexibility in application. The USEPA has acknowledged for purposes of administrative efficiency and clarity that the permitting authority (in this case, Illinois EPA) has the discretion to define "prompt" in relation to the degree and type of deviation likely to occur at a particular source. The Illinois EPA follows this approach and defines prompt reporting on a permit-by-permit basis. In instances where the underlying applicable requirement contains "prompt" reporting, the Illinois EPA typically incorporates the pre-established timeframe in the CAAPP permit (e.g. a NESHAP or NSPS deviation report). Where the underlying applicable requirement fails to explicitly set forth the timeframe for reporting deviations, the Illinois EPA generally uses a timeframe of 30 days to define prompt reporting of deviations.

This approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. The reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant attention. The timing for these event-specific notifications is necessary and appropriate as it gives the source enough time to conduct a thorough investigation into the causes of an event, collecting any necessary data, and developing preventive measures, to reduce the likelihood of similar events, all of which must be addressed in the notification for the deviation, while at the same time affording regulatory authority and the public timely and relevant information. The approach also affords the Illinois EPA and USEPA an opportunity to direct investigation and follow-up activities, and to make compliance and enforcement decisions in a timely fashion.

The Draft CAAPP Permit for this source would require prompt reporting as required by the Illinois Environmental Protection Act in the fashion described in this subsection. In addition, pursuant to Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act, this Draft CAAPP Permit would also require the source to provide a summary of all deviations with the Semi-Annual Monitoring Report. These reports must be certified by a responsible official, and are generally found in the reporting sections for each emission unit group.

#### **Semi-Annual Monitoring Reports**

Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a report relative to monitoring obligations as set forth in the permit. Depending upon the monitoring obligation at issue, the semi-annual monitoring report may also constitute a deviation report as previously discussed. This monitoring at issue includes instrumental and non-instrumental emissions monitoring, emissions analyses, and emissions testing established by state or federal laws or regulations or as established in the



CAAPP Permit. This monitoring also includes recordkeeping. Each deviation from each monitoring requirement must be identified in the relevant semi-annual report. These reports provide a timely opportunity to assess for compliance patterns of concern. The semi-annual reports shall be submitted regardless of any deviation events. Reporting periods for semi-annual monitoring reports are January 1 through June 30 and July 1 through December 31 of each calendar year. Each semi-annual report is due within 30 days after the close of reporting period. The reports shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such reports at Condition 3.5(b).

### **Annual Compliance Certifications**

Section 39.5(7)(p)(v) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a source to submit a certification of its compliance status with each term and condition of its CAAPP Permit. The reports afford a broad assessment of a CAAPP sources compliance status. The CAAPP requires that this report be submitted, regardless of compliance status, on an annual basis. Each CAAPP Permit requires this annual certification be submitted by May 1 of the year immediately following the calendar year reporting period. The report shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such a report at Condition 2.6(a).

Prompt reporting of deviations is critical in order to have timely notice of deviations and the opportunity to respond, if necessary. The effectiveness of the permit depends upon, among other important elements, timely and accurate reporting. The Illinois EPA, USEPA, and the public rely on timely and accurate reports submitted by the source to measure compliance and to direct investigation and follow-up activities. Prompt reporting is evidence of the source's good faith in disclosing deviations and describing the steps taken to return to compliance and prevent similar incidents.

Any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in this Draft CAAPP Permit is a deviation subject to prompt reporting. Additionally, any failure to comply with any permit term or condition is a deviation of that permit term or condition and must be reported to the Illinois EPA as a permit deviation. The deviation may or may not be a violation of an emission limitation or standard. A permit deviation can exist even though other indicators of compliance suggest that no emissions violation or exceedance has occurred. Reporting permit deviations does not necessarily result in enforcement action. The Illinois EPA has the discretion to take enforcement action for permit deviations that may or may not constitute a deviation from an emission limitation or standard or the like, as necessary and appropriate.

As a result, the Illinois EPA's approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. This reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant individual attention.

### **3.10 Greenhouse Gas Provisions**

On June 3, 2010, USEPA adopted rules for the initial permitting of major sources of emissions of greenhouse gases (GHG). See, 75 FR 31514-31608. Prompted by the earlier adoption of GHG emissions standards for motor

vehicles under Title II of the CAA, the USEPA's rules implement a two-phased program for permitting major sources of GHG under Title V permit programs.<sup>5</sup> As Illinois EPA is planning to issue a permit to this source during the second phase of the rules, GHG emissions must be addressed during this CAAPP permitting action.<sup>6</sup> Annual Emission Reports submitted to the Illinois EPA by this source and/or estimated GHG emissions by the Illinois EPA, which detail the source's actual annual emissions of GHG, provide the necessary data to appropriately address emissions of GHG in the Draft CAAPP Permit. The data in these reports clearly show the source is a major source for emissions of GHG.

The new federal rules also require subject Title V sources to comply with any applicable GHG-related requirements that arise from other CAA programs.<sup>7</sup> However, there are currently no emission standards or other regulatory obligations relating to GHG that constitute "applicable requirements" for this source. For this reason, the Draft CAAPP Permit for this source does not contain any substantive requirements for GHG. At the federal level, the only venue that could potentially establish GHG-related requirements at this time is the PSD program. As of January 2, 2011, sources triggering PSD must evaluate GHG emissions resulting from projects that trigger the major source or major modification rules.<sup>8</sup> This source has neither constructed such a project, nor received a permit authorizing such a project, since January 2, 2011, to the present, and therefore has not triggered any GHG-related requirements under the PSD program.

There are no other GHG-related requirements established under the CAA that are applicable to this source at this time. In particular, the mandatory reporting rule for GHG promulgated by USEPA in 2009 [see generally, 40 CFR Part 98] is not an applicable requirement and therefore would not be included in the Draft CAAPP Permit for this source. There are also no GHG-related requirements under the Illinois Environmental Protection Act or contained within Illinois' SIP that apply to the source at this time. Other state laws or regulations in Illinois relating to GHG, including efforts to reduce emissions of GHG under authority other than the Illinois Environmental Protection Act, do not constitute applicable requirements under the CAAPP.

### **3.11 Incorporation by Reference Discussion**

Based on guidance found in White Paper 2 and past petition responses by the Administrator, it is recognized that Title V permit authorities may, within their discretion, incorporate plans by reference. As recognized in the *White Paper 2*, permit authorities can effectively streamline the contents of a Title V permit, avoiding the inevitable clutter of restated text and preventing unnecessary delays where, as here, permit issuance is subject to a decision deadline.<sup>9</sup> However, it is also recognized that the benefits of incorporation of plans must be carefully balanced by a permit authority with its duty to issue permits in a way that is "clear and meaningful" to the Permittee and the public.<sup>10</sup>

The criteria that are mentioned in USEPA Administrator Petition Responses stress the importance of identifying, *with specificity*, the object of the incorporation.<sup>11</sup> The Illinois EPA agrees that such emphasis is generally consistent with USEPA's pronouncements in previous guidance.

For each condition incorporating a plan, the Illinois EPA is also briefly describing the general manner in which the plan applies to the source.

Identifying the nature of the source activity, the regulatory requirements or the nature of the equipment associated with the plan is a recommendation of the *White Paper 2*<sup>12</sup>. The Illinois EPA has stopped short of enumerating the actual contents of a plan, as restating them in the permit would plainly defeat the purpose of incorporating the document by reference and be contrary to USEPA guidance on the subject.<sup>13</sup>

Plans may need to be revised from time to time, as occasionally required by circumstance or by underlying rule or permit requirement. Except where expressly precluded by the relevant rules, this Draft CAAPP Permit allows the Permittee to make future changes to a plan without undergoing formal permit revision procedures. This approach will allow flexibility to make required changes to a plan without separately applying for a revised permit and, similarly, will lessen the impacts that could result for the Illinois EPA if every change to a plan's contents required a permitting transaction.<sup>14</sup> Changes to the incorporated plans during the permit term are automatically incorporated into the Draft CAAPP Permit unless the Illinois EPA expresses a written objection.

The Draft CAAPP Permit incorporates by reference the following plans: Episode Action Plan, and/or Risk Management Plan.<sup>15</sup>

### **3.12 Periodic Monitoring General Discussions**

Pursuant to Section 504(c) of the Clean Air Act, a Title V permit must set forth monitoring requirements, commonly referred to as "Periodic Monitoring," to assure compliance with the terms and conditions of the permit. A general discussion of Periodic Monitoring is provided below. The Periodic Monitoring that is proposed for specific operations and emission units and at this source is discussed in Chapter III of this Statement of Basis. Chapter III provides a narrative discussion of and justification for the elements of Periodic Monitoring that would apply to the different emission units and types of emission units at the facility.

As a general matter, the required content of a CAAPP Permit with respect to such Periodic Monitoring is addressed in Section 39.5(7) of the Illinois Environmental Protection Act.<sup>16</sup> Section 39.5(7)(b) of the Illinois Environmental Protection Act<sup>17</sup> provides that in a CAAPP Permit:

The Agency shall include among such conditions applicable monitoring, reporting, record keeping and compliance certification requirements, as authorized by paragraphs d, e, and f of this subsection, that the Agency deems necessary to assure compliance with the Clean Air Act, the regulations promulgated thereunder, this Act, and applicable Board regulations. When monitoring, reporting, record keeping and compliance certification requirements are specified within the Clean Air Act, regulations promulgated thereunder, this Act, or applicable regulations, such requirements shall be included within the CAAPP Permit.

Section 39.5(7)(d)(ii) of the Illinois Environmental Protection Act further provides that a CAAPP Permit shall:

Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), require Periodic Monitoring sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit ...

Accordingly, the scope of the Periodic Monitoring that must be included in a CAAPP Permit is not restricted to monitoring requirements that were adopted through rulemaking or imposed through permitting. When applicable regulatory emission standards and control requirements or limits and control requirement in relevant Title 1 permits are not accompanied by compliance procedures, it is necessary for Monitoring for these standards, requirements or limits to be established in a CAAPP Permit.<sup>18, 19</sup> Monitoring requirements must also be established when standards and control requirement are accompanied by compliance procedures but those procedures are not adequate to assure compliance with the applicable standards or requirements.<sup>20, 21</sup> For this purpose, the requirements for Periodic Monitoring in a CAAPP Permit may include requirements for emission testing, emissions monitoring, operational monitoring, non-instrumental monitoring, and recordkeeping for each emission unit or group of similar units at a facility, as required by rule or permit, as appropriate or as needed to assure compliance with the applicable substantive requirements. Various combinations of monitoring measures will be appropriate for different emission units depending on their circumstances, including the substantive emission standards, limitations and control requirements to which they are subject.

What constitutes sufficient Periodic Monitoring for particular emission units, including the timing or frequency associated with such Monitoring requirements, must be determined by the permitting authority based on its knowledge, experience and judgment.<sup>22</sup> For example, as Periodic Monitoring must collect representative data, the timing of Monitoring requirements need not match the averaging time or compliance period of the associated substantive requirements, as set by the relevant regulations and permit provisions. The timing of the various requirements making up the Periodic Monitoring for an emission unit is something that must be considered when those Monitoring requirements are being established. For this purpose, Periodic Monitoring often consists of requirements that apply on a regular basis, such as routine recordkeeping for the operation of control devices or the implementation of the control practices for an emission unit. For certain units, this regular monitoring may entail "continuous" monitoring of emissions, opacity or key operating parameters of a process or its associated control equipment, with direct measurement and automatic recording of the selected parameter(s). As it is infeasible or impractical to require emissions monitoring for most emission units, instrumental monitoring is more commonly conducted for the operating parameters of an emission unit or its associated control equipment. Monitoring for operating parameter(s) serves to confirm proper operation of equipment, consistent with operation to comply with applicable emission standards and limits. In certain cases, an applicable rule may directly specify that a particular level of an operating parameter be maintained, consistent with the manner in which a unit was being operated during emission testing. Periodic Monitoring may also consist of requirements that apply on a periodic basis, such as inspections to verify the proper functioning of an emission unit and its associated controls.

The Periodic Monitoring for an emission unit may also include measures, such as emission testing, that would only be required once or only upon specific request by the Illinois EPA. These requirements would always be accompanied by Monitoring requirements would apply on a regular basis. When emission testing or other measure is only required upon request by the Illinois EPA, it is included as part of the Periodic Monitoring for an emission unit to facilitate a response by the Illinois EPA to circumstances that were not contemplated when Monitoring was being established, such as the handling of a new material or a

new mode of operation. Such Monitoring would also serve to provide further verification of compliance, along with other potentially useful information. As emission testing provides a quantitative determination of compliance, it would also provide a determination of the margin of compliance with the applicable limit(s) and serve to confirm that the Monitoring required for an emission unit on a regular basis is reliable and appropriate. Such testing might also identify specific values of operating parameters of a unit or its associated control equipment that accompany compliance and can be relied upon as part of regular Monitoring.

There are a number of considerations or factors that are or may be relevant when evaluating the need to establish new monitoring requirements as part of the Periodic Monitoring for an emission unit. These factors include: (1) The nature of the emission unit or process and its emissions; (2) The variability in the operation and the emissions of the unit or process over time; (3) The use of add-on air pollution control equipment or other practices to control emissions and comply with the applicable substantive requirement(s); (4) The nature of that control equipment or those control practices and the potential for variability in their effectiveness; (5) The nature of the applicable substantive requirement(s) for which Periodic Monitoring is needed; (6) The nature of the compliance procedures that specifically accompany the applicable requirements; (7) The type of data that would already be available for the unit; (8) The effort needed to comply with the applicable requirements and the expected margin of compliance; (9) The likelihood of a violation of applicable requirements; (10) The nature of the Periodic Monitoring that may be readily implemented for the emission unit; (11) The extent to which such Periodic Monitoring would directly address the applicable requirements; (12) The nature of Periodic Monitoring commonly required for similar emission units at other facilities and in similar circumstances; (13) The interaction or relationship between the different measures in the Periodic Monitoring for an emission unit; and (14) The feasibility and reasonableness of requiring additional measures in the Periodic Monitoring for an emission unit in light of other relevant considerations.<sup>23</sup>

**CHAPTER IV - CHANGES FROM PREVIOUSLY ISSUED CAAPP PERMITS****4.1 Major Changes Summary**

This renewal CAAPP draft is presented in a new format. The new format is the result of recommendations by the USEPA, comments made by sources, and interactions with the public.

|            | <i>Previous CAAPP Permit Layout</i> | <i>New CAAPP Permit Layout</i> |
|------------|-------------------------------------|--------------------------------|
| Section 1  | Source Identification               | Source Information             |
| Section 2  | List Of Abbreviations/Acronyms      | General Permit Requirements    |
| Section 3  | Insignificant Activities            | Source Requirements            |
| Section 4  | Significant Emission Units          | Emission Unit Requirements     |
| Section 5  | Overall Source Conditions           | Title I Requirements           |
| Section 6  | Emission Control Programs           | Insignificant Activities       |
| Section 7  | Unit Specific Conditions            | Other Requirements             |
| Section 8  | General Permit Conditions           | State Only Requirements        |
| Section 9  | Standard Permit Conditions          | ---                            |
| Section 10 | Attachments                         | Attachments                    |

**4.2 Specific Permit Condition Changes**

This renewal CAAPP permit reflects several changes made to the facility and operations since its initial CAAPP permit. The facility dismantled and removed the Latex Fertilizer Coating Plant. Additionally, the QC-2 Ingersoll-Rand Compressor engine was removed and the Clark Compressors C-02A, C-02B, and C-02C were equipped with low-NOx burners. At the Urea Plant, the Prill tower was removed. The permit was updated to reflect the removal of the equipment discussed above.

Additionally, several construction permits were authorized since the previous CAAPP permit. IEPA incorporated the new requirements from construction permits #11020024, 10050025, 11030025, 11030041, 11050039, 13100010, 14030058, and 94030110. In some cases, if the construction permit did not contain sufficient monitoring, IEPA supplemented the monitoring from the construction permit with periodic monitoring sufficient to ensure compliance with the limitations.

Since the issuance of the initial CAAPP permit for the facility, several new federal standards haven taken effect. IEPA evaluated these standards and where appropriate, incorporated applicable requirements into the permit. For example, this includes the 40 CFR 63 Subpart DDDDD and its applicability to the boilers S-5, S-6, and S-7 as well as R-1, H-R4 and H-R6. IEPA also determined that 40 CFR 63 Subpart FFFF applied to the Urea Plant, however, the only applicable requirement was from 40 CFR 63.2480 pertaining to leak detection for equipment in organic HAP service. To comply with this requirement, the facility choose to comply with 40 CFR 65 Subpart F.

Additionally, the Permittee has requested that limitations on the natural gas usage of H-R6 in order to limit the annual average capacity factor to no more than 10% so that the unit qualifies as a limited use process heater under 40 CFR Part 60 Subpart DDDDD.

As this was the first renewal of the CAAPP permit, CAM also became an applicable requirement for Nitric Acid Plant 1 and Plant 2 as well as the Acid Neutralizer. IEPA incorporated elements of the CAM plan directly into the permit and approved the remainder of the plan.

**Endnotes**

<sup>1</sup> Common control differs from common ownership in that there is an inherent limitation on a facility's ability to operate "but for" another facility providing its services.

<sup>2</sup> The federal PSD program, 40 CFR 52.21, applies in Illinois. The Illinois EPA administers PSD permitting for major projects in Illinois pursuant to a delegation agreement with USEPA.

<sup>3</sup> Illinois has a state nonattainment NSR program, pursuant to state rules, Major Stationary Sources Construction and Modification ("MSSCM"), 35 IAC Part 203, which have been approved by USEPA as part of the State Implementation Plan for Illinois.

<sup>4</sup> The incorporation, or carry-over, of terms or conditions from previous Title I permits into Title V permits typically does not occur on a wholesale basis. Recognizing that construction permits may frequently contain obsolete or extraneous terms and conditions, USEPA has emphasized that only "environmentally significant terms" from previous preconstruction permits must be carried over into Title V permits. See, White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995. Therefore, certain T1 terms and conditions have not been carried over from these SIP approved permits for reasons that are explained below.

<sup>5</sup> The new rules apply the first phase of permitting to sources already subject to Title V by virtue of their conventional, non-GHG pollutants. As noted above, these sources are expected to address GHG in their permitting applications and to comply with any substantive requirements for GHG that have been established through other CAA programs such as PSD. The second phase of permitting that begins July 1, 2011, essentially applies the same requirements to sources who will become subject to Title V based on their GHG emissions alone (i.e., existing or newly constructed sources with a potential to emit of equal to or greater than 100,000 tons per year of CO<sub>2</sub>e and 100 tons per year of GHG on a mass basis).

<sup>6</sup> USEPA has stated that the first phase of its new rules requires existing Title V sources to address GHG in their Title V applications by citing to any pollutants for which the Title V source is major and to all regulated air pollutants. See, PSD and Title V Permitting Guidance for Greenhouse Gases, prepared by the Office of Air Quality Planning and Standards, page 51 (November 2010).

<sup>7</sup> See generally, PSD and Title V Permitting Guidance for GHG at pages 53-56.

<sup>8</sup> A major source subject to PSD based on potential emissions of a non-GHG pollutant and potential emissions of GHG equal or greater than 75,000 tons per year of CO<sub>2</sub>e is required to address GHG emissions in evaluating control options and associated monitoring, reporting, etc., for any construction of a new major source or a major modification of an existing major source.

<sup>9</sup> Among other things, USEPA observed that the stream-lining benefits can consist of "reduced cost and administrative complexity, and continued compliance flexibility...". *White Paper 2*, page 41.

<sup>10</sup> See, In the Matter of Tesoro Refining and Marketing, Petition No. IX-2004-6, Order Denying in Part and Granting in Part Petition for Objection to Permit, at page 8 (March 15, 2005); see also, *White Paper 2* at page 39 ("reference must be detailed enough that the manner in which any referenced materials applies to a facility is clear and is not reasonably subject to misinterpretation").

<sup>11</sup> The Order provides that permit authorities must ensure the following: "(1) referenced documents be specifically identified; (2) descriptive information such as the title or number of the document and the date of the document be included so that there is no ambiguity as to which version of the document is being referenced; and (3) citations, cross references, and incorporations by reference are detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably

subject to misinterpretation.” See, Petition Response at page 43, citing White Paper 2 at page 37.

<sup>12</sup> See, White Paper 2 at page 39.

<sup>13</sup> Nothing in USEPA guidance, including the White Paper 2 or previous orders responding to public petitions, supports the notion that permit authorities incorporating a document by reference must also restate contents of a given plan in the body of the Title V permit. Such an interpretation contradicts USEPA recognition that permit authorities need not restate or recite an incorporated document so long as the document is sufficiently described. White Paper 2 at page 39; see also, In the matter of Consolidated Edison Co. of New York, Inc., 74th St. Station, Petition No. II-2001-02, Order Granting in Part and Denying in Part Petition for Objection to Permit at page 16 (February 19, 2003).

<sup>14</sup> This approach is consistent with USEPA guidance, which has previously embraced a similar approach to certain SSM plans. See, Letter and Enclosures, dated May 20, 1999, from John Seitz, Director of Office of Air Quality Planning and Standards, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, pages 9-10 of Enclosure B.

<sup>15</sup> Each incorporated plan addressed by this Section of the Statement of Basis is part of the source’s permit file. As such, these plans are available to any person interested in viewing the contents of a given plan may do so at the public repository during the comment period or, alternatively, may request a copy of the same from the Illinois EPA under the Freedom of Information Act. See also 71 FR 20447.

<sup>16</sup> The provisions of the Act for Periodic Monitoring in CAAPP permits reflect parallel requirements in the federal guidelines for State Operating Permit Programs, 40 CFR 70.6(a)(3)(i)(A), (a)(3)(i)(B), and (c)(1).

<sup>17</sup> Section 39.5(7)(p)(i) of the Act also provides that a CAAPP permit shall contain “Compliance certification, testing, monitoring, reporting and record keeping requirements sufficient to assure compliance with the terms and conditions of the permit.”

<sup>18</sup> The classic example of regulatory standards for which Periodic Monitoring requirements must be established in a CAAPP permit are state emission standards that pre-date the 1990 Clean Air Act Amendments that were adopted without any associated compliance procedures. Periodic Monitoring must also be established in a CAAPP permit when standards and limits are accompanied by compliance procedures but those procedures are determined to be inadequate to assure compliance with the applicable standards or limits.

<sup>19</sup> Another example of emission standards for which requirements must be established as part of Periodic Monitoring is certain NSPS standards that require initial performance testing but do not require periodic testing or other measures to address compliance with the applicable limits on a continuing basis.

<sup>20</sup> The need to establish Monitoring requirements as part of Periodic Monitoring when existing compliance procedures are determined to be inadequate, as well as when they are absent, was confirmed by the federal appeals court in *Sierra Club v. Environmental Protection Agency*, 536 F.3d 673, 383 U.S. App. D.C. 109.

<sup>21</sup> The need to establish Monitoring requirements as part of Periodic Monitoring is also confirmed in USEPA’s Petition Response. USEPA explains that “...if there is periodic monitoring in the applicable requirements, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance.” Petition Response, page 6.

<sup>22</sup> The test for the adequacy of “Periodic Monitoring” is a context-specific determination, particularly whether the provisions in a Title V permit reasonably



address compliance with relevant substantive permit conditions. 40 CFR 70.6(c)(1); see also 40 CFR 70.6(a)(3)(i)(B); see also, *In the Matter of CITGO Refinery and Chemicals Company L.P.*, Petition VI-2007-01 (May 28, 2009); see also, *In the Matter of Waste Management of LA. L.L.C. Woodside Sanitary Landfill & Recycling Center, Walker, Livingston Parish, Louisiana*, Petition VI-2009-01 (May 27, 2010); see also, *In the Matter of Wisconsin Public Service Corporation's JP Pulliam Power Plant*, Petition V-2009-01 (June 28, 2010).

<sup>23</sup> A number of these factors are specifically listed by USEPA in its Petition Response. USEPA also observes that the specific factors that it identifies in its Petition Response with respect to Periodic Monitoring provide "...the permitting authority with a starting point for its analysis of the adequacy of the monitoring; the permitting authority also may consider other site-specific factors." Petition Response, page 7.

**CERTIFICATE OF SERVICE**

I, the undersigned, on affirmation, state that I have served the attached **Exhibits to East Dubuque Nitrogen Fertilizers, LLC's Proposal to Amend Section 217.381** by email on the following:

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| <p><b>Illinois Pollution Control Board</b><br/> Don Brown - Clerk of the Board<br/> don.brown@illinois.gov<br/> 100 W. Randolph St., Suite 11-500<br/> Chicago, IL 60601</p>   | <p><b>Office of the Attorney General</b><br/> Jason E. James - Assistant Attorney General<br/> Jason.James@ilag.gov<br/> 201 West Point Drive, Suite 7<br/> Belleville, IL 62226</p> <p>Molly Kordas - Assistant Attorney General<br/> Molly.Kordas@ilag.gov<br/> Ann Marie A. Hanohano - Assistant Attorney General<br/> annmarie.hanohano@ilag.gov<br/> 69 West Washington Street, Suite 1800<br/> Chicago, IL 60602</p> |
| <p><b>Illinois Environmental Protection Agency</b><br/> Dana Vetterhoffer - Assistant Counsel<br/> dana.vetterhoffer@illinois.gov<br/> Audrey L. Walling - Assistant Counsel<br/> Audrey.L.Walling@illinois.gov<br/> 1021 North Grand Avenue East<br/> P.O. Box 19276<br/> Springfield, IL 62794</p>   | <p><b>Illinois Department of Natural Resources</b><br/> Renee Snow - General Counsel<br/> renee.snow@illinois.gov<br/> One Natural Resources Way<br/> Springfield, IL 62702-1271</p>   |
| <p><b>ArentFox Schiff LLP</b><br/> Joshua R. More<br/> Joshua.More@afslaw.com<br/> David M. Loring<br/> dloring@schiffhardin.com<br/> Sarah L. Lode<br/> Sarah.Lode@afslaw.com<br/> Alex Garel-Frantzen<br/> Alex.Garel-Frantzen@afslaw.com<br/> 233 South Wacker Drive Suite 6600<br/> Chicago, IL 60606</p> <p>Andrew N. Sawula<br/> Andrew.Sawula@afslaw.com<br/> One Westminster Place, Suite 200<br/> Lake Forest, IL 60045</p> | <p><b>USEPA - Region 5</b><br/> Michael Leslie<br/> leslie.michael@epa.gov<br/> Ralph H. Metcalfe Federal Building<br/> 77 West Jackson Blvd.<br/> Chicago, IL 60604</p>   |

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|---|--|
| <b>HeplerBroom LLC</b><br>Melissa S. Brown<br>Melissa.brown@heplerbroom.com<br>Alec Messina<br>Alec.Messina@heplerbroom.com<br>4340 Acer Grove Drive<br>Springfield, IL 62711 | <b>Faith Bugel</b><br>fbugel@gmail.com<br>1004 Mohawk Rd.<br>Wilmette, IL 60091  |
| <b>Environmental Law and Policy Center</b><br>Cantrell Jones<br>CJones@elpc.org<br>35 E. Wacker Drive, Suite 1600<br>Chicago, IL 60601  | <b>Greater Chicago Legal Clinic, Inc.</b><br>Keith I. Harley<br>kharley@kentlaw.edu<br>211 West Wacker Drive, Suite 750<br>Chicago, IL 60606 |
| <b>McDermott, Will &amp; Emery</b><br>Mark A. Bilut<br>mbilut@mwe.com<br>227 West Monroe Street<br>Chicago, IL 60606-5096   | <b>IERG</b><br>Kelly Thompson - Executive Director<br>kthompson@ierg.org<br>215 E. Adams St.<br>Springfield, IL 62701                        |

I further state that my email address is as stated in the signature block below, that the number of pages in this email transmission is 441 and that the email transmission took place before 5 p.m. on August 7, 2023.

Dated: August 7, 2023

Respectfully submitted,

/s/ Alicia Garten  
East Dubuque Nitrogen Fertilizers, LLC  
By One of Its Attorneys

Byron F. Taylor  
John M. Heyde  
Alicia Garten  
**SIDLEY AUSTIN LLP**  
One South Dearborn  
Chicago, IL 60603  
(312) 853-7000  
bftaylor@sidley.com  
jheyde@sidley.com  
agarten@sidley.com