

**SUBCHAPTER 44. CONTROL OF MERCURY FROM  
COAL-FIRED ELECTRIC GENERATION UNITS.**

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**252:100-44-1. Purpose** The purposes of this regulation are:

- a. To protect the public health and welfare of the State of Oklahoma by requiring substantial reductions in emissions of mercury from coal-fired electric generating units;
- b. To require, in two stages, installation of pollution control equipment and/or other measures to achieve specified reductions in mercury emissions from coal-fired electric generating units no later than the end of 2008 and 2012; and
- c. To provide flexibility in implementation in order to reduce the economic cost of meeting the requirements of this regulation.

**252:100-44-2. Definitions** The following words and terms when used in this Subchapter shall have the following meaning unless the context clearly indicates otherwise:

**“Boiler”** means an enclosed fossil- or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam or other medium.

**“Bottoming-cycle cogeneration unit”** means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

**“Coal”** means any solid fuel classified as anthracite, bituminous, subbituminous or lignite by the American Society of Testing and Materials (ASTM) Standard Specification for Classification of Coals by Rank D388-77, 90, 91, 95, or 98a (incorporated by reference, see 40 CFR part 60, §60.17).

**“Coal-derived fuel”** means any fuel (whether in a solid, liquid or gaseous state) produced by the mechanical, thermal or chemical processing of coal.

**“Coal-fired”** means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year.

**“Cogeneration Unit”** means a stationary, coal-fired boiler or stationary, coal-fired combustion turbine:

(a) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating or cooling purposes through the sequential use of energy; and

(b) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after which the unit first produces electricity:

- (1) For a topping-cycle cogeneration unit:

(A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output; and

(2) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input.

**“Combustion turbine” means:**

(a) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(b) If the enclosed device under paragraph (a) of this definition is combined cycle, any associated heat recovery steam generator and steam turbine.

**“Electric Generating Unit” or “Unit” means:**

(a)(1) Except as provided in paragraph (2), a stationary coal-fired boiler (boiler) or stationary, coal-fired combustion turbine (combustion turbine) in the state serving at any time a generator with a nameplate capacity of more than 25 megawatts electric (MWe), producing electricity for sale; or

(2) A stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this definition, is not an electric generating unit, which begins to combust coal or coal-derived fuel and to serve a generator with a nameplate capacity of more than 25 MWe producing electricity for sale.

(b) “Electric generating unit” does not include a boiler or combustion turbine that qualified as a cogeneration unit during the 12-month period subsequent to the date it first produced electricity and continues to qualify as a cogeneration unit, and which has not served, at any time, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit’s potential electric output capacity, or 219,000 megawatt hours (MWh), whichever is greater, to any utility power distribution system for sale. If an otherwise qualifying boiler or combustion turbine ceases to qualify as a cogeneration unit, it shall become subject to paragraph (a) of this definition starting on the day it no longer qualifies as a cogeneration unit.

(c) “Electric Generating Unit” does not include a “solid waste incineration unit” as defined in Clean Air Act section 129(g)(1) combusting “municipal waste” as defined in Clean Air Act section 129(g)(5) so long as it is subject to Subpart Eb of 40 CFR Part 60; Subpart AAAA of 40 CFR Part 60; an EPA-approved state plan for implementing Subpart Cb of 40 CFR Part 60; Subpart FFF of 40 CFR 62; an EPA-approved state plan for implementing Subpart BBBB of 40 CFR Part 60; or Subpart JJJ of 40 CFR Part 62.

**“Electric Generating Plant” means an Electric Generating Unit or Units that are located on one or more contiguous or adjacent properties, and under common control of the same person (or persons under common control) which supply electricity to the electricity grid through a common electrical connection.**

**“Existing Unit” or “Existing EGU” means any Electric Generating Unit other than a new Electric Generating Unit.**

“Inlet Mercury” means the average concentration of mercury in flue gas at the inlet of the emission control device immediately downstream of the boiler of an Electric Generating Unit, as determined by methods prescribed by the state.

“Nameplate Capacity” means, starting from the initial installation of a generator, the maximum electrical generating output (in MW) that an Electric Generating Unit is capable of producing on a steady-state basis during continuous operation as specified by the manufacturer.

“New or Modified Unit” or “New or Modified Electric Generating Unit” means any Electric Generating Unit, construction or modification of which is commenced after the date of publication of proposed regulations prescribing a standard for control of mercury that will be applicable to the Electric Generating Unit.

“NO<sub>x</sub>” means oxides of nitrogen (nitrogen oxide and nitrogen dioxide).

“Operator” means any person that operates, controls or supervises an electric generating unit or a source that includes an electric generating unit and includes, but is not limited to, any holding company, utility system or plant manager of such an electric generating unit or source.

“Output-Based Emission Standard” means a maximum allowable rate of emissions of mercury or other pollutant per unit of electrical output from an EGU.

“Owner” means any person that has an ownership interest, legal or equitable, (or who is a holder of a leasehold interest) in a unit; or is an owner or operator of a unit, or any purchaser of power from a unit or owner or operator under a life-of-the-unit, firm power contractual arrangement, provided that, unless expressly provided in leasehold agreement, the term “owner” shall not include a passive lessor.

“PM” means particulate matter.

“SO<sub>2</sub>” means sulfur dioxide.

**252:100-44-3. Applicability.** The requirements of this subchapter apply to owners and operators of Electric Generating Units located within the State of Oklahoma.

**252:100-44-4. Requirements.** The owner or operator of an Electric Generating Unit subject to this subchapter shall, not later than 1/1/2007, apply to the Department for a mercury emissions permit.

a. Such application shall include:

1. A statement indicating that electric generating units in the state under the control of the owner or operator will comply with the emission limitations and other requirements of 252:100-44-5.a and 252:100-44-5.b or 252:100-44-5.c of this subchapter;

2. A detailed compliance plan for each applicable emission limitation for each unit under the control of the owner or operator, including monitoring and reporting;

3. A description of the fuel assumptions on which the plan is based; and

4. A description, for units where a catalytic reduction device will be installed to reduce emissions of NO<sub>x</sub>, of the measures that will be taken to avoid any increase in emission of oxidized forms of mercury.

b. The Department shall promptly review the mercury permit application and shall, if the application meets the terms of this subchapter, issue a permit. Such permit shall include:

1. [Option I] Provisions applicable to each unit as follows:

A. Enforceable requirements to comply with the emission limitations and other conditions of 252:100-44-5.a and 252:100-44-5.b.1 and 252:100-44-

5.b.3 for the period commencing December 31, 2008 and ending December 30, 2012;

B. Enforceable requirements to comply with the emission limitations and other requirements of 252:100-44-5.a and 252:100-44-5.b.2 and 252:100-44-5.b.3 for the period commencing December 31, 2012; and

C. Enforceable requirements to comply with the monitoring, recordkeeping and reporting obligations of 252:100-44-7 and 252:100-44-8.

2. [Option II] Provisions applicable to each unit as follows:

A. Enforceable requirements to comply with the emission limitations and other obligations 252:100-44-5.a, 252:100-44-5.c.1 and 252:100-44-5.c.4 for the period commencing December 31, 2008 and ending December 30, 2012;

B. Enforceable requirements to comply with the emissions limitations and other obligations of 252:100-44-5.a, 252:100-44-5.c.2 and 252:100-44-5.c.4 commencing December 31, 2012; and

C. Enforceable requirements to comply with the monitoring, recordkeeping and reporting obligations of 252:100-44-7 and 252:100-44-8.

#### **252:100-44-5. Emission Standards.**

##### a. Emission Standards for New Units.

1. Any new or modified unit subject to this subchapter shall comply at commencement of operation with one of the following two standards on a rolling 12-month basis:

A. A mercury output-based emission standard of 0.0060 – 0.0025 lb/GWh; or

B. A minimum 90-95 percent capture of inlet mercury.

2. The Department shall review the emission standards of 252:100-44-5.a.1 within five years after adoption of this regulation, and subsequently at intervals of no more than five years, to determine whether greater reductions in mercury emissions are available, and shall revise the emission standard for new and modified units accordingly not more than one year after completion of its review.

b. Emission Standards for Existing Sources: Option I. An electric generating unit subject to this subchapter shall meet the following emission limitation requirements, unless the owner or operator chooses to comply with 252:100-44-5.c:

1. Phase 1 –

A. Beginning December 31, 2008, the owner or operator of an existing unit subject to this subchapter shall comply with one of the following standards on a rolling 12-month basis:

i. A mercury output-based emission standard of 0.010 lb/GWh; or

ii. A minimum 80-percent capture of inlet mercury.

B. An owner or operator may demonstrate compliance with 252:100-44-5.b.1.A by averaging emissions from all existing units it owns or operates within the state.

2. Phase 2 –

A. Beginning December 31, 2012, the owner or operator of an existing unit subject to this subchapter shall comply with one of the following standards on a rolling 12-month basis:

i. A mercury output-based emission standard of 0.0060 – 0.0025 lb/GWh; or

ii. A minimum 90-95 percent capture of inlet mercury.

B. An owner or operator may demonstrate compliance with 252:100-44-5.b.2.A by averaging emissions from all existing units owned or operated at a single electric generating plant.

C. In the event that a unit is owned or operated by more than one entity, the Department, shall, for purposes of demonstrating compliance with Phase 1 or Phase 2 standards through averaging emissions, allocate to each owner or operator an appropriate portion of the generation from the unit to each owner or operator with such interest on the basis of information available to the Department. The Department's allocation of interests for this purpose shall be final.

3. An owner or operator that installs a selective catalytic reduction system or other device on an electric generating unit subject to this subchapter to control emissions of NO<sub>x</sub> shall take whatever steps are necessary to prevent any increase in emissions of oxidized forms of mercury.

c. Emission Standards for Existing Units: Option II. An electric generating unit subject to this subchapter shall meet the following emission limitation requirements, unless the owner or operator chooses to comply with 252:100-44-5.b:

1. Phase 1 –

A. Beginning December 31, 2008, each company that owns or operates an existing electric generating unit shall comply with one of the following standards on a rolling 12-month basis:

i. A mercury output-based emission standard of 0.0060 – 0.0025 lb/GWh; or

ii. A minimum 90-95 percent capture of inlet mercury.

B. An owner or operator may postpone compliance with 252:100-44-5.c.1.A for a group of its units that comprise not more than 50 percent of the owner or operator's electric generation capacity in the state. Such a postponement may be granted by the Department upon approval of:

i. Enforceable commitments for each postponed unit to comply with the multi-pollutant control requirements of 252:100-44-5.c.2.A and 252:100-44-5.c.2.B no later than December 31, 2012; and

ii. Enforceable commitments for each postponed unit to prevent increases in oxidized mercury emissions from the date this regulation is proposed through December 30, 2012.

2. Phase 2 –

A. Beginning December 31, 2012, each unit subject to this subchapter for which compliance with Phase 1 has been postponed pursuant to 252:100-44-5.c.1.B shall comply with each of the following multi-pollutant emission limitations:

i. Sulfur Oxides:

a. A sulfur dioxide output-based emission standard of 1.5 lb/MWh; or

b. A minimum 95 percent capture of fuel sulfur.

ii. Nitrogen Oxides: A nitrogen oxides output-based emission standard of 1.0 – 0.7 lb/MWh.

iii. Mercury:

a. A mercury output-based emission standard of 0.0060 – 0.0025 lb/GWh; or

b. A minimum 90-95 percent capture of inlet mercury;

c. Compliance to be determined on a rolling 12 month basis.

B. Beginning December 31, 2012, each unit subject to this subchapter for which compliance has been postponed pursuant to 252:100-44-5.c.1.B shall comply with a particulate matter emission standard of 0.030 – 0.015 lb/mmBtu. Compliance will be determined based on testing once per year.

3. In the event that a unit is owned or operated by more than one entity, the Department, shall, for purposes of demonstrating compliance with 252:100-44-5.a, 252:100-44-5.b, or 252:100-44-5.c by averaging emissions at any electric generating plant, allocate to each owner or operator an appropriate portion of the generation from the unit to each owner or operator with such interest on the basis of information available to the Department. The Department's allocation of interests for this purpose shall be final.

4. An owner or operator who installs a catalytic reduction or other device to control emissions of NO<sub>x</sub> on a unit subject to this subchapter shall take whatever steps are necessary to prevent any increase in emissions of oxidized forms of mercury.

**252:100-44-6. Compliance Determination.**

Compliance with the 12-month rolling average emission standards of this subchapter shall be determined in accordance with the method set forth at 40 CFR Part 60, Subpart Da, § 60.50(h).

**252:100-44-7. Monitoring.**

a. The owner or operator of an EGU subject to this subchapter demonstrating compliance with a mercury emission limitation shall measure, record and report the mercury in the exhaust gases by meeting the requirements of 40 CFR Part 60, §60.49a(p), 60.4170-60.4176, and 40 CFR Part 75, Subpart I.

b. The owner or operator of an EGU subject to this subchapter demonstrating compliance with an emission limitation for SO<sub>2</sub> or NO<sub>x</sub> pursuant to 252:100-44-5.c.2.A shall make such demonstration using data collected to meet the requirements of 40 CFR Part 75, in addition to any other required information (such as SO<sub>2</sub> inlet concentration and MWh generated). The owner or operator of an EGU subject to this subchapter demonstrating compliance with an emission limitation for particulate matter pursuant to 252:100-44-5.c.2.B shall make such a demonstration using 40 CFR Part 60 Method 5.

**252:100-44-8. Recordkeeping and Reporting.**

a. The owner or operator of an electric generating unit subject to this subchapter shall comply with the record keeping and reporting requirements incorporated in 40 CFR Part 75 and 40 CFR Part 63, §63.10(b) – (f).

b. The owner or operator of an electric generating unit subject to this subchapter shall maintain for a period consistent with its Operating Permit, and file with the Department, records of all compliance calculations and supporting information.

**252:100-44-9. Treatment of EPA Mercury Allowances.**

In the event that the U.S. Environmental Protection Agency allocates mercury allowances to the state of Oklahoma, such allowances shall be treated as follows:

a. No such allowances shall be allocated to any owner or operator of EGUs or other sources of mercury emissions into the atmosphere or discharges into the water of the state.

b. The state shall hold all allowances allocated by EPA to the state. At the end of each calendar year, the state shall instruct the U.S. Environmental Protection Agency to retire permanently all such allowances.