

2547

Hughes, Marjorie

**From:** Brisini, Vincent J [vbrisini@reliant.com]  
**Sent:** Friday, August 25, 2006 4:12 PM  
**To:** RegComments@state.pa.us  
**Cc:** jeepps@state.pa.us; jslade@state.pa.us; kramamurth@state.pa.us; irrc@1rrc.state.pa.us  
**Subject:** Comments to the proposed mercury regulations, Pa.B. 3185, Saturday June 24, 2006



Environmental Quality Board ltr... One page summary of the Reliant... Reliant Response to Mercury\_Annex A Specific Q... Reliant commen... Comparison of PaDEP Hg proposa..

Attached are Reliant Energy's comments to the proposed mercury regulation. The attachments include a submittal letter, a one page summary of the proposal for distribution to the EQB members, specific comments to the AQTAC questions, specific comments in the proposed regulation (they are in red in the proposed regulation) and a comparison of the PaDEP proposed regulation and the Reliant Energy alternative proposal.

If you have any questions or comments, please contact me via this email address or by phone at (office) 724-597-8037 or (cell) 814-659-3764.

Vince Brisini

<<Environmental Quality Board ltr.pdf>> <<One page summary of the Reliant Proposal.pdf>>  
 <<Reliant Response to Specific Questions Asked by the AQTAC.pdf>> <<Mercury\_Annex A  
 Reliant comments.pdf>> <<Comparison of PaDEP Hg proposal to the Reliant Hg proposal.pdf>>

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 HEARING COMMISSION





121 Champion Way  
Canonsburg, PA 15317  
Writer's Direct Dial Number  
724-597-8037

August 25, 2006

Environmental Quality Board  
P.O. Box 8477  
Rachel Carson State Office Building, 15<sup>th</sup> Floor  
400 Market Street  
Harrisburg, PA 17101

**Re: *Comments to Proposed Rulemaking for Mercury, 25 PA Code Ch 123, 36 Pa.B. 3185,  
Saturday June 24, 2006***

Dear Sir or Madame:

Reliant Energy owns and/or operates 18 power plants in the Commonwealth of Pennsylvania. We welcome the opportunity to comment on the referenced proposed mercury regulation. We believe that the proposed mercury regulation, if promulgated without a "cap and trade" provision, will have a significant negative impact on the viability of Pennsylvania electric generators, coal suppliers and other industries that rely upon cost effective energy supplies.

To alleviate this situation, Reliant Energy is offering an alternative plan that preserves the unit and facility specific reductions but allows for a separate "cap and trade" regulation rather than using the "nontradable allowance concept contained in the proposed regulation. Reliant Energy believes this represents a compromise that best serves the needs of the Commonwealth.

**Reliant Energy alternative proposal to the proposed mercury regulation:**

Reliant proposes that PaDEP utilize a mercury control strategy that mimics the highly effective nitrogen oxides control strategy. Under this strategy, Pennsylvania would implement a Pennsylvania specific rule that requires all major source coal-fired boilers to install either presumptive mercury control technology or other measures or technology that control mercury emissions by Jan. 1, 2010. Simultaneously, PaDEP would issue a separate regulation that implements the "cap and trade" provisions of the CAMR. This multi-regulation approach has been extremely effective in controlling nitrogen oxides emissions as they relate to not only local concerns, but also relative to transport issues.

The Pennsylvania specific regulation:

- Applies on a unit specific basis.
- Results in unit specific emission limitations that could not be exceeded through emission allowance trading or use of emission reduction credits
- Is required regardless of the type of coal burned

- Allows alternative technologies to define the appropriate control technologies and strategies of smaller units
- Satisfies the EQB approval to develop a PA specific mercury rule


In addition to the Pennsylvania specific mercury rule, generators would still be required to comply with Pennsylvania CAMR emissions budgets ("cap"), which would include participation in the nationwide "cap-and-trade" program.

**Benefits:**

- Eliminates concerns about "hotspots" by requiring mercury emissions reductions at every PA coal-fired generating facility
- Does not significantly disadvantage Pennsylvania wholesale electric generators, coal suppliers and support services and industries relative to out-of-state competitors even though it is more stringent than the CAMR requirements alone
- Helps to control electricity costs which helps to stimulate economic growth in Pennsylvania
- Provides for the most cost-effective "co-benefits" control strategies to be implemented through the implementation of CAIR
- Provides for certainty of compliance which is a critical need relative to obtaining financing and satisfying shareholders
- Accelerates installation of control equipment at many PA generating facilities by "front loading" the control measures at some facilities that would otherwise not be implemented until 2018 which then achieves the full mercury reductions by 2015 rather than 2018 through the implementation of Phase II of CAIR.
- Preserves the Environmental Quality Board's approval of the PaDEP recommendation to develop a Pennsylvania specific Hg rule
- Does not disadvantage Pennsylvania wholesale electric generation in the event the CAMR is over-turned

If there are any questions relating to this proposal, please don't hesitate to contact me at 724-597-8037 or [vbrisini@reliant.com](mailto:vbrisini@reliant.com).

Sincerely,

  
Vincent J. Brisini  
CEMS Program Manager

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**Reliant Energy Comments**  
to  
**Specific questions of the Air Quality Technical Advisory Committee**  
**EQB (25 PA. Code CH. 123)**  
**Standards for Contaminants: Mercury**  
**(36 Pa.B. 3185)**  
**(Saturday, June 24, 2006)**

**1. Advantages/Disadvantages of Supplemental Mercury Pool**

Reliant Energy does not believe the Supplemental Mercury “nontradable” allowance pool will provide adequate “nontradable” allowances to allow averaging across units to ensure meeting the annual budget cap imposed by the Clean Air Mercury Rule (CAMR). As has been identified many times by PaDEP, Pennsylvania electric generating units (EGUs) have received fewer allowances than EGUs in other states. This circumstance imposes considerably greater emission reductions on PA EGUs than those in other states. As the supplemental pool cannot be counted upon to provide adequate “nontradable” allowances to meet the needs of the Commonwealth’s EGUS, these sources cannot rely upon the supplemental pool for compliance needs.

This concern over the inadequacy of allowances is due to the lack of economic incentive for the “over-control” of units under this proposed mercury rule. As currently proposed, the Department will simply take any allowances resulting from “over-control” of a unit and give them to a competitor wholesale electric generator (EWG) that hasn’t met their annual emission limit. This provides a great disincentive for any company to optimize or enhance the mercury removal at a single unit or facility. This transfer occurs with no compensation to the unit(s) that has paid to achieve the “over-control.”

Due to the likely inadequate number of allowances in the supplemental pool and the need to ensure compliance, EGUs in Pennsylvania will include the use of non-Pennsylvania coal supplies in their mercury control strategies. This is due to Pennsylvania coals having the highest mercury content bituminous coals.

A much more desirable option to the use of the proposed supplemental mercury allowance pool is the use of a cap and trade program, as is allowed under CAMR, to meet the allowances needs of the PA EGUs. This can be accomplished through the separate implementation of the unit specific control as proposed in this regulation, but then implement the CAMR cap and trade provisions as a separate regulation. This would be in place of the supplemental allowance pool and petition process under the proposed regulation to meet the CAMR annual PA mercury budget.

**2. New Source Set Aside Provisions**

A new source set aside (NSSA) should be part of any regulation. However, the unused “non-tradable” allowances in the new source set aside should not be retained in

the supplemental pool. Those unused "non-tradable" allowances should be returned to the affected units. Under the proposed rule, if there are unused "non-tradable" allowances available after they have been returned to the affected units, they will be taken and used in the supplemental pool, regardless. This could determine whether or not a unit can comply with its annual emission limit. As currently proposed, this is simply adding additional control requirements to the existing units even if there aren't any new units requesting from the NSSA.

Importantly, a NSSA provision is best managed as part of a market based cap and trade regulation as is allowed under the federal CAMR.

### **3. Coal Preparation as Part of Reducing Mercury**

Mercury removed through coal cleaning or other coal preparation should be credited toward meeting the mercury removal requirements of this proposed rule. This would encourage the use of what will likely be the most cost effective mercury removal to be part of the compliance strategy. This would also help preserve the opportunity to use Pennsylvania bituminous coals.

### **4. Compression of Phase I & II Compliance Schedules**

The U.S. EPA has established a Phase 2 implementation date of 2018 based on its assessment control technology availability. DEP has proposed to compress that date to 2015 without showing that technology will be available earlier. This raises concerns relative to availability of control technologies to meet the Phase 2 reduction requirements.

The proposed rule attempts to address this concern in a provision that provides for the consideration of alternative schedules and technologies. This provision is commendable and is necessary to address concerns with units that cannot economically install presumptive technologies or other maximum controls to achieve the unit specific removal requirements or the annual emission limit. However, an unrestricted "cap and trade" program, as allowed under CAMR, best implements this type of provision. "Non-tradable" allowances are not certain to be available to allow for this provision to be implemented. This is because there is reliance on "over-control" by units without any economic incentive to "over-control" and any unused "non-tradable" allowances that are not used in a vintage year are not held for future use when there may be insufficient "non-tradable" allowances. This same supplemental pool will be used to provide "non-tradable" allowances to units that can't meet the unit/facility annual limit as well as to provide for alternative controls and schedules. Without any certainty relative to the availability of "non-tradable allowances" this provision isn't adequate to address the alternative technologies or timing concerns of the accelerated schedule.

### **5. Start-Up Provisions, Cost Sharing Between Sources**

It is not clear how start-up provisions can be included in the proposed rule.

**6. Expansion of Daily Sampling of Coal from Feeders to "As Received"**

We recommend the proposed rule be revised to allow a variety of existing sampling programs to be used to demonstrate mercury removal from the coal being burned.

It is not necessary to demonstrate removal on a daily basis to comply with the proposed rule as the proposed demonstration is on an annual basis. Implementation of an "as fired" sampling system would be very expensive and will not provide information necessary for the success of the mercury emissions reduction provisions.

Acceptable samples should be as purchased, as received, as fired or pre-processing.

**7. Encouragement of Over-Compliance**

Under the proposed rule, plant owners do not recoup their investment in air pollution controls that exceed the reduction requirements. This is because DEP takes, with no compensation to the over-controlling EGU, any unused "non-tradable" allowances and distributes them to others, in most cases a competitor in the wholesale power market that has not complied. Under a market based cap and trade regulation, as is allowed under CAMR, the ability to market unused allowances provides the incentive necessary to achieve over-control.



**Annex A**

**TITLE 25. ENVIRONMENTAL PROTECTION**

**PART I. DEPARTMENT OF ENVIRONMENTAL  
PROTECTION**

**Subpart C. PROTECTION OF NATURAL RESOURCES**

**ARTICLE III. AIR RESOURCES**

**CHAPTER 123. STANDARDS FOR CONTAMINANTS**

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

**MERCURY EMISSIONS**

Sec.

- 123.201. Purpose.
- 123.202. Definitions.
- 123.203. Applicability.
- 123.204. Exceptions.
- 123.205. Emission standards for coal-fired EGUs.
- 123.206. Compliance requirements for the emission standards for coal-fired EGUs.
- 123.207. Annual emission limitations for coal-fired EGUs.
- 123.208. Annual emission limit supplement pool.
- 123.209. Petition process.
- 123.210. General monitoring and reporting requirements.
- 123.211. Initial certification and recertification procedures for emissions monitoring.
- 123.212. Out-of-control periods for emissions monitors.
- 123.213. Monitoring of gross electrical output.
- 123.214. Coal sampling and analysis for input mercury levels.
- 123.215. Recordkeeping and reporting.

**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 nontradable mercury allowances and other requirements for the purpose of reducing mercury emissions from coal-fired EGUs or cogeneration units.

### § 123.202. Definitions.

The following words and terms, when used in this section and §§ 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 1 pound of pure liquid water by 1° Fahrenheit at the temperature at which water has its greatest density (39°F).

*Bituminous coal*--

(i) Coal that is classified as bituminous according to the ASTM International Standard D388-90, Standard Classification of Coals by Rank.

(ii) For the purposes of this section and §§ 123.201 and 123.203--123.215, the term 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.

*Coal refuse*--Waste products of coal mining, physical coal cleaning, and coal preparation operations (for example--culm, gob, and the like) containing coal, matrix material, clay, and other organic and inorganic material.

*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 subparagraph (ii), a stationary coal-fired boiler or stationary( ~~delete "coal fired"~~) combustion turbine (Comment : **change to "or steam generating unit that burns a synthetic gas derived from coal."** (Note - this change is necessary to clarify that IGCC units and simple cycle units that burn synthetic gas derived from coal are affected units.) 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 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.

(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) 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*--An (delete "coal-fired") electric utility steam (Comment - this change is necessary to clarify that IGCC units do not burn coal. They burn synthetic gas derived from coal as explained further in the definition. The original definition is inaccurate as it provides contrary information.) 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, as defined under 40 CFR Part 60 (relating to standards of performance for new stationary sources), on or after January 30, 2004.

*O<sub>2</sub>*--Oxygen.

*PCF--Pulverized coal-fired unit*--

(i) 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.

(ii) The term includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units.

*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.

*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 (Comment : add "molecular" Note - this change is necessary to accurately define the process) nitrogen.

*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 including lime and limestone.

*Watt-hour*--A unit of energy equivalent to 1 watt of power expended for 1 hour of time.

### **§ 123.203. Applicability.**

The requirements of this section and §§ 123.201, 123.202 and 123.204--123.215 apply to owners and operators of an EGU located in this Commonwealth.

### **§ 123.204. Exceptions.**

Consistent with § 123.207(b)(1) (relating to annual emission limitations for coal-fired EGUs), the owner or operator of an EGU that enters into an enforceable agreement with the Department not later than December 31, 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) Section 123.205 (relating to emission standards for coal-fired EGUs).
- (2) Section 123.207.

### **§ 123.205. Emission standards for coal-fired EGUs.**

(a) *New EGUs*. In addition to the mercury emission limitation requirements of § 123.207 (relating to annual emission limitations for coal-fired EGUs), 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 GWh.

(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 (**Comment : add “as the only solid fuel” Note- This change accounts for the use of fuel oil or natural gas for start up and flame stabilization**) shall comply with the mercury emission standard for new units as established under 40 CFR Part 60, Subpart D (relating to standards of performance for fossil-fuel-fired steam generators for which construction is commenced after August 17, 1971), which is adopted and incorporated by reference in § 122.3 (relating to adoption of standards).

(ii) CFB EGUs burning 100% bituminous coal (**Comment : add “as the only solid fuel”**) shall comply with either:

(A) A mercury emission standard of 0.011 pounds of mercury per GWh.

(B) A minimum 90% control of total mercury as measured from the mercury content in the coal as (**Comment : change to “purchased, as received, as fired or pre-processing.” Note – This change is necessary to allow a variety of existing sampling programs to be used to demonstrate the mercury removal from the coal being burned. As the requirement for demonstration is an annual period, it is not necessary to demonstrate this removal on a daily basis. Implementation of an as fired sampling system would be very expensive and will not provide information that is necessary for the success of the PA mercury program.**)

(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 GWh.

(ii) A minimum 95% control of total mercury as measured from the mercury content in the coal as (**Comment : change to “purchased, as received or processed.”**)

(b) *Baseline for review.* The emission standards in this subsection 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 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 GWh.

(B) A minimum 80% control of total mercury as measured from the mercury content in the coal as (**Comment : change to “purchased, as received, as fired or pre-processing.”**)

(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 GWh.

(B) A minimum 95% control of total mercury as measured from the mercury content in the coal as (**Comment : change to “purchased, as received, as fired or pre-processing.”**)

(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 GWh.

(B) A minimum 90% control of total mercury as measured from the mercury content in the coal as (Comment : change to “purchased, as received, as fired or pre-processing.”)

(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 GWh.

(B) A minimum 95% control of total mercury as measured from the mercury content in the coal as (Comment : change to “purchased, as received, as fired or pre-processing.”)

### **§ 123.206. Compliance requirements for the emission standards for coal-fired EGUs.**

(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 EGUs) 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 ( Comment : add “as the only solid fuel.” Note- The change accounts for the use of fuel oil or natural gas for start up and flame stabilization.) 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 when 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*. (Comment: As the

department has consistently been representing that the injection of activated carbon prior to a cold-side electrostatic precipitator as an available low cost method to achieve significant mercury control, ACI + CS-ESP should be included as a Phase I presumptive technology. If emissions data show greater than 90% removal, it should then become a Phase 2 presumptive technology. Activated carbon injection in conjunction with a fabric filter (ACI + FF) should be a Phase 2 presumptive technology as that has been represented to be the most effective mercury specific control technology.)

(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: **(Comment: This provision is commendable and is necessary to address concerns with units which cannot economically install presumptive technologies or other maximum controls to achieve the unit specific removal requirements or the annual emission limit. However, an unrestricted "cap and trade" program, such as that allowed under CAMR, best complements this type of provision. "Non-tradable" allowances are not certain to be available to provide for this provision to be implemented. This is because there is reliance on "over-control" by units without any economic incentive to "over-control" and any unused "non-tradable" allowances that are not used in a vintage year are not held for future use when there may be inadequate "non-tradable" allowances. This same supplemental pool will be used to provide "non-tradable" allowances to units that can't meet the unit/facility annual limit as well as to provide for alternative controls and schedules. Without any certainty relative to the availability of "non-tradable allowances" this provision isn't adequate to address the alternative technologies or timing concerns of the accelerated schedule.)**

(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.

(iii) The dates of installation and commencement of operation for each of the technologies and measures required under subparagraph (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 subparagraph (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 subparagraph (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 this section and §§ 123.205, 123.207--123.215 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 GWh), 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, may 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 GWh.

$E_i$  = 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.

$O_i$  = Gross electrical output of the EGU, in GWhs, 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:

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

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 EGUs.**

**(Comments : Delete this requirement and use a trading program to demonstrate compliance with the annual federal Pennsylvania mercury "budget." This annual emission limit, which is based on the Clean Air Mercury Rule (CAMR) allocations, is an extremely stringent and unnecessary requirement. The imposition of this on a unit or even facility basis will force many Pennsylvania high-mercury coals out of**



the market for the generation of electricity. It has been presented in the PA Mercury Workgroup that Pennsylvania has been demonstrated to have the highest mercury content of eastern bituminous coals. Further, some smaller generating units cannot employ the presumptive or maximum control technologies that would be necessary to achieve the levels specified in this section and hope to remain competitive in the wholesale power market. This places those units in jeopardy of early retirement. While the Department has represented that very low cost control technologies for unit specific controls are available, these sorbent injection technologies are only recently being tested on units burning eastern bituminous coal. Therefore, expected mercury removal performance is highly uncertain and potentially subject to great variability. Based on this uncertainty, it is inappropriate to impose this annual cap in addition to the unit specific limitations of Section 123.205 and 123.206.

Recognizing the need to achieve the emission budgets specified by the federal CAMR it would be appropriate, indeed necessary, to allow CAMR trading to meet CAMR budget requirements. This can be accomplished by separately adopting the federal CAMR trading program to meet the annual budget requirements. The imposition of a PA specific mercury regulation would limit any trading under CAMR to a very few, but very important mercury allowances. This very small amount of trading would be the difference that would allow all PA coals to be economically usable and all PA units to be economically viable. An alternative, but much less desirable option, would be to use an intra-state trading program. However, an intrastate trading program would not be managed or administered by EPA which would require the development of the extensive and expensive infrastructure necessary to administer and manage a market-based trading system.)

(a) *Statewide mercury nontradable allowance program.* In addition to the mercury emission standard requirements of § 123.205 (relating to emission standards for coal-fired EGUs), 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 nontradable allowance program under this section. (Comment : While PaDEP has represented that the trading of

mercury allowances is illegal, this provision is in fact a trading provision. To prevent this provision from being a "takings" concern, the department has identified the over-controlled emissions as "nontradable allowances" as allowances are clearly identified as not being a property right in other trading programs. These allowances are only "nontradable" by the companies that pay to achieve emissions at a level less than those specified under Section 123.207. As the companies that would pay for the over control would not necessarily have this over control used at one of their plants, and in fact could see them used to assist a competitor, this concept removes any economic incentive to enhance or optimize mercury emission reductions. The emissions trading market has demonstrated that given an economic opportunity, companies will achieve emission reductions in the most cost effective manner - so effective, that "banks" of unused allowances are achieved. While some perceive these "banks" as a negative, they are actually a very positive feature of the cap and trade approach to environmental regulation. Any allowances that are in the "bank" are allowable emissions that have not occurred. That means that the actual emissions are less than specified in the emission "budget." Since mercury is an issue that must be addressed as a mass quantity or cumulative issue, a "cap and trade" program, which provides incentives to control early and over control emissions, would be the most effective control program. Importantly, mercury as regulated at the federal level allows for the trading of mercury allowances.)

(b) *Emission limitation set-asides.* The total ounces of mercury emissions available for emission limitation set-asides as annual nontradable 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 nontradable mercury allowances for the owners and operators of new affected EGUs in this Commonwealth that do not yet have a baseline heat input determined in accordance with the requirements of an approved plan approval application or operating permit.

(1) The total number of annual nontradable 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 nontradable 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 nontradable mercury allowances established in subsection (b)(2) for the calendar year beginning January 1, 2015, and subsequent years.

(2) The annual nontradable 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). **(Comment: The unused “non-tradable” allowances in the new source set aside should not be retained in the supplemental pool. Those unused “non-tradable” allowances should be returned to the affected units. Under the proposed rule, if there are unused “non-tradable” allowances available after they have been returned to the affected units, they will be taken and used in the supplemental pool, regardless. This could determine if a unit is compliant with the annual emission limit.)**

(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 nontradable 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 nontradable mercury allowances set aside for the owner or operator of each existing affected CFB in accordance with 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 nontradable 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).

(g) *Maximum allowances set aside for PCFs.* The maximum number of annual nontradable mercury allowances set aside for the owner or operator of each existing affected PCF in accordance with 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:

(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 nontradable 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 nontradable 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 nontradable 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 nontradable 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 nontradable mercury allowances awarded to the owner or operator of the EGU for the reporting year.

(1) The actual number of annual nontradable 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 §§ 123.210--123.215.

(2) If the actual emissions of mercury reported to the Department in accordance with §§ 123.210--123.215 are less than the maximum number of annual nontradable 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 nontradable mercury allowances in the annual emission limit supplement pool established under § 123.208 (relating to annual emission limit supplement pool).

**(Comment : A state run program without economic incentives to those that over control will likely have few allowances available for the state managed averaging/trading program. This is especially true for the second phase of this proposed regulation. This type of program can be better operated and managed by the EPA through the CAMR "cap and trade" provisions and the individual actions of the companies that would pay for the controls.)**

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

**(Comment : If it is the position of the Department to establish a state run averaging/trading program, the unused emissions should be added to any other supplemental pool allowances. This would allow for year-to-year variability in emissions. Given the cumulative and global nature of mercury deposition, this provision represents an unnecessary limit to economic growth.)**

(4) The actual number of annual nontradable mercury allowances awarded to the owner or operator of the EGU may not exceed the maximum number of annual nontradable mercury allowances set aside for the owner or operator of the EGU in the Statewide mercury allowance program in accordance with 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 nontradable mercury allowances set aside for the owner or operator of the affected EGU in accordance with subsection (d) or (f) shall constitute a violation of this section and the act, except as provided under § 123.209. **(Comment : Managing the emission budget under CAMR will likely prevent any facility from having to address any violation of the allowance allocations.)**

(k) *Standby units.* Annual nontradable 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 subsection (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 nontradable mercury allowances as provided under § 123.209. **(Comment: A standby unit cannot rely upon the potential for allowances to be made available. That unit cannot come back into service unless they are certain they can be compliant. A “cap and trade” program would provide that opportunity.)**

(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 subsection (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 nontradable mercury allowances set aside for emission limitations under subsections (b)--(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 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.**

(Comment : While this supplement pool has been developed to provide for state-wide averaging/trading as a means to ensure the Commonwealth as a whole is in compliance with its CAMR mercury budget, if a unit doesn't meet the annual limit specified by Section 123.207, it is actually of limited value to affected units. Because of the need of Electric Wholesale Generators (EWG) to obtain funding from financial institutions, a unit must be certain that it can comply with the annual emission limitation. That can mean that units will no longer consider some PA coal supplies, or that a unit that cannot assure compliance will be unable to obtain financing to fund additional controls. Regulation of the annual emission budget via a "cap and trade" program would provide the certainty that is necessary for financial institutions, certifications (e.g. Sarbanes Oxley), fuel contracts and plant operations. This certainty is necessary to not only secure capital funds from financial institutions, but also to attract individual and institutional investors.)

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

(1) Have been created as part of the new affected EGU set-aside under § 123.207(c) (relating to annual emission limitations for coal-fired EGUs).

(2) Are unused annual nontradable mercury allowances set aside as emission limit supplements under § 123.207(j)(2).

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

### **§ 123.209. Petition process.**

(Comment : This process cannot provide the certainty that is discussed above. This process assumes that there will be unused mercury allowances to be "traded" by the Commonwealth to meet the overall CAMR annual mercury budget. Further, the order of preference leaves those units which would be most likely to need a substantial number of allowances as the least likely to receive *any*

**allowances. The most reasonable and likely successful means to meet the CAMR annual mercury budget is through using the “cap and trade” provisions included in federal CAMR model rules. Reliance upon this petition process to meet the CAMR budget is also likely to cause concern from EPA that there isn’t any certainty that PA will meet the annual budget. If that occurs, the State Implementation Plan (SIP) could be found to be deficient.**

**As previously discussed, an alternative, but much less desirable option, would be to use an intra-state trading program as a means of managing the annual mercury budget. This would provide a greater level of certainty than the petition process, but less so than implementation of CAMR as described above.)**

(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 nontradable mercury allowances set aside in accordance with § 123.207 (relating to annual emission limitations for coal-fired EGUs) or a standby affected EGU that is ready for normal operation may petition the Department, in writing, for supplemental annual nontradable 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 nontradable 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 nontradable 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 by January 31 of the year following the calendar year for which the supplemental annual nontradable 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.

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

(4) For each of the technologies and measures listed in accordance with paragraph (2), an explanation of how the mercury control technology or measure as installed has been optimized for the maximum mercury emission reduction.

(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 paragraph (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 nontradable 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 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 noncoal fuels.

(3) Each owner or operator of an existing affected EGU combusting 100% bituminous coal (**Comment ; add “as the only solid fuel.” Note- this is necessary to account for start-up and flame stabilization fuels.**) 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 (**Comment : add “as the only solid fuel,”**) 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 (**Comment : add “as the only solid fuel,”**) that is controlled by an air pollution control device configuration of WFGD and mercury-specific control technology.

(6) Each owner or operator of an existing affected EGU combusting 100% bituminous coal (**Comment : add “as the only solid fuel,”**) 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 nontradable mercury allowances is approved by the Department, the supplemental annual nontradable mercury allowances set aside for the owner or operator of the existing affected EGU will be added to the maximum number of annual nontradable mercury allowances set aside for the owner or operator of the EGU in accordance with § 123.207 only for the calendar year of the request.

(i) The supplemental annual nontradable mercury allowances set aside under subsection (h) may not be added to the maximum number of annual nontradable 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 this section and §§ 123.201--123.209 and 123.211--123.215 shall demonstrate compliance with §§ 123.205 and 123.207 (relating to emission standards for coal-fired EGUs; and annual emission limitations for coal-fired EGUs) 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) Except as provided in subsection (c), the owner or operator of an existing affected EGU shall comply with the monitoring, recordkeeping and reporting requirements as provided in this section and, §§ 123.211--123.215 and § 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 (relating to definitions) apply.

(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 (relating to general operating requirements) for the continuous emission monitors described in 40 CFR 75.81(a)(2) and (4) (relating to monitoring of Hg mass emissions and heat input at the unit level).

(2) Shall perform mercury emissions testing for the initial certification and ongoing quality assurance as described in 40 CFR 75.81(c)--(e).

(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) The owner or operator of each EGU shall:

(1) Install all monitoring systems required under this section and §§ 123.211--123.215 and the applicable provisions of Chapter 139, Subchapter C (relating to requirements for continuous in-stack source monitoring for stationary sources), 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 (relating to monitoring of Hg mass emissions and heat input at common and multiple stacks).

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

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

(1) March 1, 2009.

(2) Ninety 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 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 in subsections (e) and (f) for any monitoring system required under subsection (d)(1) shall, for each 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 40 CFR 75.80(g) (relating to general provisions).

(h) The owner or operator of an EGU that does not meet the applicable monitoring date in subsections (e) and (f) for a monitoring system required under subsection (d)(1) shall, for each 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) An owner or operator of an affected EGU may not use any alternative monitoring system, alternative reference method or any other

alternative to the requirements of this section and §§ 123.211--123.215 unless the alternative is approved in writing by the Department.

(j) An owner or operator of an affected EGU may not operate the EGU so as to discharge or allow to be discharged mercury emissions to the atmosphere without accounting for all of the emissions in accordance with the applicable provisions of this section, §§ 123.211--123.215 and Chapter 139, Subchapter C.

(k) An owner or operator of an affected EGU may not 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 Chapter 139, Subchapter C.

(l) An owner or operator of an affected EGU may not 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 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 § 123.211(a)(5)(i) (relating to initial certification and recertification procedures for emissions monitoring) and a complete certification application in accordance with § 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) and (f) (relating to general monitoring and reporting requirements), the owner or operator of an 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

(relating to special provisions for measuring Hg mass emissions using the excepted sorbent trap monitoring methodology) and Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources):

(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) (relating to general provisions) and Chapter 139, Subchapter C.

(2) If the owner or operator of the EGU installs a monitoring system to meet the requirements of this section and §§ 123.210 and 123.212--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 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 (relating to monitoring of Hg mass emissions and heat input at the unit level) or 40 CFR Part 75, Appendix B (relating to quality assurance and quality control procedures), the monitoring system for the EGU shall be recertified in accordance with 40 CFR 75.20(b) (relating to initial certification and recertification procedures) and 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 40 CFR 75.20(b) and 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 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 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:

(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) (relating to quality assurance and quality control procedures) 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 40 CFR Part 75, Appendix A (relating to specifications and test procedures).

(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 40 CFR Part 75, Appendix A.

(III) For a disapproved excepted monitoring system (sorber 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 40 CFR Part 75, Appendix A.

(B) Submit a notification of certification retest dates and a new certification application in accordance with subparagraphs (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 Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources), data for the demonstration of compliance with § 123.207 (relating to annual emission limitations for coal-fired EGUs) 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 (relating to continuous emission monitoring), both at the time of the initial certification 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 must 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 will 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) (relating to compliance requirements for the emission standards for coal-fired EGUs) using electrical output ( $O_i$ ) or § 123.206(e)



using percent control efficiency shall monitor gross electrical output of the associated generators and report in watt-hours per hour.

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

(Comment : As purchased, as received, as fired or pre-processing samples should all be allowed to demonstrate the mercury removal requirements. The annual nature of the demonstration is such that this proposed sampling program, which will be very expensive, is unnecessary and doesn't provide any great value to the program. Any random errors will be resolved through time.)

(a) Except as provided in § 123.210(c) (relating to general monitoring and reporting requirements), the owner or operator of an EGU complying with this section and §§ 123.201--123.213 and 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 40 CFR 63.7521(c) (relating to what fuel analyses and procedures must I use?).

(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, or other alternative as approved by the Department.

(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 (relating to recordkeeping and reporting) and Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources).

(b) The owner or operator of an affected EGU complying with this section and §§ 123.201--123.214 through the requirements of § 123.206(d) (relating to compliance requirements for the emission standards for coal-fired EGUs) by using electrical output to determine the allowable emissions of the EGU shall maintain the daily gross electrical output in GWhs in the file required under 40 CFR 75.84(a).

(c) The owner or operator of an affected EGU complying with this section and §§ 123.201--123.214 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) (relating to general monitoring and reporting requirements), the owner or operator of an affected EGU shall maintain records as follows:

(1) Record the 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, record all other information collected on a daily basis necessary to calculate the average.

(3) Record for each 12-month compliance demonstration period the method through which each EGU demonstrated compliance.

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

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

(ii) The 12-month rolling actual emissions each month.

(5) Maintain the following records onsite:

(i) The results of quarterly assessments conducted under Section 2.2 of 40 CFR Part 75, Appendix B (relating to quality assurance and quality control procedures).

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

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

(6) Make available to the Department upon request the records required under paragraph (5).

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



## **Comparison of PaDEP mercury proposal to the Reliant mercury proposal**

- PaDEP requires mercury reductions from all units by 2010
- Reliant requires mercury reductions from all units by 2010
  
- PaDEP addresses “hotspot” concerns
- Reliant addresses “hotspot” concerns
  
- PaDEP “attempts” to preserve the continued use of eastern bituminous coal
- Reliant does preserve the continued use of eastern bituminous coal
  
- PaDEP relies on the co-benefits control achieved by implementation of the Clean Air Interstate Rule (CAIR)
- Reliant relies on the co-benefits control achieved by implementation of the Clean Air Interstate Rule (CAIR)
  
- PaDEP specifies mercury emission limitations
- Reliant specifies mercury emission limitations
  
- PaDEP achieves the mercury reductions by 2015
- Reliant achieves the mercury reductions by 2015
  
- PaDEP specifies a “command and control” cap on unit/facility mercury emissions
- Reliant specifies mercury allowance allocations to every unit
  
- PaDEP trades over-controlled emissions among units to meet the PA Clean Air Mercury Rule (CAMR) annual mercury emission cap without any compensation to the companies which emit below their emission cap
- Reliant companies trade over-control themselves to other units or companies with compensation to those achieving the over-control
  
- PaDEP cannot use allowances to meet the unit specific limitations
- Reliant cannot use allowances to meet the unit specific permit limitations

- PaDEP doesn't allow the banking of over-controlled emissions from one year to the next to address any issues that may arise with unit or control equipment operations or fuel quality variability
- Reliant allows banking of over-control of mercury emissions to meet CAMR requirements but not PA specific limitations.
  
- PaDEP introduces uncertainty by relying upon a petition process to address unit/facility emissions above the unit/facility mercury emissions cap which provides uncertainty relative to a unit's/facility's ability to certify compliance or meet any debt/financing covenants
- Reliant provides certainty through the ability to trade serialized allowances to plan with certainty their ability to meet the annual emission requirements under CAMR and meet any debt/financing covenants or disclosures
  
- PaDEP allows units that cannot install SCR/wet FGD under CAIR, to establish technology based mercury control limits.
- Reliant allows units that cannot install SCR/wet FGD under CAIR, to establish technology based mercury control limits.
  
- PaDEP meets the allowance/emission budget ("cap") targets of CAMR
- Reliant meets the allowance/emission budget ("cap") targets of CAMR