pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SECRETARY

August 4, 2011

U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code 2822T
Attention Docket ID No. EPA--HQ–OAR–2009–0234
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: National Emission Standards for Hazardous Air Pollutants from Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units (Docket ID No. EPA–HQ–OAR–2009–0234)

To Whom It May Concern:

The Department of Environmental Protection (Department or DEP) appreciates the opportunity to submit comments on the U. S. Environmental Protections Agency's (EPA) "National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units; Proposed Rule," published in the *Federal Register* on May 3, 2011 (76 *Fed. Reg.* 24976). The EPA is proposing national emission standards for hazardous air pollutants (NESHAP), including mercury, which are emitted from coal-and oil fired electric utility steam generating units (EGUs) under Section 112(d) of the Clean Air Act (CAA or the Act) (Utility MACT) and revised new source performance standards (NSPS) for fossil fuel-fired EGUs pursuant to Section 111(b) of the CAA. The Utility MACT Rule will apply to new and existing electric generating units (EGUs) including fossil fuel-fired combustion units of more than 25 megawatts that serves a generator that produces electricity for sale.

The Department understands the need to substantially reduce hazardous air pollutants (HAPs) including mercury from EGUs in accordance with Section 112 of the CAA. However, certain provisions in the proposed Utility MACT must be addressed prior to final rulemaking. Issues of particular concern including the overly stringent hydrogen chloride (HCl) limits which would adversely affect the operation of coal refuse plants in Pennsylvania and the burdensome performance testing and sampling frequencies are discussed herein.

I. Coal Refuse Definition for Waste Coal Burning EGUs

Pennsylvania has many abandoned coal mines and coal refuse piles that generate many adverse impacts upon surrounding land and water. For example, concentrated levels of acid mine

drainage is released into local waterways; unstable stockpiles may collapse and threaten the safety of nearby communities; and the scenic and recreational quality of the landscape is ruined. Circulating fluidized bed combustion technology has been utilized to remedy this legacy and to provide the nation with an alternative source of energy. Pennsylvania law recognizes and encourages the combustion of waste coal as an important form of energy production. Since 1987, coal refuse plants in Pennsylvania that use CFB technology have collectively removed and converted millions of tons of coal refuse in a highly regulated, managed manner to reclaim thousands of acres of damaged mine lands and streams. Moreover, these cogeneration plants have converted this coal refuse into electricity to meet the energy needs of hundreds of thousands of households and businesses. In addition to transforming waste coal piles into energy, coal refuse facilities produce a beneficially useful solid ash product which, with its alkaline quality and binding characteristics, is ideal for reclaiming abandoned mine lands because it binds with other reclamation materials and prevents migration of heavy metals and other pollutants that are the vestiges of historic mining activity. Therefore, EPA's final Utility MACT rule should not establish HCl limits that would adversely impact the environmental beneficial use of waste coal.

In the proposed Utility MACT Rule, EPA is proposing to subcategorize coal combustion based on the British thermal units (Btu) per pound of coal, on a moist, mineral matter-free basis. In the proposed rule, "coal refuse" is defined as "any by-product of coal mining, physical coal cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis." However, the DEP believes that the final Utility MACT Rule should adopt the NSPS "coal refuse" definition in 40 CFR 60.41Da (relating to definitions). As defined in section 60.41Da, the term "coal refuse" means "waste products of coal mining, physical coal cleaning, and coal preparation operations (*e.g.* culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material." The NSPS definition of coal refuse is recommended because waste coal has a high variability in chemical properties such as heat content, percent ash, sulfur, chlorine, and moisture. If EPA requires consideration of the ash, the waste coal will not consistently meet the proposed "coal refuse" definition.

The DEP is also concerned that the majority of the well-controlled circulating fluidized bed (CFB) combustion units in Pennsylvania cannot meet the stringent hydrogen chloride (HCl) limits, 0.002 lb. HCl/MMBtu, in the proposed Utility MACT Rule. Due to the uniqueness of the coal refuse, it is burned in CFB combustion units which do not employ the same type of control for acid gases that pulverized coal burning units employ (i.e., wet flue-gas desulfurization units). Typically, bituminous "gob" contains higher levels of sulfur than anthracite culms. The acid gases, in CFB units are controlled by *in situ* limestone injections. Most of the well-controlled CFB units burning coal refuse would not be able to comply with the proposed HCL emission limits. There are fourteen CFB facilities in Pennsylvania that burn waste coal (anthracite culm and bituminous "gob") in circulating fluidized combustion units which utilize combustion zone limestone injection for the control of acid gases. DEP has reviewed the continuous emissions monitoring data for these fourteen facilities and has found that the majority of these facilities will not meet EPA's proposed SO_2 surrogate emission limit of 0.20 lb/MMBtu. In addition, there is a

waste coal-burning facility in Pennsylvania that operates an additional polishing unit for acid gas control. However, even with the addition of this advanced polishing acid gas control system, this CFB unit cannot meet the proposed SO_2 limit of 0.20 lb/MMBtu. The Department urges EPA to reconsider the proposed HCL and surrogate SO_2 limits, which are not achievable for certain EGUs including units operating with acid gas controls.

II. Proposed Non-Hg HAP Metals

The Department believes that using total particulate matter (PM) as the surrogate for non-mercury metal HAP emissions is appropriate because most, if not all, non-mercury HAP metals are entrained in the flue gas fly-ash such that effective PM controls will also effectively capture the non-mercury metal HAP constituents within the total PM. The DEP recognizes, however, that smaller size particulate matter (e.g., $PM_{2.5}$) may be a better indicator due to preferential partitioning of non-mercury metal HAPs in the smaller size fractions of total PM. As EPA indicates, test methods for $PM_{2.5}$ in flue-gas are not applicable to all exhaust stack conditions. We also recognize that operating a PM CEMS to measure particulate matter as a surrogate for non-Hg metal HAPs does not account for condensable particulate matter collected during the initial testing for total particulate matter. Therefore, DEP recommends that EPA develop more broadly applicable $PM_{2.5}$ performance test methods that can replace total PM as the non-mercury metal HAP surrogate, to the extent feasible. DEP data collected during source testing of coal-fired EGUs in 2009 demonstrates that the condensable portion of the total particulate matter in coal-fired EGUs without wet scrubbers may account for approximately 70% of the total particulate emissions. This testing was conducted using the current version of EPA's Reference Method 202 – Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources.

III. Burdensome Requirements for Performance Tests

As proposed in section 63.10006 (relating to when must I conduct subsequent performance tests, fuel analyses, or tune-ups) of the Utility MACT Rule, the monthly and/or bimonthly performance test requirements for certain units operating without PM, HCl and Hydrogen Fluoride (HF) continuous emission monitoring systems (CEMS) are unduly burdensome for industry and regulatory agencies. In addition to reviewing and approving protocols for source testing, the number of source test observations increase significantly. The DEP currently perform approximately 595 source test reviews annually and manages over 1,000 Department-certified continuous emission monitoring systems. The initial performance test for facilities affected by the proposed Utility MACT Rule would add approximately 400 performance tests in order to comply with initial and bimonthly performance test requirements. In addition, the Department would also be required to review protocols and test results for Low Emitting EGU (LEE) testing. These burdensome requirements will increase by 70% the total number of test review s conducted by the Department. The proposed Utility MACT Rule would also add 144 new CEMS that must be certified and managed by the Department. In addition, DEP is obligated by the EPA Air Facility System (AFS) Information Collection Request (ICR) of 2005 to report results of testing within a 60 day period. Source operators however are allowed to send the

results to the DEP within 60 days following the completion of the source test. The increase in testing activity as well as frequency would create a difficult to manage backlog of test reports, which must be reviewed for compliance purposes. DEP recommends that the monthly and bimonthly testing requirements for coal and solid oil derived fuel units in Section 63.10006 be revised to allow quarterly or biannual testing requirements in order to provide a reasonable timeframes for the owners and operators of affected units and state and local agencies to maintain robust testing and review procedures. The frequency of testing could be established based on the levels of emissions determined by initial test results. DEP also suggests that once the initial performance test is conducted for PM (filterable and condensable) and non-Hg HAP metals, and fuel sampling and/or operating parameters are established, fuel sampling would be a simpler approach instead of requiring excessive performance testing. A third consideration would be to offer source operators the ability to submit a Compliance Assurance Monitoring (CAM) Plan that would provide correlation based limits to assure continuous compliance with established emission limits.

IV. Particulate-bound Mercury; Appendix A to Subpart UUUUU

EPA's proposed Utility MACT Rule allows facility owners and operators to ignore particulate-bound mercury emissions when using a CEMS to quantify emissions, as indicated in the proposed Appendix A to Subpart UUUUU – Hg Monitoring Provisions (which only accounts for vapor phase mercury emissions). Demonstrating compliance without accounting for particulate bound mercury is not appropriate because particulate-bound mercury can constitute a substantial fraction of total mercury emissions. The DEP has determined that the filterable portion of total particulate emissions for coal-fired EGUs without wet scrubber controls can produce an average of 30% filterable particulate matter. The EPA should require total mercury emissions to be the basis of compliance demonstrations by taking into account the average particulate bound mercury measured during the most recent stack test on that unit in combination with the total vapor-phase mercury measured by the CEMS until such time as mercury CEMS to measure particulate-bound mercury are installed at a unit. To ensure the full extent of achievable mercury reductions, EPA should require a methodology that quantifies total mercury in all forms.

V. Low Emitting EGUs

EPA's proposed Utility MACT Rule allows for existing facilities to qualify for LEE status for mercury emissions based on testing using Method 30B, a vapor phase only test method, which does not account for any particle bound mercury emissions. DEP recommends that an initial performance test for mercury emissions include an accounting of any particle bound mercury. An option would be to demonstrate that total mercury emissions is less than 10% of the mercury emission limit or less than 22 pounds per year using a test method that measures total mercury. If the particulate bound mercury is 5% or less than the total, subsequent testing could measure only the vapor phase mercury emissions. If EPA Reference Method 29 or ASTM Method D6784-02 (2008) is used to determine total mercury emissions, only three one-hour test runs would be required.

VI. Grid System Security and the Need for Flexibility

It is our understanding that Regional Transmission Organizations (PJM for example) have submitted comments relating to ensuring electric grid reliability. Also, the Pennsylvania Public Utility Commission has filed comments raising concerns regarding electric grid reliability as well. We urge EPA to give those comments and concerns serious consideration. The Preamble to this proposed rule states that EPA believes and predicts, as of the time that the proposed rule was published on May 3, 2011, that the requirements of the proposed rule can be met without adversely impacting electric grid system reliability. As PJM and others have pointed out, there is reason to question this sanguine outlook especially with respect to potential adverse impacts on grid system security, *i.e.*, delivery of power to consumers, and EPA's actually now-demonstrated understated level of expected generation retirements. Indeed, EPA's proposed rule recognizes that its analysis did not address what it calls "localized transmission constraints." Also, we now have actual empirical data that post-dates the publication of the proposed rule which shows that considerably more megawatts of generation are expected to be retiring than EPA projected.

Also, EPA's prediction in the Preamble to this rule seems to be limited to this proposed rule, and we will not know the synergistic impact on reliability of the entire suite of rules that are coming down from EPA either right now or in the very near future which will have an impact on electric generating units. The only thing we can be sure of now is that we cannot be sure what impact this rule, along with the other rules in the pipeline, will have on the reliability of the electric grid delivery system until later when we see the actual impact of the proposed rule and the other rules as they are implemented. Thus, we urge EPA to build in some real time flexibility to state environmental permitting authorities in the final rule (and the other rules as well) with respect to timing of the requirements imposed by the rule should reliability impacts be more adverse than EPA currently seems to anticipate.

Thank you for the opportunity to comment on the proposed rule. Should you have questions or need additional information, please contact Kenneth R. Reisinger, Acting Deputy Secretary for Waste, Air and Radiation Management, by email at kereisinge@pa.gov or by telephone at 717 772.2724. You may also contact Joyce E. Epps, Director of the Bureau of Air Quality, by email at jeepps@pa.gov or by telephone at 717.787-9702.

Sincerely,

Michael L. Krancer
Secretary