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Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

ARTICLE I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUBPART C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 123. STANDARDS FOR CONTAMINANTS

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(Editor's Note: The following text is new and is printed in regular type to enhance readability.)

MERCURY EMISSIONS

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MERCURY EMISSIONS

**§ 123.201. Purpose.**

Sections 123.202 – 123.215 establish mercury emission standards, annual emission limitations as part of a statewide mercury allowance program with annual non-tradable mercury allowances and other requirements for the purpose of reducing mercury emissions from coal-fired electric generating units or cogeneration units.

**§ 123.202. Definitions.**

The following words and terms, when used in §§ 123.201 and 123.203 – 123.215, have the following meanings, unless the context clearly indicates otherwise:

*Btu – British thermal unit* – The amount of thermal energy necessary to raise the temperature of one pound of pure liquid water by one degree Fahrenheit at the temperature at which water has its greatest density (39°F).

*Bituminous coal* -- Coal that is classified as bituminous according to the ASTM International Standard D388-90, Standard Classification of Coals by Rank. For the purposes of this regulation bituminous coal shall also include anthracite coal according to the ASTM International Standard D388-77, Standard Classification of Coals by Rank.

*CFB – Circulating Fluidized Bed unit* - Combustion of fuel in a bed or series of beds (including bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

*CO<sub>2</sub>* – Carbon dioxide.

*CS-ESP -- Cold side electrostatic precipitator* -- A particulate control device installed downstream of a boiler air preheater that does the following:

- (i) Charges particles with an electric field and causes them to migrate from the gas to a collection surface.
- (ii) Treats flue gas after heat extraction from the gas has been completed.
- (iii) Operates within a temperature range of no greater than 400°F.

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*Coal refuse* – A byproduct of coal mining or coal cleaning operations with an ash content greater than 50% by weight and a heating value of less than 13,900 kilojoules per kilogram (6,000 Btus per pound) on a dry basis.

*Cogeneration unit* – A stationary, coal-fired boiler or stationary, coal-fired combustion turbine which:

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

(ii) Produces, for a topping-cycle cogeneration unit, during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the 12-month period in which the unit first produces electricity:

(A) Useful thermal energy not less than 5% of total energy output.

(B) Useful power that when added to one-half of useful thermal energy produced:

(I) Is not less than 42.5% of total energy input, if useful thermal energy produced is 15% or more of total energy output.

(II) Is not less than 45% of total energy input, if useful thermal energy produced is less than 15% of total energy output.

(iii) Produces, for a bottoming-cycle cogeneration unit, during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the 12-month period in which the unit first produces electricity, useful power not less than 45% of total energy input.

*EGU -- Electric Generating Unit--*

(i) Except as provided in paragraph (ii), a stationary coal-fired boiler or stationary, coal-fired combustion turbine that serves or has served at any time since the start-up of the unit's combustion chamber, a generator:

(A) With a nameplate capacity of more than 25 megawatts electric (MWe).

(B) That produces electricity for sale.

(ii) For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a unit that both:

(A) Serves a generator with a nameplate capacity of more than 25 MWe.

(B) Supplies, in a calendar year, more than one third of its potential electric output capacity or 219,000 MWh, whichever is greater, to a utility power distribution system for sale.

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(iii) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, it shall become subject to subparagraph (i) of this definition starting on the day it first no longer qualifies as a cogeneration unit.

*Existing EGU* – An EGU which commenced construction, modification or reconstruction before January 30, 2004.

*FF – Fabric filter* – An add-on air pollution control system that removes particulate matter (PM) and emissions of nonvaporous metals by passing flue gas through filter bags.

*Facility* – All units located on one or more contiguous or adjacent properties and which are owned or operated by the same person under common control.

*GWh – Gigawatt-hour* – One billion watt-hours.

*IGCC -- Integrated gasification combined cycle unit* – A coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No coal is directly burned in the unit during operation.

*MMBtu* – One million British thermal units.

*MW – Megawatt* – A unit for measuring power equal to one million watts.

*MWe – Megawatt electric* – One million watts of electric capacity.

*MWh – Megawatt-hour* – One million watt-hours.

*Nameplate Capacity --* The maximum electrical generating output (in MWe) that the generator is capable of producing on a steady-state basis during continuous operation (when not restricted by seasonal or other deratings):

(i) As specified by the manufacturer, starting from the initial installation of the generator.

(ii) As specified by the person conducting the physical change, starting from the completion of a subsequent physical change in the generator resulting in an increase in the maximum electrical generating output in MWe.

*New EGU* – An EGU which commenced construction, modification or reconstruction on or after January 30, 2004.

*O<sub>2</sub>* – Oxygen.

*Phase 1* – The period from January 1, 2010, through December 31, 2014.

*Phase 2* – The period beginning January 1, 2015, and each subsequent year thereafter.

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*PCF -- Pulverized coal-fired unit* - A steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units.

*Rolling 12-month basis* – A determination made on a monthly basis from the relevant data for a particular calendar month and the preceding 11 calendar months (total of 12 months of data).

*SCR - Selective catalytic reduction* – A process where a gaseous or liquid reductant (most commonly ammonia or urea) is added to the flue gas stream in the presence of a catalyst. The reductant reacts with nitrogen oxides in the flue gas to form water and nitrogen dioxide.

*SO<sub>2</sub>* – Sulfur dioxide.

*Space velocity* – The exhaust gas volume per hour of the SCR corrected to standard temperature and pressure divided by the volume of the catalyst.

*Standby unit* – A unit that is out of operation but under a Department-approved maintenance plan as provided under § 127.11a (relating to reactivation of sources), which will enable the source to be reactivated in accordance with the terms of the permit issued to the source.

*WFGD -- Wet flue gas desulfurization unit* – A sulfur dioxide control system located downstream of the steam generating unit that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material.

(i) Alkaline reagents used in WFGD technology include lime, limestone and sodium.

(ii) This term applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms.

*W-h – watt-hour* – A unit of energy equivalent to one watt of power expended for one hour of time.

### **§ 123.203. Applicability.**

The requirements of §§ 123.201 – 123.215 apply to owners and operators of a coal-fired electric generating unit (EGU) or coal-fired cogeneration unit with a nameplate capacity of 25 MWe or greater located in this Commonwealth.

### **§ 123.204. Exceptions.**

Consistent with the provisions of § 123.207(b)(1), the owner or operator of an EGU that enters into an enforceable agreement with the Department not later than December 31,

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2007, for the shutdown and replacement of the unit with IGCC technology no later than December 31, 2012, shall be exempted from compliance with the following Phase 1 requirements for the converted unit:

(1) § 123.205 (relating to emission standards for coal-fired electric generating units).

(2) § 123.207 (relating to annual emission limitations for coal-fired electric generating units).

**§ 123.205. Emission standards for coal-fired electric generating units.**

(a) *New EGUs.* In addition to the mercury emission limitation requirements of § 123.207 (relating to annual emission limitations for coal-fired electric generating units), the owner or operator of a new EGU subject to § 123.203 (relating to applicability) shall comply at the commencement of operation on a rolling 12-month basis with one of the following standards:

(1) *PCF EGU.* The owner or operator of a PCF EGU shall comply with one of the following:

(i) A mercury emission standard of 0.011 pounds of mercury per gigawatt-hour.

(ii) A minimum 90% control of total mercury as measured from the mercury content in the coal as fired.

(2) *CFB EGU.* The owner or operator of a CFB EGU shall comply with the following applicable provisions:

(i) CFB EGUs burning 100% waste coal shall comply with the mercury emission standard for new units as established under 40 CFR Part 60, Subpart Da, which is adopted and incorporated by reference in § 122.3 (relating to adoption of standards) of this article.

(ii) CFB EGUs burning 100% bituminous coal shall comply with either:

(A) A mercury emission standard of 0.011 pounds of mercury per gigawatt-hour.

(B) A minimum 90% control of total mercury as measured from the mercury content in the coal as fired.

(iii) CFB EGUs burning multiple fuels shall comply with a prorated emission standard based on the percentage of heat input from the coal and the percentage of heat input from the waste coal.

(3) *IGCC EGU.* The owner or operator of an IGCC EGU shall comply with one of the following:

(i) A mercury emission standard of 0.0048 pounds of mercury per gigawatt-hour.

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(ii) A minimum 95% control of total mercury as measured from the mercury content in the coal as fired.

(b) *Baseline for review.* The emission standards in § 123.205(a) (relating to emission standards for coal-fired electric generating units) will serve as a baseline for review and approval of case-by-case best available technology determinations for a new EGU in accordance with the requirements of 25 Pa. Code Chapter 127 (relating to construction, modification, reactivation and operation of sources).

(c) *Existing EGUs.* In addition to the mercury emission limitation requirements of § 123.207, the owner or operator of an existing EGU subject to § 123.203 shall comply on a rolling 12-month basis with one of the following standards:

(1) *Phase 1.* Effective from January 1, 2010, through December 31, 2014.

(i) *PCF EGU.* The owner or operator of a PCF shall comply with one of the following:

(A) A mercury emission standard of 0.024 pounds of mercury per gigawatt-hour.

(B) A minimum 80% control of total mercury as measured from the mercury content in the coal as fired.

(ii) *CFB EGU.* The owner or operator of a CFB shall comply with one of the following:

(A) A mercury emission standard of 0.0058 pounds of mercury per gigawatt-hour.

(B) A minimum 95% control of total mercury as measured from the mercury content in the coal as fired.

(2) *Phase 2.* Effective beginning January 1, 2015, and each subsequent year.

(i) *PCF EGU.* The owner or operator of a PCF shall comply with one of the following:

(A) A mercury emission standard of 0.012 pounds of mercury per gigawatt-hour.

(B) A minimum 90% control of total mercury as measured from the mercury content in the coal as fired.

(ii) *CFB EGU.* The owner or operator of a CFB shall comply with one of the following:

(A) A mercury emission standard of 0.0058 pounds of mercury per gigawatt-hour.

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(B) A minimum 95% control of total mercury as measured from the mercury content in the coal as fired.

**§ 123.206. Compliance requirements for the emission standards for coal-fired electric generating units.**

(a) The owner or operator of one or more EGUs subject to the emission standards of § 123.205 (relating to emission standards for coal-fired electric generating units) shall demonstrate compliance with the standards using one of the following methods:

- (1) Compliance on a unit-by-unit basis.
- (2) Facility-wide emissions averaging.

(b) The owner or operator of an existing EGU combusting 100% bituminous coal which is controlled by an air pollution control device configuration of:

(1) A CS-ESP or FF and a WFGD will be presumed to be in compliance with the emission standard requirements of § 123.205(c)(1) without any additional compliance demonstrations.

(2) SCR, CS-ESP or FF and WFGD will be presumed to be in compliance with the emission standard requirements of § 123.205(c)(2) without additional compliance demonstrations if the design space velocity of the SCR catalyst is no more than 3000 hr<sup>-1</sup>.

(3) Other technologies where the Department determines that there is sufficient data to provide a compliance presumption with the emission standard requirements of § 123.205(c)(1) or (2) without additional compliance demonstrations. The Department will publish these determinations in the *Pennsylvania Bulletin*.

(c) The Department may approve in a plan approval or operating permit, or both, an alternative mercury emission standard or schedule, or both, if the owner or operator of an EGU subject to the emission standards of § 123.205 demonstrates in writing to the Department's satisfaction that the mercury reduction requirements are economically or technologically infeasible. The owner or operator shall:

(1) Submit a plan approval application or operating permit application requesting an alternative emission standard or schedule, or both, to the Department for approval no later than 120 days before the applicable compliance deadline.

(2) Include the following in the application:

(i) A brief description, including make, model and location of each EGU.

(ii) A list of all air pollution control technologies and measures that have been installed on each EGU and are operating to control emissions of air contaminants including mercury.

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(iii) The dates of installation and commencement of operation for each of the technologies and measures required under subsection (c)(2)(ii).

(iv) An explanation of how the technology or measure was installed and if it is being operated according to the manufacturer's instructions for each of the technologies and measures required under subsection (c)(2)(ii).

(v) The results of each mercury stack test and other emissions measurements for the EGU following installation and commencement of operation of the air pollution control technologies and measures listed in accordance with subsection (c)(2)(ii).

(vi) A list of other air pollution control technologies or measures that the owner or operator proposes to install and operate on each EGU to control emissions of air contaminants including mercury.

(vii) A summary of how the owner or operator of the EGU intends to operate and maintain the unit during the term of the approved plan approval or operating permit, or both, including the associated air pollution control equipment and measures that are designed to maintain compliance with all other applicable plan approval or operating permit requirements and that are designed and operated to minimize the emissions of mercury to the extent practicable.

(viii) A proposed schedule that lists the increments of progress and the date for final compliance if an alternative compliance schedule is requested.

(ix) An emission reduction proposal and information on the technological feasibility of meeting the requirements of §§ 123.205, 123.207 – 123.215 and this section if an alternative emission standard is requested.

(x) Other information which the Department requests that is necessary for the approval of the application.

(d) For an EGU complying with the energy output-based mercury emission standards of § 123.205 (expressed in pounds of mercury per gigawatt-hour), the actual mercury emission rate of the EGU for each 12-month rolling period, monitored in accordance with §§ 123.210 – 123.215 and calculated as follows, shall not exceed the applicable emission standard:

$$ER = \frac{\sum_{i=1}^{12} E_i}{\sum_{i=1}^{12} O_i}$$

Where:

ER = Actual mercury emissions rate of the EGU for the particular 12-month rolling period, expressed in pounds per gigawatt-hour.

$E_i$  = Actual mercury emissions of the EGU, in pounds, in an individual month in the 12-month rolling period, as determined in accordance with the monitoring provisions.

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$O_i$  = Gross electrical output of the EGU, in gigawatt-hours, in an individual month in the 12-month rolling period.

(e) For an EGU complying with the percent control requirements of § 123.205, the actual control efficiency for mercury emissions achieved by the EGU for each 12-month rolling period, monitored in accordance with §§ 123.210- 123.215 and calculated as follows, shall meet or exceed the applicable efficiency requirement:

$$CE = 100 * \{1 - (\sum_{i=1}^{12} E_i \div \sum_{i=1}^{12} I_i)\}$$

Where:

CE = Actual control efficiency for mercury emissions of the EGU for the particular 12-month rolling period, expressed as a percent.

$E_i$  = Actual mercury emissions of the EGU, in pounds, in an individual month in the 12-month rolling period, as determined in accordance with the monitoring provisions of §§ 123.210 –123.215.

$I_i$  = Amount of mercury in the fuel fired in the EGU, in pounds, in an individual month in the 12-month rolling period, as determined in accordance with § 123.214 (relating to coal sampling and analysis for input mercury levels).

**§ 123.207. Annual emission limitations for coal-fired electric generating units.**

(a) *Statewide mercury non-tradable allowance program.* In addition to the mercury emission standard requirements of § 123.205 (relating to emission standards for coal-fired electric generating units), the owner or operator of a new or existing affected EGU subject to § 123.203 (relating to applicability) shall comply with the annual emission limitations established through a statewide mercury non-tradable allowance program under this section.

(b) *Emission limitation set-asides.* The total ounces of mercury emissions available for emission limitation set-asides as annual non-tradable mercury allowances in the statewide mercury allowance program are:

(1) 56,960 ounces (3,560 pounds) of mercury emissions for Phase 1, effective from January 1, 2010, through December 31, 2014.

(2) 22,464 ounces (1,404 pounds) of mercury emissions for Phase 2, effective beginning January 1, 2015, and each subsequent year.

(c) *New affected EGUs.* For each calendar year beginning January 1, 2010, the Department will set aside a total number of annual non-tradable mercury allowances for the owners and operators of new affected EGUs in Pennsylvania that do not yet have a baseline heat input determined in accordance with the requirements of an approved plan approval application or operating permit.

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(1) The total number of annual non-tradable mercury allowances set aside for the owners and operators of new affected EGUs will be equal to a percentage of the amount of ounces of mercury emissions in the statewide mercury allowance program established in subsection (a). The percentage of set-aside is:

(i) 5% of the Phase 1 annual non-tradable mercury allowances established in subsection (b)(1) for the years beginning January 1, 2010, through December 31, 2014.

(ii) 3% of the Phase 2 annual non-tradable mercury allowances established in subsection (b)(2) for the calendar year beginning January 1, 2015, and subsequent years.

(2) The annual non-tradable mercury allowances set aside for the owners and operators of new affected EGUs shall be placed in the annual emission limit supplement pool established under § 123.208 (relating to annual emission limit supplement pool).

(d) *Existing affected CFBs.* For each calendar year beginning January 1, 2010, the Department will set aside for the owners and operators of existing affected CFBs a total number of annual non-tradable mercury allowances from the total ounces of mercury emissions available for annual emission limit set-asides in Phase 2 of the statewide mercury allowance program established in subsection (b)(2).

(e) *Maximum allowances set aside for CFBs.* The maximum number of annual non-tradable mercury allowances set aside for the owner or operator of each existing affected CFB in accordance with the requirements of subsection (d) shall be determined by multiplying the affected CFB's baseline heat input fraction of the state's total baseline annual heat input for all EGUs by the Department's Phase 2 annual mercury allowance set-aside for existing EGUs, as follows:

(1) The baseline heat input in MMBtu for each existing affected mercury allowance program CFB will be the average of the three highest amounts of annual heat input using the heat input data for the CFB from the Department's acid rain database for the calendar years 2000 through 2004.

(2) The state's annual mercury emission allowance set-aside for existing EGUs for Phase 2 is 21,790 ounces.

(f) *Existing affected PCFs.* For each calendar year beginning January 1, 2010, the Department will set aside for the owners and operators of existing affected PCFs a total number of annual non-tradable mercury allowances from the total ounces of mercury emissions available for annual emission limit set-asides in Phase 1 and Phase 2 of the statewide mercury allowance program established in subsection (b)(1) and (b)(2).

(g) *Maximum allowances set aside for PCFs.* The maximum number of annual non-tradable mercury allowances set aside for the owner or operator of each existing affected PCF in accordance with the requirements of subsection (f) shall be determined by multiplying the existing affected PCF's baseline heat input fraction of the state's total baseline annual heat input for all EGUs by the Department's annual mercury allowance set-aside for existing affected EGUs in each phase, as follows:

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(1) The baseline heat input in MMBtu for each existing affected mercury allowance program PCF will be the average of the three highest amounts of annual heat input using the heat input data for the PCF from the Department's acid rain database for calendar years 2000 through 2004.

(2) The state's annual mercury emission allowance set-aside for existing EGUs is:

(i) 54,112 ounces for Phase 1.

(ii) 21,790 ounces for Phase 2.

(h) *Publication of maximum number of allowances set aside for Phase 1.* By July 1, 2009, the Department will publish in the *Pennsylvania Bulletin* the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of each existing affected CFB and PCF for Phase 1 of the statewide mercury allowance program. The non-tradable allowances shall only be used to demonstrate compliance with the annual emission limitation requirements.

(i) *Publication of maximum number of allowances set aside for Phase 2.* By July 1, 2014, the Department will publish in the *Pennsylvania Bulletin* the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of each existing affected CFB and PCF for Phase 2 of the statewide mercury allowance program. The non-tradable allowances shall only be used to demonstrate compliance with the annual emission limitation requirements.

(j) *Maximum number of allowances awarded.* By March 31 of the year following each reporting year, the Department will notify the owner or operator of each existing affected CFB and PCF, in writing, of the actual number of annual non-tradable mercury allowances awarded to the owner or operator of the EGU for the reporting year.

(1) The actual number of annual non-tradable mercury allowances awarded to the owner or operator of the EGU shall be based on the actual emissions reported to the Department in accordance with the requirements of §§ 123.210 – 123.215.

(2) If the actual emissions of mercury reported to the Department in accordance with the requirements of §§ 123.210 – 123.215 are less than the maximum number of annual non-tradable mercury allowances set aside in the statewide mercury allowance program for the owner or operator of an EGU in accordance with the requirements of either subsection (d) or (f), the Department will place the unused portion of annual non-tradable mercury allowances in the annual emission limit supplement pool established under the requirements of § 123.208 (relating to emission limit supplement pool).

(3) The unused portion of annual non-tradable mercury allowances set aside under subsection (d) or (f) shall not be added to the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of the existing affected EGU for subsequent years.

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(4) The actual number of annual non-tradable mercury allowances awarded to the owner or operator of the EGU shall not exceed the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of the EGU in the statewide mercury allowance program in accordance with the requirements of subsection (d) or (f) except as provided in § 123.209 (relating to petition process).

(5) Each ounce of mercury emitted in excess of the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of the affected EGU in accordance with the requirements of subsection (d) or (f) shall constitute a violation of the requirements of this section and the Act, except as provided under § 123.209.

(k) *Standby units.* Annual non-tradable mercury allowances will not be set aside for the owner or operator of an existing affected EGU that is already shut down, scheduled for shutdown, or is on standby as of the effective date of each set-aside phase under subsections (d) or (f). When a standby unit is ready for normal operation, the owner and operator may petition the Department for a number of annual non-tradable mercury allowances as provided under § 123.209.

(l) *Future emission limitations.* The Department may revise the percentage of set-aside used to determine the number of ounces of mercury set aside for future annual mercury emission limitations to accommodate the emissions from new EGUs so that the total number of ounces of mercury emissions in the statewide mercury allowance program is not exceeded.

(m) *Changes in calculation of baseline heat input.* The Department may revise the percentage of set-aside used to determine the number of ounces of mercury set aside for future annual mercury emission limitations to accommodate changes in the calculation of baseline heat input in accordance with the requirements of subsections (e) or (g) so that the total number of ounces of mercury emissions in the statewide mercury allowance program is not exceeded.

(n) *Maintained by Department.* The statewide mercury allowance program established under subsection (a) and the annual non-tradable mercury allowances set aside for emission limitations under the requirements of subsections (b) through (m) will be maintained by the Department.

(o) *Demonstration of compliance.* The owner or operator of one or more existing affected mercury allowance program EGUs subject to the requirements of this section shall demonstrate compliance with the applicable requirements using one of the following methods:

- (1) Compliance on a unit-by-unit basis.
- (2) Facility-wide emissions averaging.

**§ 123.208. Annual emission limit supplement pool.**

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(a) Effective January 1, 2010, the Department will establish an annual emission limit supplement pool to monitor annual non-tradable mercury allowances that:

(1) Have been created as part of the new affected EGU set-aside under § 123.207(c).

(2) Are unused annual non-tradable mercury allowances set aside as emission limit supplements under § 123.207(j)(2) (relating to annual emission limitations for coal-fired electric generating units).

(b) The emission limit supplement pool of annual non-tradable mercury allowances established under subsection (a) will be administered in accordance with the requirements of § 123.209 (relating to petition process) by the Department.

### **§ 123.209. Petition process.**

(a) Each calendar year beginning January 1, 2010, the owner or operator of either an existing affected EGU that emits amounts of mercury in excess of the maximum number of annual non-tradable mercury allowances set aside in accordance with the requirements of § 123.207 (relating to annual emission limitations for coal-fired electric generating units) or a standby affected EGU that is ready for normal operation may petition the Department, in writing, for supplemental annual non-tradable mercury allowances to be set aside for the owner or operator from the annual emission limit supplement pool established under § 123.208(a) (relating to annual emission limit supplement pool).

(b) The owner or operator shall submit a separate petition for each calendar year for which the owner or operator requests supplemental annual non-tradable mercury allowances to be set aside from the annual emission limit supplement pool.

(c) The owner or operator with more than one affected EGU shall submit a separate petition for each EGU for which the owner or operator requests supplemental annual non-tradable mercury allowances to be set aside from the annual emission limit supplement pool.

(d) The owner or operator of the existing affected EGU shall submit the petition to the Department no later than January 31 of the year following the calendar year for which the supplemental annual non-tradable mercury allowances are requested to be set aside.

(e) The owner or operator of the standby affected EGU shall submit the petition to the Department no later than 120 days before the date of anticipated start-up of the EGU.

(f) The petition must include the following:

(1) A brief description, including make, model, and location of each affected EGU.

(2) A list of all air pollution control technologies and measures that have been installed on each affected EGU and are operating to control emissions of air contaminants, including mercury.

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(3) For each of the technologies and measures listed in accordance with subsection (f)(2), the date of installation and commencement of operation.

(4) For each of the technologies and measures listed in accordance with subsection (f)(2), an explanation of how the technology or measure was installed and if it is being operated properly.

(5) The results of each mercury stack test and other emissions measurements for the affected EGU following installation and commencement of operation of the air pollution control technologies and measures listed in accordance with subsection (f)(2).

(6) A list of other air pollution control technologies or measures that the owner or operator proposes to install and operate on each affected EGU to control emissions of air contaminants, including mercury.

(7) A summary of how the owner or operator of the affected EGU intends to operate and maintain the EGU during the term of the approved plan approval or operating permit, or both, including the associated air pollution control equipment and measures that are designed to maintain compliance with all other applicable plan approval or operating permit requirements and that are designed and operated to minimize the emissions of mercury to the extent practicable.

(g) Each calendar year beginning January 1, 2010, the Department may set aside at its discretion, supplemental annual non-tradable mercury allowances from the annual emission limit supplement pool established under § 123.208(a), for the owners or operators of existing affected EGUs that successfully petition the Department in accordance with the requirements of this section, to be distributed in the following order of preference:

(1) Each owner or operator of a standby unit as defined under § 123.202 (relating to definitions).

(2) Each owner or operator of an existing affected EGU that is a CFB combusting 100% waste coal or bituminous coal along with any approved non-coal fuels.

(3) Each owner or operator of an existing affected EGU combusting 100% bituminous coal that is controlled by an air pollution control device configuration of SCR, CS-ESP or FF, WFGD and mercury-specific control technology.

(4) Each owner or operator of an existing affected EGU combusting 100% bituminous coal that is controlled by an air pollution control device configuration of SCR, CS-ESP or FF and WFGD.

(5) Each owner or operator of an existing affected EGU combusting 100% bituminous coal that is controlled by an air pollution control device configuration of WFGD and mercury-specific control technology.

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(6) Each owner or operator of an existing affected EGU combusting 100% bituminous coal that is controlled by an air pollution control device configuration of CS-ESP or FF and WFGD.

(7) Each owner or operator of an existing affected EGU based on the air pollution control technologies and measures that have been installed and are operating to control emissions of air contaminants, including mercury.

(h) If the petition for supplemental annual non-tradable mercury allowances is approved by the Department, the supplemental annual non-tradable mercury allowances set aside for the owner or operator of the existing affected EGU will be added to the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of the EGU in accordance with the requirements of § 123.207 only for the calendar year of the request.

(i) The supplemental annual non-tradable mercury allowances set aside under subsection (h) shall not be added to the maximum number of annual non-tradable mercury allowances set aside for the owner or operator of the EGU for subsequent years.

**§ 123.210. General monitoring and reporting requirements.**

(a) The owner or operator of a new EGU subject to the requirements of §§ 123.201 – 123.215 shall demonstrate compliance with the requirements of § 123.205 (relating to emission standards for coal-fired electric generating units) and § 123.207 (relating to annual emission limitations for coal-fired electric generating units) by installing and operating a continuous emissions monitoring system to measure, record and report the concentration of mercury in the exhaust gases from each stack.

(b) The owner or operator of an existing affected EGU shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this section, §§ 123.211 – 123.215, 139.101 (relating to general requirements) and the applicable provisions of the Continuous Source Monitoring Manual (DEP 274-0300-001). For purposes of complying with these requirements, the definitions in § 123.202 (relating to definitions) and in 40 CFR § 72.2 shall apply except as provided in subsection (c) of this section.

(c) For an affected EGU that emits 464 ounces (29 lbs) or less of mercury per year, the owner or operator of the affected EGU:

(1) Shall meet the general operating requirements in 40 CFR § 75.10 for the continuous emission monitors described in paragraphs (a)(2) and (a)(4) of 40 CFR § 75.81.

(2) Shall perform mercury emissions testing for the initial certification and on going quality assurance as described in paragraphs (c) through (e) of 40 CFR § 75.81.

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(3) May demonstrate compliance with the percent control requirements by averaging the coal mercury content and stack emission data collected during the rolling 12-month period.

(d) Requirements for installation, certification and data accounting. The owner or operator of each EGU shall:

(1) Install all monitoring systems required under this section, §§ 123.211 – 123.215 and the applicable provisions of 25 Pa. Code Chapter 139, Subchapter C, for monitoring mercury mass emissions (including all systems required to monitor mercury concentration, stack gas moisture content, stack gas flow rate and CO<sub>2</sub> or O<sub>2</sub> concentration, as applicable, in accordance with 40 CFR §§ 75.81 and 75.82).

(2) Successfully complete all certification tests required under § 123.211 (relating to initial certification and recertification procedures for emissions monitoring) and meet all other requirements of §§ 123.211 – 123.215 and this section that are applicable to the monitoring systems required under subsection (d)(1).

(e) The owner or operator shall comply with the monitoring system certification and other requirements of subsection (d)(1) and (d)(2) on or before the later of:

(1) March 1, 2009.

(2) Ninety (90) EGU operating days or 180 calendar days, whichever occurs first, after the date on which the EGU commences commercial operation.

(f) The owner or operator shall record, report and quality-assure the data from the monitoring systems required under subsection (d)(1) on and after the later of:

(1) March 1, 2009.

(2) Ninety (90) EGU operating days or 180 calendar days, whichever occurs first, after the date on which the EGU commences commercial operation.

(g) The owner or operator of an EGU that does not meet the applicable monitoring date set forth in subsections (e) and (f) for any monitoring system required under subsection (d)(1) shall, for each such monitoring system, determine, record and report maximum potential (or, as appropriate, minimum potential) values for:

(1) Mercury concentration.

(2) Stack gas flow rate.

(3) Stack gas moisture content.

(4) Other parameters required to determine mercury mass emissions in accordance with the requirements of 40 CFR § 75.80(g).

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(h) The owner or operator of an EGU that does not meet the applicable monitoring date set forth in subsections (e) and (f) for a monitoring system required under subsection (d)(1) shall, for this monitoring system, determine, record and report substitute data using the applicable missing data procedures in 40 CFR § 75.80(f) instead of the maximum potential (or, as appropriate, minimum potential) values for a parameter if the owner or operator demonstrates that there is continuity between the data streams for that parameter before and after the construction or installation of the monitoring systems required under subsection (d)(1).

(i) No owner or operator of an affected EGU shall use any alternative monitoring system, alternative reference method, or any other alternative to the requirements of this section and §§ 123.211 – 123.215 unless such alternative is approved in writing by the Department.

(j) No owner or operator of an affected EGU shall operate the EGU so as to discharge or allow to be discharged mercury emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this section, §§ 123.211 – 123.215 and 25 Pa. Code Chapter 139, Subchapter C.

(k) No owner or operator of an affected EGU shall disrupt the continuous emission monitoring system or portion of it or other approved emission monitoring method to avoid monitoring and recording mercury mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing or maintenance is performed in accordance with the applicable provisions of this section, §§ 123.211 – 123.215 and 25 Pa. Code Chapter 139, Subchapter C.

(l) No owner or operator of an affected EGU shall retire or permanently discontinue use of the continuous emission monitoring system or component of it or other approved monitoring system required under this section and §§ 123.211 – 123.215, except under either of the following circumstances:

(1) The owner or operator is monitoring emissions from the affected EGU with another certified monitoring system that has been approved by the Department, in writing, for use at that EGU and that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system, in accordance with the applicable provisions of this section, §§ 123.211 – 123.215 and 25 Pa. Code Chapter 139, Subchapter C.

(2) The owner or operator submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with the requirements of § 123.211(a)(5)(i) and a complete certification application in accordance with the requirements of § 123.211(a)(5)(ii).

### **§ 123.211. Initial certification and recertification procedures for emissions monitoring.**

(a) By the applicable deadline specified in §§ 123.210(e) (relating to general monitoring and reporting requirements) and 123.210(f), the owner or operator of an

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affected EGU shall comply with the following initial certification and recertification procedures for a continuous monitoring system (continuous emission monitoring system and an excepted monitoring system (sorbent trap monitoring system) as required under 40 CFR § 75.15 and 25 Pa. Code Chapter 139, Subchapter C):

(1) The owner or operator of the EGU shall ensure that each continuous monitoring system required by the applicable provisions of § 123.210 successfully completes all of the initial certification testing required under 40 CFR § 75.80(d) and 25 Pa. Code Chapter 139, Subchapter C.

(2) If the owner or operator of the EGU installs a monitoring system to meet the requirements of §§ 123.210 – 123.215 in a location where no monitoring system was previously installed, initial certification testing is required in accordance with the applicable provisions of 40 CFR § 75.80(d) and 25 Pa. Code Chapter 139, Subchapter C.

(3) If the owner or operator of the EGU makes a replacement, modification or change to a certified continuous emission monitoring system or excepted monitoring system (sorbent trap monitoring system) required by § 123.210 that may significantly affect the ability of the system to accurately measure or record mercury mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of 40 CFR § 75.81 or Appendix B to 40 CFR Part 75, the monitoring system for the EGU shall be recertified in accordance with the requirements of 40 CFR § 75.20(b) and 25 Pa. Code Chapter 139, Subchapter C.

(4) If the owner or operator of the EGU makes a replacement, modification or change to the flue gas handling system or the operation of the EGU that may significantly change the stack gas flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system and each excepted monitoring system (sorbent trap monitoring system) whose accuracy is potentially affected by the change in accordance with the requirements of 40 CFR § 75.20(b) and 25 Pa. Code Chapter 139, Subchapter C.

(5) This subsection applies to both the initial certification and recertification procedures of a continuous monitoring system required by § 123.210. For recertifications, replace the words “certification” and “initial certification” with the word “recertification,” replace the word “certified” with the word “recertified,” and follow the procedures required under 40 CFR § 75.20(b)(5) or 25 Pa. Code Chapter 139, Subchapter C as directed by the Department instead of the following procedures:

(i) The owner or operator shall submit to the Department written notice of the dates of certification testing.

(ii) The owner or operator shall submit to the Department a certification application for each monitoring system. A complete certification application shall include the information specified in 25 Pa. Code Chapter 139, Subchapter C.

(iii) If the Department issues a notice of disapproval of a certification application or a notice of disapproval of certification status, the owner or operator shall:

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(A) Substitute, for each disapproved monitoring system, for each hour of EGU operation during the period of invalid data specified under 40 CFR § 75.20(a)(4)(iii) or § 75.21(e) and continuing until the applicable date and hour specified under 40 CFR § 75.20(a)(5)(i), either the following values or, if approved by the Department in writing, an alternative emission value that is more representative of actual emissions that occurred during the period:

(I) For a disapproved mercury pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of mercury and the maximum potential flow rate, as defined in Sections 2.1.4.1 and 2.1.7.1 of Appendix A to 40 CFR Part 75.

(II) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO<sub>2</sub> concentration or the minimum potential O<sub>2</sub> concentration (as applicable), as defined in Sections 2.1.3.1, 2.1.3.2 and 2.1.5 of Appendix A to 40 CFR Part 75.

(III) For a disapproved excepted monitoring system (sorbent trap monitoring system) under 40 CFR § 75.15 and disapproved flow monitor, respectively, the maximum potential concentration of mercury and maximum potential flow rate, as defined in Sections 2.1.4.1 and 2.1.7.1 of Appendix A to 40 CFR Part 75.

(B) Submit a notification of certification retest dates and a new certification application in accordance with subsection (a)(5)(i) and (ii).

(C) Repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Department's notice of disapproval, within the time period specified by the Department in the notice of disapproval.

(b) The owner or operator shall submit a certification application to the Department within 45 calendar days after completing all initial certification or recertification tests required under this section.

### **§ 123.212. Out-of-control periods for emissions monitors.**

(a) If an emissions monitoring system fails to meet the quality-assurance and quality-control requirements or data-validation requirements of 25 Pa. Code Chapter 139, Subchapter C, data shall be substituted using the applicable missing data procedures in the Continuous Source Monitoring Manual (DEP 274-0300-001).

(b) If both an audit of a monitoring system and a review of the initial certification or recertification application reveal that a monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under § 123.210 (relating to general monitoring and reporting requirements) or the applicable provisions of 40 CFR Part 75, both at the time of the initial certification

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or recertification application submission and at the time of the audit, the Department will issue a notice of disapproval of the certification status of the monitoring system.

(1) For the purposes of this subsection, an audit shall be either a field audit or an audit of information submitted to the Department.

(2) By issuing the notice of disapproval, the Department revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system.

(3) The owner or operator shall follow the applicable initial certification or recertification procedures in § 123.210 for each disapproved monitoring system.

### **§ 123.213. Monitoring of gross electrical output.**

The owner or operator of an EGU complying with the requirements of either § 123.206(d) using electrical output (O<sub>i</sub>) or § 123.206(e) using percent control efficiency shall monitor gross electrical output of the associated generator(s) in watt-hours per hour.

### **§ 123.214. Coal sampling and analysis for input mercury levels.**

(a) Except as provided in § 123.210(c), the owner or operator of an EGU complying with §§ 123.201- 123.215 shall:

(1) Perform daily sampling of the coal combusted in the EGU for mercury content, in pounds per trillion Btu, as follows:

(i) Collect coal samples from the feeders or other representative location in accordance with the requirements of 40 CFR § 63.7521(c).

(ii) Composite coal samples in accordance with the requirements of 40 CFR § 63.7521(d).

(2) Analyze each of the composited coal samples for mercury content in accordance with the procedures of ASTM D 6414-01 or the current revision of this method.

(b) The owner or operator of an EGU shall use the data collected from the sampling and analysis required under subsection (a) to determine the input mercury content of the coal combusted in the EGU in terms of pounds of mercury per trillion Btu.

(c) The Department may change the frequency of the sampling and analysis of the coal combusted in the EGU for the input mercury level based on historical data provided by the owner or operator of the EGU. The change in the frequency will be approved by the Department as a minor modification to the Title V operating permit.

**§ 123.215. Recordkeeping and reporting.**

(a) The owner or operator of an affected EGU shall comply with the recordkeeping and reporting requirements in this section and the applicable recordkeeping and reporting requirements of 40 CFR § 75.84 and 25 Pa. Code Chapter 139, Subchapter C.

(b) The owner or operator of an affected EGU complying with §§ 123.201- 123.215 through the requirements of § 123.206(d) (relating to compliance requirements for the emission standards for coal-fired electric generating units) by using electrical output to determine the allowable emissions of the EGU shall maintain the daily gross electrical output in gigawatt-hours in the file required under 40 CFR § 75.84(a).

(c) The owner or operator of an affected EGU complying with §§ 123.201 – 123.215 through the requirements of § 123.206(e) by using input mercury levels to determine the allowable emissions of the EGU shall maintain the daily mercury content of coal used in pounds of mercury per trillion Btu and the daily input mercury content in pounds in the file required under 40 CFR § 75.84(a).

(d) Except as provided in § 123.210(c), the owner or operator of an affected EGU shall maintain records of the following:

(1) Daily outlet mercury or output mercury data using the time period appropriate to the excepted methodology (sorbent trap monitoring system).

(2) If using an averaging methodology, all other information collected on a daily basis necessary to calculate the average.

(3) The owner or operator shall record on a monthly basis the method through which each EGU demonstrated compliance for each month.

(4) An owner or operator who uses the averaging option of § 123.206(a)(2) shall calculate and record the:

(i) Monthly actual mercury emissions within 30 days of the end of each month.

(ii) Twelve-month rolling actual emissions each month.

(5) The owner or operator shall maintain the following records on site:

(i) The results of quarterly assessments conducted under Section 2.2 of Appendix B of 40 CFR Part 75.

(ii) Daily/weekly system integrity checks under Section 2.6 of Appendix B of 40 CFR Part 75.

(iii) Quality assurance records as required by the Continuous Source Monitoring Manual (DEP 274--0300-001).

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(6) The records required under subsection (d)(5) shall be made available to the Department upon request.

(e) The owner or operator shall submit quarterly reports to the Department in accordance with the requirements of the Continuous Source Monitoring Manual (DEP 274--0300-001).