

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
) **R11-20**
AMENDMENTS TO 35 ILL.) **(Rulemaking - Air)**
ADM. CODE PART 229,)
HOSPITAL/MEDICAL/INFECTIOUS)
WASTE INCINERATORS)

NOTICE

TO: John Therriault, Acting Clerk
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PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the PREFILED TESTIMONY OF DIXON NWAJI of the Illinois Environmental Protection Agency a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
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DATED: February 18, 2011

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**THIS FILING IS SUBMITTED
ON RECYCLED PAPER**

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PREFILED TESTIMONY OF DIXON NWAJI

Illinois Pollution Control Board Hearing on Illinois Environmental Protection Agency Proposal to Amend Standards under 35 Illinois Administrative Code, Part 229 (“Part 229”) for Hospital/Medical/Infectious Waste Incinerators (“HMIWI”)

March 22, 2011

My name is Dixon Nwaji and I am an Environmental Protection Engineer with the Air Quality Planning Section in the Illinois Environmental Protection Agency (“Illinois EPA”). I have been with the Illinois EPA in this capacity since April 1991. My responsibility in this capacity includes (among other things) tracking the development of regulations under section 112 of the Clean Air Act (CAA), specifically, the national emission standards for hazardous air pollutants (and related regulations under CAA Section 129), and providing outreach to the regulated community and other stakeholders in the implementation of the regulations. The proposed amendments to standards under Part 229 will substantially reduce emissions of hazardous air pollutants and criteria pollutants from medical waste incinerators. Medical waste incinerators are major sources of persistent, bioaccumulative, and toxic pollutants such as lead, cadmium, dioxins/furans, and mercury. These pollutants are known or suspected to cause serious health effects, such as cancer, birth defects, and lung defects as well cause adverse environmental and ecological effects. The reductions in emissions of these toxic pollutants that will be achieved from the implementation of the proposed amendments will accordingly benefit public health and the environment.

Introduction

The CAA requires the USEPA to promulgate maximum achievable control technology standards (MACT) for the control of emissions of listed pollutants from HMIWI to protect public health and welfare. MACT standards are based on the maximum degree of reduction in emissions of listed toxic air pollutants already being achieved by the best-controlled and lower-emitting sources in an industry group (in this case, the HMIWI source category). The listed pollutants are hydrogen chloride, carbon monoxide, lead, cadmium, mercury, particulate matter, oxides of nitrogen, sulfur dioxide, and dioxin/furans.

On September 15, 1997, the United States Environmental Protection Agency (“USEPA”) published new source performance standards (“NSPS”) for new HMIWI units, and emissions guidelines (“EG”) for existing HMIWI units (“the 1997 NSPS/EG standards”).

New source performance standards are Federal regulations that are implemented and enforced locally by states and local agencies under delegation authority from the USEPA. Emissions guidelines are intended to initiate State action to develop State regulations that are, at least, as stringent as the requirements of the promulgated emissions guidelines. Illinois EPA submitted an approved state implementation plan (“SIP”) that reflects the emissions guidelines under the 1997 NSPS/EG standards. The standards and requirements contained in the SIP are codified under Part 229.

On March 2, 1999, the U.S. Court of Appeals for the District of Columbia Circuit (“the D.C Circuit”), in a case challenging USEPA’s methodology in deriving the 1997 MACT standards, remanded the rule for further explanation from USEPA of its derivation of the standards. Since the D.C Circuit did not vacate the rule, its requirements remained in effect during the remand and were fully implemented by September 15, 2002.

On October 6, 2009, the USEPA in response to the D.C. Circuit’s remand published revised NSPS and EG for HMIWI units (“the 2009 NSPS/EG standards”). The amended standards addressed issues raised in litigation by petitioners, and also satisfied USEPA’s obligation under the CAA to conduct a review of the HMIWI MACT standards every five years. With the promulgation of the 2009 NSPS/EG standards, Illinois EPA is required under the CAA to submit a revised SIP to address the new requirements under the revised emissions guidelines.

Background

Incineration is among the existing waste treatment technologies used to process medical waste to make it biologically and chemically safe for disposal in a landfill. The advantages of incineration include destruction of pathogens and hazardous organics, reduction in the volume of material combusted, and energy recovery. In addition, incineration leaves wastes unrecognizable after treatment. A major disadvantage of incineration as a treatment method is the public health risk posed by the emissions of hazardous air pollutants from the waste incineration process. Other waste treatment technologies such as autoclaving (and landfilling), gas/vapor sterilization, chemical disinfection, thermal inactivation, microwave sterilization and others are being embraced as alternative treatment options to incineration as they do not pose the level of public health risk that incineration does.

Each waste treatment method presents its own performance issues and environmental impacts. The alternative treatment options to varying degrees are not as effective as incineration when used to treat certain waste types such as pathological, chemotherapy and pharmaceutical wastes. In terms of environmental impacts autoclaving, for example, does not achieve the volume reduction as incineration that some medical wastes that are autoclaved may require more landfill space than if incinerated. Other environmental impacts associated with landfilling of autoclaved medical wastes include landfill gas emissions, landfill leachate issues, and impacts of waste transportation traffic.

Summary of Proposed Revisions

Emission limits under the 2009 NSPS/EG standards are far more stringent than the 1997 NSPS/EG standards that most of the HMIWI units nationwide (including units located in

Illinois) would need to improve performance in order to comply with amended standards. The CAA requires that the standards under an approvable SIP be at least as protective as those under the promulgated emissions guidelines. The proposed revisions to Part 229 are deemed equivalent in stringency to the amended standards under the 2009 NSPS/EG standards.

The proposed emissions limits apply at all times, including during periods of startup, shutdown and malfunction (SSM). The regulatory exemption provision that allowed facilities under MACT programs to exceed emission limits during periods of SSM was vacated in 2008 by the D.C. Circuit, and as a result the provision is deleted from the proposed revisions to Part 229.

Also deleted from the proposed revisions are percent reductions limits for hydrogen chloride, lead, cadmium, and mercury. Because the approach used in determining percent reduction limits for these pollutants under the 1997 NSPS/EG standards did not account for non-technology factors that also affect emissions from HMIWI, the use of percent reduction limit as an option for compliance demonstration was deleted from the 2009 NSPS/EG standards.

Emissions from HMIWI units depend greatly on the materials that are combusted. Enhanced waste management practices such as waste segregation at the point of generation, purchasing of recycled or recyclable products, and good combustion control practices are effective pretreatment strategies for reducing emissions of certain target pollutants. Occupational Safety and Health Administration requirements preclude commercial HMIWI operators from segregating medical waste received from client waste generators for treatment. Taking into account the effectiveness of waste segregation as a pretreatment strategy, the proposed revisions include a requirement that commercial HMIWI operators provide training and education in waste management practices, and ensure that each client develops its own waste management plan that includes elements such as waste segregation and purchasing of recycled or recyclable products, among others.

The proposed revisions include additional stack testing requirements, and the provision that would allow for the use of previous test(s) results for initial compliance demonstration if certain criteria are met. Also included is the provision that would allow HMIWI operators to forego required annual test(s) for the subsequent 2 years if all three annual test(s) over a 3-year period indicate compliance with the applicable limits for particulate matter, carbon monoxide, or hydrogen chloride. The proposed revisions also include the requirements for a one-time visible emissions test of ash handling operations, and annual equipment and air pollution control device(s) inspections.

The proposed revisions include a provision for a phased schedule for compliance with the amended emission limits. The phased schedule is provided to enable HMIWI operators that may need to install and/or modify equipment in order to demonstrate compliance with the amended emission limits.

Affected Sources

There are two known existing HMIWI units in operation in Illinois that are subject to Part 229 requirements. The two units are both categorized as large based on waste charging capacity, and are commercially operated by Stericycle, Inc (“Stericycle”), at its Clinton facility. Stericycle is a major provider of medical waste management services. In addition to its use of incineration

to treat medical waste, Stericycle also uses other alternative treatment methods such as its proprietary Electro-Thermal Deactivation and autoclaving to process waste at its other facilities outside the state.

Cost and Economic Impacts

Under the existing Part 229 standards, initial performance test (for all target pollutants) and subsequent annual tests (for 3 of the target pollutants) are required for compliance demonstration. Based on the results of past performance tests, neither of the two known HMIWI units (as configured) meets all the emission limits for the target pollutants in the proposed revisions. That is, the 2 HMIWI units would need to improve performance by installing control system, adding incremental control, using any of the alternatives to compliance, or a combination of these measures to meet the proposed standards.

Analysis of USEPA's data developed for the 2009 NSPS/EG standards rulemaking show an estimated total capital cost for compliance with the proposed revisions of approximately \$2.3 million for the 2 HMIWI units. The total annual cost at compliance is estimated at approximately \$700,000. Autoclaving followed by landfilling is considered a viable alternative to incineration. If this alternative disposal option is used, the estimated compliance costs for the 2 HMIWI units show a total capital cost of approximately \$981,000, and a total annual cost of approximately \$526,000.

Based on the analysis of data used in developing the 2009 NSPS/EG standards on which the proposed revisions to Part 229 are based, it is not expected that the incremental costs of compliance will significantly impact commercial operators and waste generators, whether the costs are absorbed or passed on to customers. The additional costs imposed by the proposed revisions both to commercial operators and waste generators, will accelerate the trend towards alternative waste treatment options such as autoclaving. For the waste generators, the additional costs serve as incentive to implement enhanced waste management practices such as waste segregation to reduce cost of disposing their waste by minimizing the amount of waste sent off-site for treatment. For the commercial operator, it is expected that this will translate to a decline in the quantity of medical waste received for treatment, as well as declines in treatment costs, incineration revenues, and profits.

In developing the proposed revisions to Part 229 the Illinois EPA reviewed and relied upon the documents detailing results of USEPA's analyses of data used in developing the 2009 NSPS/EG standards on which the proposal is based. The proposal to amend the existing Part 229 standards is both technically and economically feasible.

Thank you for the opportunity to testify.

