

WEST VIRGINIA  
SECRETARY OF STATE

KEN HECHLER

ADMINISTRATIVE LAW DIVISION

FORM #6

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OFFICE OF THE SECRETARY OF STATE  
WEST VIRGINIA

NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED  
BY THE WEST VIRGINIA LEGISLATURE.

AGENCY: Division of Environmental Protection, Office of Air Quality TITLE NUMBER: 45

AMENDMENT TO AN EXISTING RULE: YES  , NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 24

TITLE OF RULE BEING AMENDED: "To Prevent and Control Emissions from  
Hospital/Medical/Infectious Waste Incinerators"

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: \_\_\_\_\_

TITLE OF RULE BEING PROPOSED: \_\_\_\_\_

~~THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.~~

AUTHORIZATION IS CITED IN (house or senate bill number) HB4223

SECTION 64-3-1(i), PASSED ON March 11, 2000

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON

THE FOLLOWING DATE: May 1, 2000

*Carrie J. Chambers*

Authorized Signature



Executive Office  
#10 McJunkin Road  
Nitro, WV 25143-2506  
Telephone No: (304)759-0575  
Fax No: (304)759-0526



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## West Virginia Bureau of Environment

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Cecil H. Underwood  
Governor

Michael C. Castle  
Commissioner

April 18, 2000

Ms. Judy Cooper  
Director, Administrative Law  
Division  
Secretary of State's Office  
Capitol Complex  
Charleston, WV 25305

RE: 45CSR24 – "To Prevent and Control Emissions from  
Hospital/Medical/Infectious Waste Incinerators"

Dear Ms. Cooper:

This letter will serve as my approval to file the above-referenced rule with your office as "Notice of Final Filing and Adoption of a Legislative Rule Authorized by the West Virginia Legislature."

Your cooperation in the above request is very much appreciated. If you should have any questions or require additional information, please call Carrie Chambers in my office at 759-0515.

Sincerely,

Michael C. Castle  
Commissioner

MCC:cc

cc: Karen Watson  
Carrie Chambers

# LEGISLATIVE HISTORY ABSTRACT

## 45CSR24

### To Prevent and Control Emissions from Hospital/Medical/ Infectious Waste Incinerators

Bureau of Environment  
Division of Environmental Protection  
Office of Air Quality  
House Bill 4223 Section 64-3-1(i)

9/1/99	Filed Notice of Public Hearing with Secretary of State.
9/1/99	Initial Filing with Legislative Rule-Making Review Committee.
10/12/99	Held Public Hearing.
10/12/99	End of Public Comment Period.
12/22/99	Agency Approved Rule Filed with Secretary of State and Legislative Rule-Making Review Committee.
1/20/00	Rule Approved by Legislative Rule-Making Review Committee.
3/11/00	Passed the West Virginia Legislature.
4/13/00	Approved by the Governor.
4/18/00	Rule Final Filed with Secretary of State.
5/1/00	Effective Date of Rule.

45CSR24

**TITLE 45  
LEGISLATIVE RULE  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF AIR QUALITY**

FILED  
APR 18 12 52 PM '00  
OFFICE OF WEST VIRGINIA  
SECRETARY OF STATE

**SERIES 24  
TO PREVENT AND CONTROL EMISSIONS FROM  
HOSPITAL/ MEDICAL/INFECTIOUS WASTE INCINERATORS**

**§45-24-1. General.**

1.1 Scope.--This rule establishes standards of performance and emission standards for hospital/medical/infectious waste incinerators (HMIWI) pursuant to Sections 111 and 129 of the federal Clean Air Act as amended in 1990 (CAA). It is the intent of the Director to adopt these standards by reference. It is also the intent of the Director to adopt associated reference methods, performance specifications and other test methods which are appended to such standards.

1.2. Authority.--W.Va. Code §§22-5-1 et seq.

1.3. Filing Date. -- April 18, 2000

1.4. Effective Date. -- May 1, 2000

1.5. Incorporation by Reference.--Federal Counterpart Regulation. The Director has determined that a federal counterpart rule exists. In accordance with the Director's recommendation, and with limited exception, this rule incorporates by reference 40 CFR Part 60 Subpart Ec, effective September 15, 1997.

1.6. Former Rules -- This legislative rule amends 45CSR24 - "To Prevent and Control Emissions From Hospital/Medical/Infectious Waste Incinerators" which was filed on May 20, 1999 and became effective on June 1, 1999.

**§45-24-2. Definitions.**

2.1. Definitions of all terms used, but not defined in this subsection, shall have the meaning given to them in 40 CFR Part 60 Subpart Ec. Terms not defined therein shall have the meaning given to them in the federal Clean Air Act, 40 CFR Subparts A and B, or this rule.

2.2. "Administrator" shall mean the Administrator of the United States Environmental Protection Agency or his or her designated representative.

2.3. "Director" shall mean the director of the division of environmental protection or such other person to whom the director has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8.

2.4. "Existing" shall mean each HMIWI for which construction was commenced on or before June 20, 1996.

2.5. "Hospital/medical/infectious waste incinerator" or "HMIWI" means any device that combusts any amount of hospital waste and/or medical/infectious waste as defined in 40 CFR §60.51c.

2.6. "Hospital waste" shall mean discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

2.7. "Medical/infectious waste" shall mean any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed below:

2.7.a. Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

2.7.b. Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

2.7.c. Human blood and blood products including:

2.7.c.1. Liquid waste human blood;

2.7.c.2. Products of blood;

2.7.c.3. Items saturated and/or dripping with human blood; or

2.7.c.4. Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

2.7.d. Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

2.7.e. Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

2.7.f. Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

2.7.g. Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 CFR Part 261; household waste, as defined in 40 CFR §261.4(b)(1); ash from incinerators of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials as identified in 40 CFR § 261.4(a)(1).

2.8. “New” shall mean each HMIWI that commenced construction after June 20, 1996 or for which modification is commenced after March 16, 1998.

2.9. “Small Rural HMIWI” shall mean an existing HMIWI which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area and which burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 lb/week limitation does not apply during performance tests.

2.10. “Standard Metropolitan Statistical Area (SMSA)” shall mean any areas listed in OMB Bulletin No. 93-17 entitled “Revised Statistical Definitions for Metropolitan Areas” dated June 30, 1993.

**§45-24-3. Exemptions.**

3.1. The following combustors are exempt from this rule:

3.1.a. A combustor is not subject to this rule during periods when only

pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned, provided the owner or operator of the combustor:

- 3.1.a.1. Notifies the Director of an exemption claim; and
- 3.1.a.2. Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned.
- 3.1.b. Any co-fired combustor if the owner or operator of the co-fired combustor:
  - 3.1.b.1. Notifies the Director of an exemption claim; and
  - 3.1.b.2. Provides an estimate of the relative amounts of hospital, medical/infectious waste, and other fuels and wastes combusted at the co-fired combustor.
  - 3.1.b.3. Keeps records on a calendar quarter basis of the weight of hospital waste, medical/infectious waste, and all other fuels and wastes combusted at the co-fired combustor.
- 3.1.c. Any combustor required to have a permit under 42 U. S. C. §6925, 45 CSR 25 and 33 CSR 20.
- 3.1.d. Any combustor which meets the applicability requirements under 40 CFR Part 60 Subparts Cb, Ea, and Eb.
- 3.1.e. Any pyrolysis unit.
- 3.1.f. Cement kilns firing hospital waste and/or medical/infectious waste.

3.2. Physical or operational changes made to an existing HMIWI solely for the purpose of complying with this rule are not considered a modification under 40 CFR §60.51c and do not result in an existing HMIWI becoming subject to the requirements of Section 4.2.

**§45-24-4. Requirements.**

4.1. No person may construct, reconstruct, modify, or operate, or cause to be constructed, reconstructed, modified, or operated a HMIWI which results in a violation of this rule.

4.2. Each new HMIWI shall comply with all of the applicable standards, requirements and provisions of 40 CFR Part 60 Subpart Ec, effective September 15, 1997, including any

reference methods, performance specifications and other test methods associated with Subpart Ec, which are herein incorporated by reference.

- 4.3. Each existing HMIWI shall comply with the following:
  - 4.3.a. Emission limits presented in Table 1.
  - 4.3.b. Operator training and qualification requirements specified in 40 CFR §60.53c.
  - 4.3.c. Waste management plan specified in 40 CFR §60.55c.
  - 4.3.d. Compliance and performance testing specified in 40 CFR § 60.56c, excluding the fugitive emissions testing requirements under 40 CFR §§60.56c(b)(12) and (c)(3).
  - 4.3.e. Monitoring requirements 40 CFR §60.57c.
  - 4.3.f. Reporting and recordkeeping requirements specified in 40 CFR §60.58c, excluding sections 40 CFR §§60.58c (a), (b)(2)(ii), and (b)(7).
  - 4.3.g. Opacity requirements specified in 40 CFR §60.52c(b).
- 4.4. Each existing small rural HMIWI shall comply with the following:
  - 4.4.a. Emission limits presented in Table 1, under the Rural category.
  - 4.4.b. Operator training and qualification requirements specified in 40 CFR §60.53c.
  - 4.4.c. Waste management plan specified in 40 CFR §60.55c.
  - 4.4.d. No later than 1 year after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators, an initial equipment inspection shall be conducted. Annual equipment inspections shall be conducted thereafter (no more than 12 months following the previous annual equipment inspection), as outlined in subsection 4.4.d.1. through subsection 4.4.d.17. Within 10 operating days following an equipment inspection all necessary repairs shall be completed unless the owner or operator obtains written approval from the Director establishing an alternative repair schedule. All equipment inspections shall include the following:
    - 4.4.d.1. Inspection of all burners, pilot assemblies, and pilot sensing devices for proper operation: cleaning of pilot flame sensor, as necessary;



- 4.4.d.2. Ensuring proper adjustment of primary and secondary chamber combustion air, and adjustment as necessary;
- 4.4.d.3. Inspection of hinges and door latches and lubrication as necessary;
- 4.4.d.4. Inspection of dampers, fans, and blowers for proper operation;
- 4.4.d.5. Inspection of HMIWI door and door gaskets for proper sealing;
- 4.4.d.6. Inspection of motors for proper operation;
- 4.4.d.7. Inspection of primary chamber refractory lining; cleaning and repairing/replacing lining as necessary;
- 4.4.d.8. Inspection of incinerator shell for corrosion and/or hot spots;
- 4.4.d.9. Inspection of secondary/tertiary chamber and stack, cleaning as necessary;
- 4.4.d.10. Inspection of mechanical loader, including limit switches, for proper operation, if applicable;
- 4.4.d.11. Visual inspection of waste bed (grates), and repairing/sealing, as appropriate;
- 4.4.d.12. For the burn cycle that follows the inspection, documentation that the incinerator is operating properly and making any necessary adjustments;
- 4.4.d.13. Inspection of air pollution control device(s) for proper operation, if applicable;
- 4.4.d.14. Inspection of waste heat boiler systems to ensure proper operation, if applicable;
- 4.4.d.15. Inspection of bypass stack components;
- 4.4.d.16. Ensuring proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment; and

4.4.d.17. Generally observing that the equipment is maintained in good operating condition.

4.4.e. Compliance and performance testing in accordance with the following:

4.4.e.1. Testing requirements in 40 CFR §§60.56c(a), (b)(1) through (b)(9), (b)(11) (Mercury only), and (c)(1). The 2,000 lb/week limitation does not apply during performance tests.

4.4.e.2. Establishment of maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits.

4.4.e.3. Following the date on which the initial performance test is completed or is required to be completed under 40 CFR §60.8, whichever date comes first, the designated facility shall not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown, and malfunction. Operating parameter limits do not apply during performance tests.

4.4.e.4. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s). Operation above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM, CO and dioxin/furan emission limits, except as provided for in subsection 4.4.e.5.

4.4.e.5. The owner or operator of a designated facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the designated facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this section must be conducted using the identical opening parameters that indicated a violation under subsection 4.4.e.4.

4.4.f. Monitoring in accordance with the following:

4.4.f.1. Installation, calibration (to manufacturer's specifications), maintenance, and operation of a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum once every minute throughout operation.

4.4.f.2. Installation, calibration (to manufacturer's specifications), maintenance, and operation of a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI.

4.4.f.3. The owner or operator of a designated facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day and for 90 percent of the operating hours per calendar quarter that the designated facility is combusting hospital waste and/or medical/infectious waste.

4.4.g. Maintenance of records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or Director approved repair date.

4.4.h. Submission of an annual report containing information recorded under subsection 4.4.g. no later than 60 days following the year in which data were collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report (once the unit is subject to permitting requirements under Title V, the owner or operator must submit these reports semiannually). The report shall be signed and certified in accordance with subsection 4.5.

4.4.i. Opacity requirements specified in 40 CFR §60.52c(b).

4.5. Where reports are required to be submitted to the Director under the terms of a permit issued pursuant to 45 CSR 13, 45 CSR 14, 45 CSR 19, or 45 CSR 30, the reports shall be signed and certified in accordance with the requirements of the applicable permitting rule. Where reports are required to be submitted to the Director under this rule, and no permit is in effect under 45 CSR 13, 45 CSR 14, 45 CSR 19, or 45 CSR 30, the report shall be signed by the facility manager and shall contain a certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

4.6 Whenever provisions of the Code of Federal Regulations (CFR) are incorporated by reference in this rule, the reference shall be to the CFR, effective September 15, 1997.

**§45-24-5. Director.**

5.1. Any and all references in 40 CFR Part 60 Subpart Ec to the "Administrator" are amended to be the "Director" except in the following references which shall remain "Administrator", as follows:

5.1.a. The requirements of 40 CFR §60.56c(i) establishing operating parameters when using controls other than those listed in 40 CFR §60.56c(d).

5.1.b. Alternative methods of demonstrating compliance under 40 CFR §60.8.

**§45-24-6. Permits.**

6.1. On or before September 15, 2000, existing HMIWI facilities subject to this rule shall submit a complete application for a CAA Title V permit in accordance with the requirements of 45 CSR 30.

6.2. New HMIWI facilities subject to this rule shall submit a complete application for a CAA Title V permit in accordance with the requirements of 45 CSR 30 within twelve (12) months after commencing operation.

6.3. Nothing contained in this rule shall be construed or inferred to mean that permit requirements in accordance with applicable rules shall be in any way limited or inapplicable, including, but not limited to, the permitting requirements under 45 CSR 13, 45 CSR 14, and 45 CSR 19.

**§45-24-7. Compliance Dates.**

7.1. Except as provided for in subsections 7.2, 7.3, and 7.4, one year after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators, the owner or operator of any HMIWI facility shall be in compliance with all of the provisions of this rule.

7.2. No later than 120 days after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators, the owner or operator of an existing HMIWI facility required to install air pollution control equipment shall submit a compliance plan and schedule subject to the approval of the Director that meets the following criteria:

7.2.a. No later than 1 year after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators, a facility that plans to install air pollution control equipment other than a dry scrubber followed by a fabric filter, a wet scrubber or dry scrubber followed by a fabric filter and a wet scrubber shall submit a petition for site specific operating parameters under 40 CFR §60.56c(i) to the EPA Administrator and the Director;

7.2.b. No later than 1 year after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators services of an architectural and engineering firm regarding air pollution device(s) shall be obtained;

7.2.c. No later than 18 months after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators design drawings of an air pollution device(s) shall be ordered;

7.2.d. No later than 18 months after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators air pollution device(s) shall be ordered;

7.2.e. No later than 2 years after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators site preparation for installation of the air pollution device(s) shall be initiated;

7.2.f. No later than 33 months after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators initial startup of the air pollution device(s) shall be conducted;

7.2.g. No later than 33 months after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators initial compliance test(s) of the air pollution device(s) shall be conducted; and

7.2.h. No later than 3 years after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators or by September 16, 2002, whichever date is earlier, no owner or operator of an existing HMIWI shall allow or cause to be allowed an HMIWI to be operated except in compliance with all applicable provisions of this rule.

7.3. An owner or operator, who submits in writing to the Director a request for an extension to comply beyond the dates required by subsection 7.2., shall submit to the Director no later than 9 months after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators the following information:

7.3.a. An analysis to support the need for an extension, including an explanation of why up to three years after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators is not sufficient time to comply with section 7.2.

7.3.b. A demonstration of the feasibility to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and

7.3.c. Measurable and enforceable incremental steps of progress to be taken towards compliance with the emission limits presented in Table 1.

7.4. The owner or operator will be notified in writing by the Director of his or her decision as to whether an extension shall be granted or denied. The owner or operator shall comply with one of the following:

7.4.a. If the request for extension is denied, the owner or operator shall submit a

compliance plan in accordance with section 7.2 no later than 30 days after denial of the request for extension, or one year after the effective date of U.S. EPA's approval of the 111(d)/129 State Plan for Hospital/Medical/Infectious Waste Incinerators, whichever is later.

7.4.b. If the request for extension is granted, the owner or operator shall submit a compliance plan and schedule commensurate with the granted extension no later than 30 days after the date the request for extension has been granted.

**§45-24-8. Inconsistency Between Rules.**

8.1 In the event of any inconsistency between this rule and any other existing rule of the West Virginia Division of Environmental Protection, such inconsistency shall be resolved by the determination of the Director and such determination shall be based upon the application of the more stringent provision, term, condition, method, or rule.

45 CSR 24

**Table 1  
Emission Limits for Hospital/Medical/Infectious Waste Incinerators**

Pollutant	Units (7% oxygen, dry basis)	HMIWI Size			
		Small	Medium	Large	Rural
Particulate Matter	mg/ dscm (gr/dscf) <sup>a</sup>	115 (0.05)	69 (0.03)	34 (0.015)	197 (0.086)
Carbon Monoxide	ppmv <sup>b</sup>	40	40	40	40
Dioxins/furans	ng/dscm total CCD/CDF (gr/10 <sup>9</sup> dscf) or ng/dscm TEQ (gr/10 <sup>9</sup> dscf) <sup>c</sup>	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	800 (350) or 15 (6.6)
Hydrogen chloride	ppmv or percent reduction	100 or 93%	100 or 93%	100 or 93%	3100
Sulfur dioxide	ppmv	55	55	55	55
Nitrogen oxides	ppmv	250	250	250	250
Lead	mg/dscm (gr/10 <sup>3</sup> dscf) or percent reduction <sup>d</sup>	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%	10 (4.4)
Cadmium	mg/dscm (gr/10 <sup>3</sup> dscf) or percent reduction	0.16 (0.07) or 65 %	0.16 (0.07) or 65 %	0.16 (0.07) or 65 %	4 (1.7)
Mercury	mg/dscm (gr/10 <sup>3</sup> dscf) or percent reduction	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%	7.5 (3.3)

<sup>a</sup> milligrams per dry standard cubic meter (grains per dry standard cubic feet)

<sup>b</sup> parts per million by volume

<sup>c</sup> nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet)

<sup>d</sup> milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet)