

OPTION 3
(DRAFT BASED ON THE NACAA MODEL RULE)

TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 100. AIR POLLUTION CONTROL

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

252:100-44-1. Purpose

The purpose of this subchapter is to control the emission of mercury from coal-fired electric generating units (EGU).

252:100-44-2. Definitions

The following words and terms when used in this subchapter shall have the following meanings 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.

“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:

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

(ii) 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” or “EGU” means:

(A)(1) Except as provided in paragraph (2), a stationary coal-fired boiler (boiler) or stationary, coal-fired combustion turbine (combustion turbine) 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 the Act, section 129(g)(1); combusting “municipal waste” as defined in the 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.

“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, for which construction or modification is commenced on or after the effective date of this subchapter.

“Output-based emission standard” means a maximum allowable rate of emissions of mercury or other pollutant per unit of electrical output from an EGU.

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

(a) The owner or operator of an electric generating unit subject to this subchapter shall, not later than January 1, 20XX, apply to the Department for a mercury emissions permit. 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 OAC 252:100-44-5(a) and (b);

(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_x, 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) Provisions applicable to each unit as follows:

(A) Enforceable requirements to comply with the emission limitations and other conditions of this subchapter 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 this subchapter for the period commencing December 31, 20XX; and

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

252:100-44-5. Emission standards*[Note: Emission standards under consideration are stated as a range]*

(a) 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:

(1) A mercury output-based emission standard of [0.006 – 0.0025] lb/GWh; or

(2) A minimum [90-95] percent capture of inlet mercury.

(b) **[ALTERNATIVE I]** An existing unit subject to this subchapter shall meet the following emission limitation requirements:

(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 0.01 lb/GWh; or

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

(B) An owner or operator may demonstrate compliance with OAC 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 [0.006 – 0.0025] lb/GWh; or

(ii) A minimum [90-95] percent capture of inlet mercury.

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

(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_x shall take whatever steps are necessary to prevent any increase in emissions of oxidized forms of mercury.

(b) [ALTERNATIVE II] An existing electric generating unit subject to this subchapter shall meet the following emission limitation requirements:

(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 [0.006 – 0.0025] lb/GWh; or

(ii) A minimum [90-95] percent capture of inlet mercury.

(B) An owner or operator may postpone compliance with paragraph (b)(1)(A) of this section 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 paragraphs (b)(2)(A) and (B) of this section no later than December 31, 2008; and

(ii) Enforceable commitments for each postponed unit to prevent increases in oxidized mercury emissions from the effective date of this subchapter.

(2) Phase 2 –

(A) Beginning December 31, 20XX, each unit subject to this subchapter for which compliance with Phase 1 has been postponed pursuant to paragraph (b)(1)(B) of this section 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 (compliance to be determined on a rolling 12 month basis):

(a) A mercury output-based emission standard of [0.006 – 0.0025] lb/GWh; or

(b) A minimum [90-95] percent capture of inlet mercury.

(B) Beginning December 31, 20XX, each unit subject to this subchapter for which compliance has been postponed pursuant to paragraph (b)(1)(B) of this section shall comply with a particulate matter emission standard of [0.03 – 0.015] lb/MMBtu.

(3) An owner or operator who installs a selective catalytic reduction or other device to control emissions of NO_x 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 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 60.49a(p) 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 SO₂ or NO_x pursuant to OAC 252:100-44-5(b)(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. The owner or operator of a unit subject to this subchapter demonstrating compliance with an emission limitation for particulate matter pursuant to OAC 252:100-44-5(b)(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 in 40 CFR Part 75 and 40 CFR 63.10(b) – (f).

(b) The owner or operator of an electric generating unit subject to this subchapter shall maintain records of all compliance calculations and supporting information for a period consistent with its operating permit.

252:100-44-9. Treatment of EPA mercury allowances

The state shall hold all mercury allowances allocated by EPA. At the end of each calendar year, the state shall instruct the EPA to retire permanently all such allowances.