

Hughes, Marjorie

From: askicki@firstenergycorp.com
 Sent: Friday, August 25, 2006 3:57 PM
 To: RegComments@state.pa.us
 Subject: Comments and Summary Sheet - Proposed Mercury Rulemaking



Proposed Hg
Mercury Rule Writt..



Hg Summary
Sheet.pdf

Please find attached an electronic version of written comments that FirstEnergy Generation Corp. (FEGC) is submitting in response to the proposed Chapter 123 revisions relating to reducing mercury emissions from coal-fired power plants and a one-page Summary Sheet of these comments. A hard copy version of these written comments and the one-page Summary Sheet has also been transmitted via UPS. If you have any questions regarding these comments or the one-page Summary Sheet, please contact me at (610) 921-6908. Thank you.

Anthony M Skicki
 Staff Consultant
 Environmental Department
 FirstEnergy Corp.

(See attached file: Proposed Hg Mercury Rule Written Comments.pdf) (See attached file: Hg Summary Sheet.pdf)

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INDEPENDENT REGULATORY
 REVIEW COMMISSION

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ENV. PROTECTION
SECRETARY'S OFFICE

Kathleen A. McGinty
Chairperson
The Environmental Quality Board
P. O. Box 8477
Rachel Carson State Office Building – 15th Floor
400 Market Street
Harrisburg, PA 17101-2301
Via Email: RegComments@state.pa.us



**Re: Comments to Proposed Rulemaking on Standards for Contaminants;
Mercury
25 PA CODE Chapter 123**

Dear Secretary McGinty:

FirstEnergy Generation Corp. (FEGC) owns and operates over 13,000 MW of generation capacity in Michigan, Ohio, Pennsylvania and New Jersey. The Company's 2,400 MW Bruce Mansfield Plant, located in Beaver County, is the largest fossil-fuel fired generating facility in Pennsylvania and each of its three units have been, since 2003, equipped with wet flue gas desulfurization (Wet FGD) and selective catalytic reduction (SCR) technology.

FEGC welcomes the opportunity to provide written comment on the Department's proposed rulemaking for regulating mercury emissions (Pennsylvania Bulletin Volume 36, No. 25, June 24, 2006). We believe that the proposed regulation, if promulgated as published, will have a significant negative impact on our generation assets operated in Pennsylvania. FEGC is offering the following comments regarding the proposed rule:

Summary Comments

The 1990 Acid Rain Program has demonstrated that reduction of air emissions can be achieved most efficiently through nationwide cap-and-trade programs. FEGC firmly believes that reduction of mercury air emissions should similarly be achieved through a national cap-and-trade program given the long-range transport of mercury emissions from other states and foreign countries into Pennsylvania. In order to efficiently achieve mercury emission reduction goals at the lowest cost to citizens of the Commonwealth, we support the adoption and full implementation of the federal Clean Air Mercury Rule (CAMR) that was published by the U. S. Environmental Protection Agency on May 18, 2005. CAMR will serve to adequately protect human health and the environment in a cost effective and technologically feasible manner. CAMR takes full advantage of the co-benefits realized by treatment technology that is or will be installed to comply with the Clean Air Interstate Rule (CAIR) and will, on a realistic timetable,

reduce mercury emissions from power plants in Pennsylvania by 86%. Although achieving the emission reductions mandated by CAMR will be challenging, FEGC is committed to achieving the specified reduction levels because we believe that it will result in real and significant mercury reductions in Pennsylvania.

The key element of the federal CAMR program, a nationwide cap-and-trade system, provides many incentives to FEGC and other companies to operate control equipment in a manner that maximizes removal efficiencies and over-controls mercury emissions earlier than required. The federal rule provides the citizens of the Commonwealth with real reductions in mercury emissions, while allowing FEGC and other companies the ability to bank or trade any excess allowances generated. The availability of these allowances will be especially crucial in future years when it may be technologically or economically infeasible to fully achieve the more stringent mercury emission reductions without further substitution of alternative fuels containing lower mercury than in Pennsylvania coals. In the very competitive wholesale generation market, companies are forced to pursue least cost compliance strategies and will need to consider fuel switching as an alternative to investing hundreds of millions of dollars in capital.

The Department's proposal to disallow any purchase, trading or banking of excess mercury emission allowances does not provide any incentive for maximizing emission reductions, where feasible. This proposed approach not only denies the use of excess allowances by the facility in later years, when emission reductions are more difficult to achieve, but it essentially distributes the excess emission allowances that are generated using control equipment that is built, operated and maintained with funding from the Company's investors, to competing generators without compensation. FEGC and other owners have no opportunity to recover their investment in the installation and operation of control equipment because the Department will assign any extra allowances to other wholesale generators and in essence, will subsidize our competitors.

During the later phase of the proposed Pennsylvania Rule, facilities will be seeking alternatives to meet the more stringent standards. Given the probability that proven technologies may not be commercially able to achieve the required more stringent removal rates or annual caps, facilities like Bruce Mansfield will be forced to consider other options to avoid non-compliance, including the use of out-of-state coals that contain less mercury. Smaller plants that cannot afford the more expensive controls will be forced to shut down. "Non-tradable allowances" in the proposed "Supplemental Allowance Pool" will not be available to make up any shortfalls because the CAMR cap for Pennsylvania is the most stringent of all the affected states and because there will be no incentives for the larger plants to maximize emission reductions.

FEGC believes that fundamental revisions can and need to be made to the proposed regulations so that the maximum mercury emission reductions can be achieved without the technological and economic problems described above.

The Department needs to fully reconsider its decision to not implement the federal cap-and-trade approach set forth in the federal CAMR in light of the implications that the implementation of the proposed Rule will have on the Commonwealth.

Comments Specific to FEGC's Bruce Mansfield Plant

Definition of Presumptive Compliance Technologies (Section 123.202 and Section 123.206(b)(1) & (2))

FEGC agrees with the Department's decision to allow EGU's the opportunity to demonstrate compliance with the emission standard requirements through the installation of specific control technologies such as Wet Flue Gas Desulfurization Units (FGD), Selective Catalytic Reduction Units (SCR) and Cold-Side Electrostatic Precipitator Units (CS-ESP). However, FEGC requests that the Department modify both the Definitions (123.202) to include "Other particulate removal technologies" and the Compliance Requirements (123.206(b)(1) & (2)) to include "or other treatment systems designed to remove particulate material downstream of a boiler pre-heater" as an alternative to CS-ESP. Although FEGC's Bruce Mansfield Plant utilizes a CS-ESP on one of its three units, the other two units were designed to utilize unique Wet FGD systems to remove particulate material from the flue gas. These "scrubbers" are unique in that they treat all of the gas produced by the boiler utilizing a venturi design, consisting of six independent trains per generator. Each of the Wet FGD trains consists of a scrubber vessel and an induced draft fan. Fly ash removal is achieved in these scrubbers at a rate of 99.6%. FEGC believes that these two scrubbers achieve equivalent particulate removal capabilities of a CS-ESP and should be included in the "presumptive compliance" provisions.

Lack of Allowance Trading and Banking Provisions (Sections 123.207, 123.208, and 123.209)

The issue of greatest concern to FEGC in the proposed regulations is the lack of an unrestricted mercury allowance trading and banking program within the framework of the proposed regulations. As discussed above, FEGC's Bruce Mansfield Plant will control mercury emissions during Phase I of the Rule to levels that are below the required emission limitations and would generate excess emission allowances under the provisions of the CAMR. Pennsylvania's proposal to disallow the trading or banking of these excess emission allowances will have a significant operational and financial impact on FEGC. Without the ability to bank these excess allowances for use in future years, the facility will have no assurances that it can achieve the more stringent annual emission caps in Phase II. Recognizing the need to achieve the emission budgets specified by the CAMR, FEGC believes that it would be appropriate to adopt the CAMR cap-and-trade program to meet the CAMR budget requirements. This can be accomplished by separately adopting the CAMR trading program to meet the annual budget requirements.

FEGC is very concerned that the proposal would require the Department to essentially confiscate non-tradable allowances generated by facilities that incur significant costs to achieve greater emission reductions than those required under the proposed Rule and then subsequently distribute those allowances to competing facilities. FEGC believes that the proposal would virtually eliminate the economic incentive to optimize mercury emission reductions and actually would create a disincentive for early reductions or for maximizing emission reductions. With this disincentive, it is unlikely that adequate allowances will be available in the Department's "Supplemental Allowance Pool" and therefore the Department will not be able to assure compliance with the state mercury budget in the CAMR or that sources will be able to satisfy the state requirements particularly during Phase II of this proposal. Clearly, this type of program can be better managed and compliance can be better assured under the CAMR cap-and-trade program, rather than the proposed PADEP-managed closed allowance system.

There is no demonstrated technology currently available that will fully achieve the emission reduction rates and annual emission caps that are associated with Phase II of the proposal. With this uncertainty and no ability to retain excess allowances generated during Phase I of the proposed Rule or purchase allowances from other sources, facilities may be faced with the possibility of non-compliance with these standards and caps. To provide some assurances, even fully controlled facilities will be forced to consider switching to non-Pennsylvania coal that is typically lower in mercury content as an added safety margin to ensure compliance. Allowing owners of facilities to meet the annual emission budget through the CAMR cap-and-trade provisions provides the certainty necessary for the continued use of Pennsylvania coal and facility compliance.

FEGC believes that the proposed allowance petition process falls short of what is minimally required under the CAMR mercury budget. This process blindly assumes that there will be sufficient unused mercury allowances available to be distributed by the Department to meet the overall CAMR annual mercury budget. Most troublesome, however, is the potential that the petition process does not provide the certainty needed for companies to comply with the Sarbanes Oxley Act. This Act requires companies to disclose materially significant issues that present a liability of \$100,000 or greater. Since the proposed Rule creates significant unknowns and uncertainty regarding compliance and the serious implications of non-compliance, companies may be required to identify and report the potential compliance issues related to this proposed Rule. Such disclosures may have a negative effect on the investment community's view of the company and its stock. FEGC strongly believes that an allowance program similar to the CAMR cap and trade approach should be implemented to avoid these concerns.

Compliance Sampling and Monitoring Provisions (Section 123.210, 123.211, 123.212, 123.213, 123.214 and 123.215)

The proposal's compliance sampling provisions contained in the proposed regulation would be especially onerous and costly. Implementation of the proposed daily "as fired" sampling protocol, that requires the collection and analysis of a minimum of three samples over 365 days, would be very expensive and labor intensive and will not provide the information necessary for the success of the mercury emissions reduction program. As an alternative, generators should be allowed to use established coal sampling programs as a means of demonstrating mercury removal from the coal being burned. For instance, "as received" sampling practices, similar to what most companies use to certify the quality and characteristics of the coal that they purchase, should be allowed as an alternative method for demonstrating compliance

Finally, FEGC believes that the Department will need to commit significant resources (such as labor and IT infrastructure) to adequately support the monitoring, reporting and allowance management provisions of the proposed rulemaking. FEGC understands that the U. S. EPA will not support a state-only program in these areas and suggests that the Department adopt the monitoring and reporting requirements that are specified in 40 CFR 75, Subpart I, so that a unified, systematic approach is established between the Federal and Pennsylvania reporting requirements. The adoption of these provisions will result in significant cost savings to both the Department and the regulated community, by avoiding the need to develop and maintain multiple and possibly conflicting monitoring and reporting programs and by making the reporting tools that have been developed by USEPA (and their contractors) available for data reporting and analysis.

Comments in Response to the Preamble and to Issues Raised By the Air Quality Technical Advisory Board (AQTAC)

Validity and Relevance of Studies Cited in the Preamble

In the Benefits, Costs and Compliance Benefits section of the proposed regulations, the Department cites several studies and unpublished reports as the basis for regulating mercury emissions beyond the levels currently mandated by the CAMR and for disallowing the purchase, trading or banking of mercury allowances. FEGC questions both the validity and the relevance of these studies to the cost and benefits that the Department believes are associated with implementation of the proposed regulations.

The study conducted by T. M. Sullivan of Brookhaven National Laboratories in 2003-04 is cited in the Preamble as an example of the presence of "hot spots" around coal-fired power plants. The Department concludes from this study that if plant emissions of mercury are doubled, the concentration of mercury in fish would also double and identifies the area around the Bruce Mansfield Plant as a mercury "hot

spot". The Department frequently cites this study as proof of "hotspots" and as a reason not to adopt a mercury "cap-and-trade" program. To the contrary, this study actually found minimal amounts of deposition in the vicinity of EGU's and no evidence of "hot spots", despite its use of conservative assumptions regarding the availability of mercury, the amount of local fish consumption, and exposure risks. In fact, the study concludes that the implementation of a "cap-and-trade" program for mercury is 'acceptable from a risk standpoint.' Dr. Sullivan confirmed these conclusions in testimony that he presented to the Pennsylvania House Committee this summer.

The Department also continues to cite the April 2005 "Steubenville Study" as evidence that power plants cause "hot spots". This study has not been peer reviewed or published in any scientific literature, nor have any written reports been made available by the principle investigators regarding the data, methods, analysis or findings of the study. From what is known about the Study, its findings regarding the sources of wet deposition are essentially consistent with EPRI modeling results, illustrating that approximately 64% of the deposition in the vicinity of Steubenville is attributable from U. S. utility sources. The Study, however, uses both local and regional sources as contributors to the wet deposition estimates, defining "local" contributors to include sources that are located at least 150 miles away and up to 400 miles away. This distance is about five times the distance (or 25 times the coverage area) that is typically used in the definition of "local deposition". By using this "local/regional" inclusion of contributing sources, the Study is actually indicating that all U. S. utilities together appear to contribute 65% to 70% of the wet deposition of mercury in the Steubenville area. This finding does not support the concept of "hot spots" or the assertion that wet deposition is occurring immediately downwind of power plants. The study does appear to confirm that wet deposition in a region is closely related to precipitation and that a few large rainfall events appear to contribute significantly to wet deposition totals for the year. This observation has also been made in other U. S. regions that are subject to either frontal uplift storms or convective storms with intervening dry periods. Significant washout of divalent mercury can occur in the initial periods of a rain event or in the first series of closely spaced rain events, when reactive gaseous mercury is absorbed by the precipitation.

The Department cites a study by Dr. Leonardo Trasande, et al., regarding the economic impact of methylmercury toxicity, to illustrate the economic benefits of reducing mercury levels below those required by CAMR. According to the study, Dr. Trasande estimates that the resulting loss of intelligence and diminished economic activity amounted to \$8.7 billion annually, with \$1.3 billion each year being directly attributable to mercury emissions from power plants. The results of this study has been critically reviewed by the U. S. EPA and other scientists and has been called "flawed" and "not appropriate" as an input to policy decisions. According to the U. S. EPA, this study relied on a logarithmic model (that was developed based on data from a single study conducted in the Faroes Islands) to define the dose-response relationship and erroneously overstated some results by a factor of 10. The study also used consumption data based on fish caught (landings data) rather than on fish consumed and assumed a much higher rate of deposition from U. S. sources than the rate that

was modeled by the U. S. EPA (60% versus 16%). Finally, the study entirely disregards the impact that ecosystem response time has on the degree of methylation and the overall mercury loading to a water body. In response to the U. S. EPA review, Dr. Trasande corrected a few of his assumptions and revised the cost estimates slightly downwards to \$7 billion. Despite these revisions, the U. S. EPA believes that Dr. Trasande's study continues to rely on erroneous assumptions. With the use of more accurate assumptions, the U. S. EPA believes that the estimated monetized impact of anthropogenic emissions predicted by the Trasande model would decrease by 81% and the estimated impact of U. S. power plant emissions would decrease by 97%.

Finally, FEGC questions the relevance and accuracy of the Rae and Graham report entitled: "Benefits of Reducing Mercury in Saltwater Ecosystems" that is cited in the discussion on the cost and benefits of the proposed rulemaking. The unpublished, non-peer reviewed report addressed mercury in the coastal and marine environments of the Southeastern U. S. The physical and chemical attributes and aquatic species associated with these environments are very different from those found in Pennsylvania watersheds. The amount of methylation, bioaccumulation and biomagnification is also known to vary between water bodies and between freshwater and marine ecosystems because of the different physical, chemical and biotic conditions within the ecosystem. The report incorrectly assumes that a simple linear relationship exists between the decrease in deposition rate and a decrease in the concentration of mercury in fish tissue. Several recent studies have been conducted that define the complex relationship that exists between the rate and type of deposition, the rate of methylation and the level of bioaccumulation and biomagnification that occur in aquatic organisms and have shown that it is clearly non-linear. This report also assumes that beneficial changes will occur in a water body over a few years as a result of a reduction in the deposition rate. Again, studies have shown that the fate and transport of mercury within the aquatic environment involves the water and the sediment, as well as the plants and organisms present in those environments and that an ecosystem is typically slow to respond to changes in mercury loading rates, often taking decades to accomplish.

Response to Issues Raised by the AQTAC

The Air Quality Technical Advisory Board (AQTAC) requested that the public provide comments on a number of issues related to the implementation of the proposed rulemaking. FEGC offers the following comments in regards to these issues:

1) Advantages and Disadvantages of the Supplemental Allowance Pool

A robust and open mercury cap-and-trade program similar to that established under the CAMR is in the best interest of the Commonwealth. The advantages of the cap-and-trade approach are well known from the past decade of experience with the Acid Rain Program, the most successful air reduction program in U. S. history. FEGC can not identify any advantage to the proposed "Supplemental Allowance Pool" approach that is unproven and does not utilize market-driven incentives to maximize reductions at the lowest

cost. A significant disadvantage of the proposed approach is the lack of any incentive for sources to reduce mercury air emissions beyond the minimum requirements, since any excess allowances that would be generated would be confiscated and transferred to other sources owned by competitors. As a result, a company would, as a means of reducing operating costs, have no incentive to reduce its emissions to levels below what is required and would not contribute any excess allowances to the supplemental mercury pool.

2) Advantages and Disadvantages Related to the New Source Set Aside

FEGC believes that the proposed regulations should be modified to eliminate the 5% and subsequent 3% set aside of allowances and that "new sources" should obtain allowances on the "open market" at market prices. We also believe that the currently proposed set aside percentages are too large and will only serve to remove allowances (that will likely remain unused) from an inadequate supplemental pool. The proposed set aside reduction in Phase II will be especially problematic, given the need to meet the more stringent annual caps. If the Department decides, however, to retain the set aside provisions, we recommend that the set asides be reduced to more accurately reflect forecasted energy usage and planned construction rates of 1% to 2%.

3) Inclusion of Coal Preparation in the Determination of Reduction Percentages

FEGC believes that coal preparation and any other process that serves to remove mercury from the overall combustion process should be considered as part of the facilities control technology and any mercury reductions achieved should be credited towards the facility's reduction requirements. This additional credit would be especially helpful in meeting the stringent requirements of the Pennsylvania Rule. The 90% reduction requirements of Phase II are estimated to equate to a 94% reduction of the mercury present in the coal. These reduction levels are unattainable by technology that is currently available and consideration of mercury removed in the coal preparation process would serve to improve the overall removal percentages.

4) Compression of Phase 1 & Phase 2 Compliance Schedules

FEGC strongly objects to any attempt to further compress the implementation of the proposed rulemaking. The dates that have been established under CAMR reflect the U. S. EPA's realistic estimate of the available control technology necessary to meet the reduction requirements. The proposed implementation date (2015) of Phase II of the proposed rule is especially troublesome given the lack of any demonstrated or guaranteed technology necessary to achieve the required reduction levels. The Phase II implementation date should be revised to 2018, consistent with the U. S. EPA's timetable under CAMR.

5) Provisions to Encourage the Installation of More Reliable Technology

FEGC is uncertain how additional "start-up" and "break in" test periods provisions, cost sharing between vendors and sources or extended permits can be included within the current framework of proposed rule. Under the provisions of the proposed regulations, a facility will be required to achieve emission standards and an annual emission cap that will be based on a reduced version that EPA allocates to each state. Given these reduced annual emission caps and no ability to obtain, trade or bank additional allowances, the facility will have no opportunities to experiment with new or unproven technologies without potentially subjecting themselves to additional compliance risks.

6) Expansion of Daily Coal Sampling to "As-received" Coal

FEGC agrees that samples of "as received" coal should be included as a method to determine compliance with the Rule. In addition, "mined" coal samples should be used to demonstrate the benefits of coal preparation activities in the removal of mercury from coal. FEGC does question, however, the daily frequency specified in the proposed Rule. This requirement is onerous and costly and will not provide any additional information that will be required to demonstrate compliance.

7) How the Department Could Encourage Over Control and Cost Sharing

As discussed above, the "Supplemental Allowance Pool" provides no incentive for generators to over-control emissions. FEGC believes that the implementation of an unrestricted "cap-and-trade" program similar to CAMR will encourage facilities to over control emissions. At a minimum, owners should be allowed to bank excess allowances for future years or have the ability to transfer excess allowances to other company owned sources, regardless of their location.

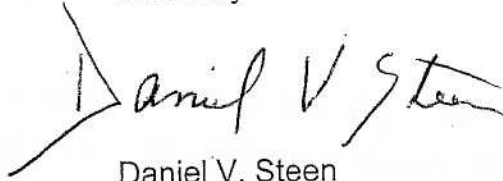
8) Consideration of the Steubenville Study on Regulatory Requirements

As discussed above, FEGC believes that the results of the Steubenville Study must be fully disclosed and reviewed before any observations or conclusions can be drawn regarding the relationship between local sources and the deposition of mercury.

FEGC also supports the written comments and testimony provided by the Electric Generation Association of Pennsylvania (EPGA) on behalf of electric generating companies operating in Pennsylvania. We encourage the Board to reconsider the approach that the Department has taken on these proposed regulations and work with EPGA member companies towards the development of a more workable alternative to the proposed rulemaking.

FEGC thanks you for the opportunity to comment on the proposed rulemaking. If you have any questions regarding these comments, please contact Mr. Anthony M. Skicki of my staff at (610) 921-6908.

Sincerely

A handwritten signature in black ink that reads "Daniel V. Steen". The signature is written in a cursive style with a large, stylized initial "D".

Daniel V. Steen
Vice-President, Environmental Department

**Comments Submitted by FirstEnergy Generation Corp. (FEGC)
On Proposed Changes to Chapter 123 – Mercury Emissions Control**

FEGC's Bruce Mansfield Plant, the largest coal-fired electric generating station in Pennsylvania, has historically reduced mercury emissions to a significant degree through its co-benefits technologies of wet flue gas desulfurization and selective catalytic reduction.

The proposed rule not only denies the use of excess mercury emission allowances by the generating facility in subsequent years, when emission reductions are more difficult to achieve, but it essentially distributes the excess allowances that are generated using control equipment that is built, operated and maintained with funding from company investors, to competing generators without compensation.

The proposed rule does not provide any incentive for early reduction of mercury or for over-controlling mercury emissions.

FEGC supports substantial mercury emission reductions in the Commonwealth and beyond through the adoption and full implementation of the federal Clean Air Mercury Rule (CAMR). CAMR's mercury cap and trade program will result in mercury emission reductions in a more cost-effective manner.

No evidence has been presented which demonstrates that the proposed rule will provide any additional environmental or health benefit beyond CAMR, certainly not commensurate with the proposed rule's higher incremental cost.