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June 27, 2014

Environmental Quality Board
Rachel Carson State Office Building, 16th Floor
400 Market Street,
Harrisburg, PA 17101-2301

Re: Exelon Power Comments on CHAPTER 129 STANDARDS FOR SOURCES
"Additional RACT Requirements for Major Sources
of NOx and VOCs"

About Exelon Power

Exelon Power is the business unit of Exelon Generation that manages the company's fossil, renewable and hydroelectric assets in 16 states including Pennsylvania. In Pennsylvania, the company owns a diverse portfolio of assets that includes a pumped storage hydroelectric project, two landfill gas facilities, and nine peaking power plants in the Philadelphia region that generate electricity during periods of high demand.

In the United States, Exelon Generation is one of the largest competitive generators with approximately 35,000 megawatts of owned capacity, comprising one of the nation's cleanest and lowest-cost power generation fleets. Our utilities deliver electricity to more than 6.7 million customers in northern Illinois (ComEd), southeastern Pennsylvania (PECO) and central Maryland (BGE), with PECO and BGE also serving 1.2 million natural gas customers. The company's retail business unit, Constellation, provides energy products and services to 100,000 business, public sector and government customers and more than 1 million residential customers. Of the \$24.9 billion in revenues in 2013, approximately 60 percent was from Generation, 36 percent from regulated electric and 5 percent from regulated gas.

Exelon Power Comments

Exelon Power appreciates the opportunity to review and comment on the Pennsylvania Department of Environmental Protection (DEP) Additional RACT Requirements for Major Sources of NOx and VOCs.

I. Support for DEP's Approach

DEP noted in the Pennsylvania Bulletin the federal requirement to propose RACT following adoption of the 2008 National Ambient Air Quality Standards (NAAQS) for ozone. DEP's rigorous evaluation of the applicable technologies and associated compliance options benefits sources in the Commonwealth and will generate significant reductions in NOx emissions. The presumptive RACT options, based on factors such as emission rates for source categories, provide simplified compliance options for a large number of affected facilities. The averaging options provide sources and fleets with the operational and compliance flexibility needed during current market and fuel pricing conditions as well as the during ongoing fuel transition in the electric generation industry toward increased natural gas utilization. Lastly, the case-by-case compliance option provides sources with the ability to comply with RACT when individual circumstances do not fit the other categories.

DEP predicts substantial reductions in NOx emissions resulting from the regulation and this, along with the ongoing transition to natural gas, will further improve Pennsylvania's air quality and reduce both the number, and significance, of ozone exceedences.

II. Compliance Flexibility Protects the Environment and Grid Reliability

Exelon Power supports DEP's decision in the proposal to provide compliance flexibility to the regulated sources. As noted above, implementation flexibility is critical in this transitional market and recognizes the widely varying circumstances that apply to individual companies and units while not compromising the NOx reductions available to the Commonwealth. Providing compliance flexibility will also help ensure that individual controlled sources are not replaced by less regulated, and generally uncontrolled, higher emitting sources that in some cases are participating in Demand Response programs. These sources are often operating on exactly the days when ozone formation may be of greatest concern.

In addition to increasing the number of NAAQS exceedences as noted above, the absence of compliance flexibility impacts grid reliability. The sources participating in Demand Response programs do not have the same reliability standards and requirements that major sources fulfill to participate in PJM, resulting in a larger number of higher emitting less reliable sources.

III. Alternative Case-by-Case RACT Proposals

Exelon Power supports EPA's case-by-case alternative RACT proposal and petition process. Due to the wide variety of uses and types of equipment proposed for regulation under the NOx RACT proposed rule, there will be instances where certain types of equipment, or equipment uses in certain applications, will warrant consideration of alternative NOx RACT emission limits. In its final rule, Exelon Power strongly suggests that PA DEP strengthen the

case-by-case alternative and ensure that the option is available to sources even if the sources could participate in an averaging option. DEP should further outline the case-by-case process, as well as update and define dollar-per-ton cost thresholds against which case-by-case RACT petitions will be required to rank technology options. DEP provided similar detail in the first RACT implementation program in 1994 and for example could include implementation guidance and a reference to the updated EPA cost manual.

IV. Coal-Fired Combustion Units can achieve significant decreases with low NOx burners

With regard to coal-fired combustion units with a rated heat input equal to or greater than 250 mmBtu/hour heat input, we believe that the Department should consider what can be achieved by the latest generation of low NOx burner technologies, based on various boiler configurations, as one basis for updated NOx RACT standards, with current and future transport rules identifying additional NOx emission reduction needs across the eastern states in the form of lowered regional and state emission budgets. Such an approach would allow for the most cost effective application of any additional needed post-combustion controls (e.g., NOx SNCR or SCR) by incentivizing the operators with the lowest cost incremental control options to deploy additional NOx controls beyond those already in existence or those that might be required by this updated NOx RACT regulation. The latest generation low NOx burner technologies are likely to greatly reduce the NOx emission rate compared to the early versions installed in the 1990's.

V. Significant NOx Reductions due to Upcoming Regulations

RACT is one of several upcoming regulatory requirements that will reduce NOx emissions in the Commonwealth. Some of these requirements are overlapping or will achieve reductions via different methods. Achieving NOx reductions in an overly prescriptive manner in RACT can counter efforts to achieve cost effective compliance with the other regulations. For example, the recent Cross State Air Pollution (CSAPR) Supreme Court ruling followed by EPA's recent petition to lift the stay on CSAPR sets the stage for additional NOx reductions at the federal level. Though unrelated to RACT, if CSAPR is implemented as finalized, the rule provides substantial reductions. The Agency is also likely to soon propose updates to its transport regulations to address the 2008 ozone NAAQS since the current CSAPR was designed to address the 1997 ozone NAAQS. Further, the controls required by both the ICI MACT and MATS rules result in some NOx and VOC reductions as a co-benefit. This is not to state that the other regulatory programs are RACT, only to point out that the Commonwealth benefits from the baseline NOx reductions both within the Commonwealth and from upwind states due to the additional regulatory programs. The reductions that occur based on the technology choices and emission limits achieved by this rule are specific to RACT.



VI. Maintenance of the Proposed Averaging Periods

Some testimony provided during the recent hearings focused on the effectiveness of the 30-day rolling average in maintaining emission rates consistent with RACT. DEP implemented RACT in 1994 using 30-day rolling averages, including emissions during startups, shutdowns and malfunctions. This methodology acknowledges that a unit's average emissions profile will trend near the unit's controlled emissions rate and that startup and shutdown emissions are inevitable and of short duration. Since RACT is technology dependent, implementing shorter averaging periods would require DEP to establish alternative emission standards applicable to, or exempt during, periods such as startup, shutdown and malfunction when the specific controls are not functional for each source category. For continuously monitored systems, shorter averaging periods would require DEP to establish the monitoring framework, emissions requirements and report structure for the additional averaging periods for each of the affected sources. Likewise, the affected units would undertake a substantial effort to determine the appropriate averages to implement and the methodology to report the averages.

Ultimately, since a unit's operations are primarily in the controlled state, average emissions will still trend around the controlled emission rate regardless of shorter term average limits. A 30-day rolling average achieves the same result and remains protective of human health and the environment.

Lastly, it is the mass emissions rate that drives NAAQS impact and not the NO_x lb/mmbtu rate. A unit's production rate (mmbtu heat input), followed by its mass emission rate, is greatly reduced during startup and shutdown. Elevated emission rates during the limited startup and shutdown periods result in substantially lower mass emission rates than during normal operations when the heat input is many times higher. A 30-day rolling average does not "weight" the daily averages based on heat input so that long periods of startup or shutdown actually increase the average and require the unit to operate at lower rates during normal operation. Should a unit extend startup or shutdown it would actually lower the overall mass emission rate during normal operation, further supporting the use of a 30-day rolling average as a protective measure.

VII. Localized Areas with Elevated NO_x

Testimony was provided at the RACT hearings that local areas could experience elevated NO_x due to short term "spikes" in emissions. Those testimonies provided a somewhat simplified view that increases in ambient ozone could be attributed to emissions from controlled major sources operating during the time periods associated with increased ozone. Short term increases in ambient ozone concentrations are complex in nature and are significantly affected by meteorological conditions such as temperature and wind speed, sunlight and the receptors proximity to emissions sources such as motor vehicles and high emitting uncontrolled sources that operate predominantly on those days. The

largest RACT affected sources are also the best controlled sources and their impact during these time periods may not be the primary factors in elevated ozone when compared to the other factors.

VIII. RACT is not BACT or LAER

As stated in the preamble in the PA Bulletin, "RACT is defined as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."

The term "reasonably available" is intended to indicate greater flexibility for states to take into account the remaining economic life of a unit as well as factors that could increase the cost of installing a technology on an existing unit. As a result, it is accompanied by a cost-to-achieve determination in addition to technological feasibility.

RACT is not "Best available technology" ("BAT"), "Best available control technology" ("BACT") or "Lowest Achievable Emissions Rate" ("LAER"), and the EQB should be aware that RACT is usually less demanding than BAT, BACT or LAER. In fact, specific emission reductions are not required when a RACT re-evaluation is done – however under the proposed rule, actual emission reductions will occur. The Department stated in 44 Pa Bulletin 2393 that "...the Board anticipates that that the total NOx reductions will be approximately 158,421 tons per year."

IX. Proposed Averaging Benefits Overall NOx Reductions

DEP has proposed permitting rolling facility-wide and fleet-wide-averaging. This option provides greater flexibility for the regulated companies yet an even greater reduction in emissions. For example, consider three sources with allowable emission rates that could provide up to 100 tons of NOx annually, 300 tons combined. If one of the source's current emissions, based on its higher emission rate, would equal 110 tons the resulting combined total is not 310 tons or even 300 tons. Due to the requirement that averaged sources are permitted 90% of the allowable emissions based on the rate limit, the combined total is a maximum of 270 tons of NOx annually. Based on this calculation, the higher the high rate source emissions are, the lower the other sources in the average need to be to maintain the rolling emission limit.

Exelon notes that the formula and the text in the proposed rule appear to describe different calculation methods and this apparent inconsistency should be resolved in the final version. With respect to multiple unit compliance options, Exelon supports DEP's proposed method to calculate rolling 30-day mass totals for multiple units and compare the combined actual emission totals to the allowable totals.



Alternately, within a single source category, calculating a combined emission rate from the total NOx emissions for the combined sources divided by the total heat input for those sources and comparing this to the source type emission rate limit may be feasible but, as noted above, only if all the sources are in the same source category. There may be other options but the added complexity would not likely benefit compliance.

X. Support for Finalizing the Regulation Quickly

Finalizing this regulation as proposed quickly benefits the Commonwealth and the regulated community. The Commonwealth benefits by implementing a new structure that fulfills EPA's SIP requirements and maintains the Commonwealth's compliance with regulatory requirements. Emission reductions would begin to occur as soon as mid-2015. The regulated community benefits from certainty in the ability to plan and implement these requirements in a similar timeframe as additional regulations are implemented such as ICI MACT, MATS and potentially CSAPR, as well as changes in the market structure due to the current fuels transition. Exelon proposes that the Department proceed quickly and without significant structural or emissions changes.

Thank you for considering these comments. Please contact John Tissue at 610-765-5495 if you have any questions regarding these comments and requested data corrections.

Sincerely,

John Tissue
Sr. Program Manager, Air Quality
Environmental Services