

ILLINOIS POLLUTION CONTROL BOARD
July 16, 2015

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STATE OF ILLINOIS
Pollution Control Board

IN THE MATTER OF:)
)
AMENDMENTS TO 35 ILL. ADM. CODE)
PART 214, SULFUR LIMITATIONS, PART) R15-21
217, NITROGEN OXIDES EMISSIONS,) (Rulemaking - Air)
AND PART 225, CONTROL OF EMISSIONS)
FROM LARGE COMBUSTION SOURCES)

HEARING OFFICER ORDER

On April 28, 2015, the Illinois Environmental Protection Agency (IEPA) filed a rulemaking generally proposing to control emissions of sulfur dioxide (SO₂) in and around areas designated as nonattainment with respect to the 2010 SO₂ National Ambient Air Quality Standard. The rulemaking was filed pursuant to Sections 4, 10, 27, 28, and 28.2 of the Environmental Protection Act (415 ILCS 5/4, 10, 27, 28, 28.2 (2012)) and Section 102.202 of the Board's procedural rules (35 Ill. Adm. Code 102.202).

Three hearings have been scheduled in this rulemaking. The first hearing took place on July 8, 2015 in Springfield. The second hearing will take place at 10:00 a.m. on July 29, 2015 in Joliet. The third hearing will take place at 10:30 a.m. on August 4, 2015 in Pekin. Pre-filed testimony must be filed by July 17, 2015, and pre-filed questions must be filed by July 24, 2015 for the second and third hearings.

Attached to this order are Board staff questions for the witnesses of IEPA. These questions will be taken up at the second hearing. Opportunities for other participants attending the hearing to ask questions will be provided.

IT IS SO ORDERED.



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ATTACHMENT TO HEARING OFFICER ORDER
JULY 16, 2015
BOARD STAFF QUESTIONS FOR SECOND HEARING

The following questions have been prepared for the Illinois Environmental Protection Agency (IEPA) following the Board's July 8, 2015 hearing on IEPA's proposal and IEPA's July 7, 2015 responses to the Board's pre-filed questions (IEPA Response). The Board asks that IEPA respond to the following questions.

40. In response to Question 1(e) regarding annual SO₂ reductions anticipated under the proposed fuel standards, IEPA states, "it should be noted that this proposed rulemaking addresses the hourly SO₂ standard, and as such, annual emissions are not the focus." IEPA Response at 2-3. IEPA explains that the proposed sulfur content limitations applied to "fuel combustion emission units impacting the Lemont and Pekin non-attainment areas is needed to address the CAA requirements" for the SO₂ non-attainment areas. Statement of Reasons (SR) at 6-7. In light of this, explain if IEPA reconciled the annual allowable emissions for fuel oils listed in Table 1 (Technical Support Document (TSD) at 13) to the "hourly" SO₂ standards to demonstrate attainment or whether the Agency used a different method. Since Table 1 is for point sources in Illinois generally, also comment on whether IEPA differentiated the sources impacting the non-attainment areas in the attainment demonstration.

41. In response to Question 2, the Agency states, "[d]ata in Table 5 of the TSD was taken from the cited EIA website. The most recent data available from EIA is from 2013." Further regarding the feasibility of proposed liquid fuel standards, the Agency asserts that the data in Table 5 shows steady increase in the use of fuel oils that are compliant with the proposed standards in commercial and industrial sectors. TSD at 19. The EIA website cited by IEPA indicates that the farm sector accounts for a significant portion of the distillate fuel sales in Illinois, however, the EIA data does not differentiate sulfur levels of distillate fuel for the farm sector.
 - a. Comment on whether the distillate fuel oil use in the farm sector includes combustion sources that meet the applicability criteria of Section 214.121(b)(2). If so, are such sources subject to the proposed state-wide liquid fuel standards?
 - b. Does the list of potentially affected sources in Appendix A of the TSD include affected sources located on farms?

42. In response to Question 11 regarding an estimate of the overall annual reduction of SO₂ under the proposed Subpart AA limits, the Agency states that the focus of this rulemaking is hourly not annual emissions and that "such estimates, if calculated would not be useful, since the reductions in allowable emissions would be quite large and would not represent a meaningful effect of the proposed rule amendments." IEPA Response at 8. Comment on the broader perspective of SO₂ emissions controls from the existing regulations pertaining to SO₂ emission rates in terms of lb/mmBu and the newly proposed

SO₂ emission rates in terms of lb/hr for the SO₂ State Implementation Plan (SIP) submittal. Comment the effect of the SO₂ emission rates in terms of lb/mmBtu in limiting annual emissions based on a facility's rated heat input and the effect of the SO₂ emission rates in terms of lb/hr limiting short term emissions. Comment on how both types of limits are used in Illinois' SIP demonstration to attain and maintain the NAAQS.

43. In Table 4 of the TSD, IEPA lists the SO₂ emissions in terms of lb/mmBtu and tons per year for Midwest Generation units with and without the proposed amendments regarding the conversion of units to fuel other than coal. Explain the origin of the SO₂ emission rate (lb/mmBtu) of 0.0006 for Joliet 6, 7, and 8 and 0.0015 for Will County 3. Clarify where those rates are included in the proposed amendments.
44. In Table 3 of the TSD, IEPA lists the SO₂ "Current Allowable Emissions (lb/hr)" from the sources proposed to be include in 35 Ill. Adm. Code 214 Subpart AA. Identify the existing regulations from which the current allowable emissions are derived for each of these sources. If any of the sources in proposed Subpart AA are subject to Subpart D, comment on whether the following phrase should be added to Sections 214.161 or 216.162: "Except as otherwise provided in this Part . . ."
45. Focusing on the reductions in the allowable hourly rates under Subpart AA, calculate the percent reduction from current to proposed allowable SO₂ emission rates (lb/hr) for each of the units listed in Table 3 of the TSD.
46. Proposed section 214.603(b) provides SO₂ emission limits for E.D. Edwards in terms of lb/hr as 2,100 for Units 1 and 2 and 2,756 for Unit 3. Current section 214.561(c) provides SO₂ emission limits for E.D. Edwards Boiler Nos. 1, 2 and 3, as a group, of 34,613 lb/hr. IEPA lists the "Current Allowable Emissions (lb/hr) for E.D. Edwards as 31,970.23 for Units 1 and 2 and 30,320.24 for Unit 3. TSD at 15. Current section 214.561(c) is not included among the proposed revisions. Explain how the current section 214.561(c) and proposed section 214.603(b) would work together.
47. IEPA explains that Joliet 6 will cease combusting coal and convert to natural gas or diesel fuel and that "Midwest Generation requested that this exception [for Joliet 6 under Section 225. 296 to install FGD or shutdown] be applied to the Will County 4 unit instead." SR at 12, TSD at 11. Elaborate further on Midwest Generation's reasoning for requesting the switch and not installing FGD on the Will County 4 unit.
48. IEPA states that under the proposed rules, Midwest Generation's "Will County 4 will continue to be subject to the limitations in the CPS [Combined Pollutant Standard] (or the conditions imposed by any variance to which the unit is subject) . . ." IEPA Response at 15 (Response to Board Question 27(b)). The Board granted Midwest Generation a variance from Section 225.295(b) of the CPS emission standards for SO₂ for 2015 and 2016, limiting the system-wide average annual SO₂ emission rate to 0.38 lb/mmBtu and the system-wide mass emissions of SO₂ to no more than 39,000 tons in 2015 and 37,000 tons in 2016. Midwest Generation, LLC v IEPA, PCB 13-24, slip op. at 81-85 (April 4, 2013). Is IEPA stating that Will County 4, as part of the CPS group, will continue to be

subject to average annual SO₂ emission rates in 35 Ill. Adm. Code 225.295(b) starting January 2017?

49. IEPA estimates that SO₂ emissions from Will County 4 in 2019 will be 1,649 tons with or without the proposed rules. Technical Support Document (TSD) at 17. Current regulations require that Will County 4 will be shut down or controlled with flue gas desulfurization (FGD) equipment on or before December 31, 2018. 35 Ill. Adm. Code 225.296(b). As to Table 4 (TSD at 17), explain why, for Will County 4, SO₂ emissions are estimated at 1,649 tons under the column “Proposed Amendments 2019” where Will County would be exempt from the requirement at Section 225.296(b) and the column “CPS 2019 without Amendments” where Will County 4 would still be subject to Section 225.296(b).
50. Proposed Section 214.603(f) provides that Will County 3 and 4 will be subject to SO₂ limits of 145.14 and 6,520.65 lb/hr, respectively. The TSD explains these are the “maximum allowable hourly SO₂ emissions.” TSD at 14. Explain how the modeling demonstrates that these limits provide assurance that the 2010 one-hour SO₂ National Ambient Air Quality Standards (NAAQS) will be attained and maintained at the fence line.
51. In response to Board Question 18, IEPA states that compliance with an hourly limit is difficult for Midwest Generation’s Powerton facility because of “variation in emissions.” IEPA Response at 10. IEPA cites to reasons for such difficulties as explained in USEPA 2014 SO₂ SIP Guidance¹, but IEPA does not specifically identify which reasons apply to Powerton. IEPA Response at 10-11. In discussing longer averaging times for SO₂ emission limits, USEPA 2014 SO₂ SIP Guidance cites to “sources that have highly variable hourly emissions due to such factors as variable sulfur content in fuel, variable operating load, etc.” USEPA’s 2014 Guidance at 23.
 - a. Submit a copy of USEPA 2014 SO₂ SIP Guidance for the record.
 - b. Explain the circumstances when USEPA allows longer averaging periods.
 - c. Explain why compliance with an hourly limit is difficult for Powerton and whether the reasons are consistent with circumstances for longer averaging periods cited in USEPA 2014 SO₂ SIP Guidance.
 - d. Explain how the Powerton units differ from other units covered by proposed Section 214.603 not subject to a 30-day averaging period.

¹ USEPA. Guidance for 1-Hour SO₂ Nonattainment Area SIP Submissions. April 23, 2014.(USEPA 2014 SO₂ SIP Guidance).
<http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/20140423guidance.pdf>
 TSD at 9, 32, IEPA Response at 10-11

- e. At the July 8, 2015 hearing, a comment suggested that USEPA requires that longer term averaging limits be supported with additional justification. July 8, 2015 Hearing Transcript (Tr.) at 49. USEPA 2014 SO₂ SIP Guidance states, “[A]ir agencies that use longer term average limits should provide additional justification . . .”, and lists two factors. USEPA 2014 SO₂ SIP Guidance at 27-28. Address the factors USEPA considers for state agencies providing additional justification for longer term averaging limits.
 - f. Discuss the considerations that resulted in choosing the 30-day averaging period over a shorter alternative averaging period, such as 24 hours. Indicate what other options were considered.
 - g. Provide the analysis that resulted in choosing the 30-day averaging period. Describe what other options were considered.
52. IEPA states Powerton “is scheduled to install a trona injection dry FGD system for the control of SO₂ emissions before 2017.” TSD at 9. Will such FGD equipment installed prior to 2017 change the factors that currently make compliance with a 1-hour limitation difficult without FGD?
53. Proposed Section 214.603(e) sets an emission limit of 3,452 lb/hr for Powerton 5 and 6 combined. IEPA explains that it relied on emission data submitted by Midwest Generation from the Potomac River Generating Station to develop this limit. TSD at 9. IEPA used this data because Potomac River uses FGD equipment and Powerton will install such equipment before 2017 and because the Potomac River units are similar to the Powerton units. *Id.*
- a. It appears that Potomac River had three 110 MW generating units dating from the 1950s, whereas Powerton has two 890 MW units dating from 1972 and 1974. Also, Potomac River was closed in 2012, after using FGD equipment for only 3 years. Confirm whether this information is correct. Describe the units and control equipment at Potomac River during the 42 months used for emissions data. Compare the Potomac River facility to the Powerton facility as relevant to emission data.
 - b. Explain why IEPA believes that the emission data from Potomac River is an “appropriate proxy” for emissions from the Powerton units.
54. IEPA states the SO₂ hourly emission limit for Powerton 5 and 6 without a 30-day averaging period would be 6,000 lb/hr based on the modeling to demonstrate attainment. TSD at 9, Table 7. IEPA explains how it applied Potomac River data to the 6,000 lb/hr critical emission value to calculate the 3,452 lb/hr limit by using a ratio based on Potomac River 1-hour and 30-day average emission values. TSD at 9-10. IEPA states that Powerton “will have to maintain an emissions average that is well below the hourly emissions that were modeled to determine that this rulemaking would result in the area attaining the SO₂ standard.” IEPA Response at 11. USEPA 2014 SO₂ SIP Guidance

states, “any emission limits based on averaging periods longer than 1 hour should be designed to have comparable stringency to a 1-hour average limit at the critical emission value.” USEPA 2014 SO₂ SIP Guidance at 24.

- a. Clarify if the 6,000 lb/hr critical emission value at Powerton was modeled and demonstrated it would provide assurance that the NAAQS will be attained and maintained at the fence line.
 - b. Clarify how the use of the 30-day 3,452 lb/hr limit is designed to have comparable stringency to a 1-hour modeled critical emission value of 6,000 lb/hr,, and how it compensates for occasions when emissions exceed the critical emission value.
 - c. Clarify if periods of hourly emissions could occur above the critical emission value and if those occurrences at the source would be rare.
 - d. Clarify if such periods when hourly emissions occur above the critical emission value would be unlikely to have a significant impact on air quality since they would be unlikely to occur repeatedly at times when the meteorology is conducive for high ambient concentrations of SO₂.
 - e. Clarify if the 30-day average limit will provide sufficient constraint on the frequency and magnitude of occurrences of elevated emissions described above such that the limit would reasonably provide for attainment.
 - f. Does IEPA anticipate that the 1-hour SO₂ NAAQS of 75 ppb (35 Ill. Adm. Code 243.122(c)) will be exceeded in the vicinity of the Powerton facility under the proposed rules? If so, how often?
 - g. Clarify if an hour where emissions are above the critical value means that a NAAQS exceedance is occurring in that hour given the likeliness of the meteorology being conducive for high ambient concentrations of SO₂.
 - h. Clarify whether the 30-day averaging for Powerton will still provide assurance that the NAAQS will be attained and maintained.
55. IEPA explains, “[t]he SIP submittal [to USEPA] will include detailed discussions of the methods used in modeling simulations for the two Illinois [non-attainment areas]. For the purposes of this rulemaking, an overview of the modeling methods is included in this section.” TSD at 24. IEPA goes on to state, “complete modeling input files were provided to affected sources and interest groups that requested them.” TSD at 27. During the July 8, 2015 hearing, a comment referred to “Column O of the Pekin spreadsheet.” Tr. at 51. Submit the modeling input files that IEPA provided to affected sources and interest groups into the rulemaking record.

56. IEPA states that the modeling approach for attainment demonstration “ensures that the NAAQS will be attained at all points within the modeling domain, with an appropriate margin of safety Model output was generated for all nonattainment area receptors.” TSD at 24-25.
- a. Clarify if “points” and “receptors” are the same.
 - b. Indicate the location of the modeling points/receptors near the Powerton and Will County facilities.
 - c. Describe the “appropriate margin of safety” (TSD at 24-25).
57. Throughout the TSD, IEPA uses allowable emissions for modeling analysis. For example, IEPA states “all sources were initially modeled at the allowable limit specified by rule or by construction/operating permit, whichever was more restrictive.” TSD at 28, 30. Later modeling runs appear to have incorporated enforceable restrictions proposed in this rulemaking. Under the modeling methodology, IEPA explains, “[a] culpability analysis was conducted for these violating receptors to determine which sources in the modeling domain were primary contributors to the modeled exceedances.” TSD at 26.
- a. Explain IEPA’s legal basis for using allowable emissions in attainment modeling for this rulemaking rather than actual emissions.
 - b. Explain IEPA’s statement that it also considered “emission reductions linked . . . to existing market conditions.” TSD at 28.
 - c. Clarify whether using actual emissions in the culpability analysis would have altered the reductions required by various sources to ensure attainment and maintenance of the 1-hour SO₂ NAAQS. If so, explain why IEPA did not use this approach.
58. IEPA proposes that compliance with the proposed fuel sulfur content limits will be demonstrated with records such as records from a fuel supplier (35 Ill. Adm. Code 214.121(b)(2)(C)(i)). During the July 8, 2015 hearing, IEPA stated, “[t]he recordkeeping requirement begins January 1, 2107, so it’s not clear to me that should an inspector visit such a source, they would even necessarily look at the older [purchasing records], but if it [fuel] were new, then the inspector would look at that and, you know, base their compliance determination on the available records.” July 8, 2015 Hearing Transcript at 16.
- a. Assuming that a regulated source has maintained such records of purchasing compliant fuel, does IEPA recommend any other steps for a regulated source to demonstrate compliance?
 - b. If a regulated source previously placed fuel exceeding the proposed sulfur content limit in a storage tank, but switches to purchasing ultra-low sulfur diesel fuel prior

to January 1, 2017, does IEPA recommend any steps to demonstrate compliance in addition to maintaining records from the fuel supplier? Is the source required to empty the tank? Is the source required to determine the sulfur content of the combined fuel in the tank for purposes of demonstrating compliance with proposed Section 214.121(b)(2)(A) and (B)?

- c. Clarify whether the compliance determination under proposed Section 214.121(b)(2)(C)(i) would be based solely on the fuel purchasing records dated January 1, 2017 or later.
 - d. The current regulations at Section 214.161(a) tie the burning of liquid fuel to the emission of sulfur dioxide in terms of kg SO₂/MW-hr or lbs/mmBtu. The proposed revisions at Sections 214.161(b) and (c) tie the use or purchase of liquid fuel to the sulfur content of the fuel in terms of ppm. Explain if there are comparable values in lbs/mmBtu for the values provided in ppm: 15, 500, and 1000 ppm.
59. In the TSD, IEPA stated that coal fired units in the CPS group will still be required to meet the fleet-wide average limit for SO₂ in Section 225.295(b) without the units converting to natural gas being used in the averaging calculation to demonstrate compliance with the limit. TSD at 11. The proposed amendment to 225.295(b) sets forth that CPS group for purpose of subsection (b) includes only those specified Electric Generating Units (EGUs) that combust coal.
- a. Explain IEPA's reason for excluding these units.
 - b. Section 225.295(d), which includes an equation for calculating the CPS group average annual SO₂ emission rate uses a term for the "actual annual SO₂ lbs of each EGU in the CPS group" without limiting the CPS group to those that combust coal. Would it be acceptable to IEPA to include a cross-reference to Section 225.295(b) as follows:

225.295(b) Emission Standards for SO₂. Beginning in calendar year 2013 and continuing in each calendar year thereafter, the CPS group must comply with the applicable CPS group average annual SO₂ emissions rate listed as follows. For purposes of this subsection (b) and (d) only, the CPS group includes only those specified EGUs that combust coal:

SO_{2i} = actual annual SO₂ lbstons of each EGU in the CPS group as set forth in subsection (b)