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June 30, 2014

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

Re: Comments on Proposed Rulemaking:
Additional RACT Requirements for Major Sources
of NOx and VOCs

Dear Environmental Quality Board:

Please accept these comments on behalf of PPL Generation LLC ("PPL") concerning the Board's proposed rulemaking governing "Additional RACT Requirements for Major Sources of NOx and VOCs," published in the *Pennsylvania Bulletin* on April 19, 2014 (the "Proposed Rule").

The Proposed Rule would amend Chapters 121 and 129 of Pennsylvania's air quality regulations to add or amend regulatory standards governing reasonably available control technology ("RACT") requirements for certain major stationary sources of oxides of nitrogen ("NOx") and volatile organic compound ("VOC") emissions. PPL owns and operates certain air emission sources in the Commonwealth that would be subject to the Proposed Rule if finalized as a regulation of the Board. Specifically, PPL owns or controls significant electric generating capacity in Pennsylvania. PPL's operations include multiple fossil fuel-fired electric generating units ("EGUs") that would be specifically subject to any final rulemaking promulgated by the Board in response to the Proposed Rule. Therefore, PPL has a significant interest in the Board's rulemaking efforts. In addition, PPL's longstanding history regarding the construction and operation of fossil fuel-fired EGUs affords the Company significant knowledge and experience regarding opportunities for the control of NOx emissions from these sources.

The control of air emissions from energy generating facilities poses complex considerations balancing environmental protection and the need for affordable and reliable energy obtained through a diverse energy supply system. The balancing of these considerations is particularly relevant in the context of RACT standards under the federal Clean Air Act. In particular, in mandating consideration of both technical and economic factors in the establishment of RACT-based standards, Congress expressly recognized the propriety of this balanced analysis. This principal is further reflected in federal regulations promulgated by the United States Environmental Protection Agency ("EPA") to implement RACT. Indeed, EPA has directed that development of RACT limitations must reflect the application of control technology "that is reasonably available in consideration of technological and economic feasibility (*See, e.g.*,

44 Federal Register 53762 (September 17, 1979))." The Board likewise identifies the significance of technological and economic feasibility considerations in its discussion of the regulatory approach pursued through the Proposed Rule. PPL's comments concerning the Proposed Rule are similarly grounded in these core principals of RACT standards.

Initially, PPL generally endorses the framework of the Proposed Rule with respect to alternative compliance demonstration methodologies. In particular, we agree that the Proposed Rule should incorporate "presumptive" RACT standards for certain source categories, and especially support as critical the preservation of the opportunity for regulated entities to pursue alternative compliance measures. Because the fundamental consideration in establishing RACT-based control standards is the application of technologically and economically feasible control options, it is essential that any regulated entity be afforded the opportunity to perform a source-specific evaluation of such control options for regulated emission units. Any comprehensive assessment of categorical RACT limitations cannot, by definition, appropriately address atypical considerations that impose technological or economic obstacles to compliance in individual settings. Therefore, PPL strongly endorses the provisions of the Proposed Rule preserving to regulated entities the opportunity to conduct a case-by-case analysis of appropriate RACT-based standards for regulated sources. As more fully discussed below, however, the Proposed Rule should be revised to clarify the availability in all cases (without inappropriate precondition) of the case-by-case RACT analysis alternative.

Presumptive RACT Standards

Consistent with this approach, PPL also acknowledges the benefits both to the Department of Environmental Protection ("DEP") and interested stakeholders in establishing through this regulation *presumptive* RACT-level standards. Such presumptive standards provide significant administrative efficiency to DEP, preserving important resources and simplifying federal approval of this current RACT rulemaking effort. Regulated entities may similarly benefit by "certainty" with respect to presumptive RACT standards, where appropriate for application to specific sources.

Of course, in evaluating the propriety of any presumptive approach toward RACT level standards, it is critical to consider the basis for such standards. In this context, DEP has evaluated available information to propose presumptive RACT requirements or emission limitations for relevant regulated sources based on both technological feasibility and economic factors. The DEP analysis reflects an estimated cost of control for presumptive RACT of less than $2,500 per ton of NOx emission reduction. DEP identifies this cost threshold as consistent with the benchmark utilized in the promulgation of the original RACT regulatory standards in Pennsylvania, adjusted by the consumer price index differential. The Board also notes that such benchmark is consistent with or comparable to cost efficiency levels adopted by other states, including Wisconsin. While EPA has not endorsed any specific cost threshold for RACT

standards, EPA has approved a number of state implementation plans which relied upon comparable values, including the Wisconsin program.

Based on information available to PPL, when viewed against this standard for economic feasibility, the presumptive NOx RACT emission limitations for fossil fuel-fired EGUs identified in the Proposed Rule appear to fall within defensible bounds of technological and economic feasibility in many circumstances, but with little margin. For many fossil fuel-fired EGUs, the calculated annualized cost effectiveness values would exceed the benchmark utilized by DEP, when proper consideration is given to the many factors relevant to the actual costs of operation of different emissions control measures under different operating scenarios. For example, in a number of applications of deep-staging low-NOx burners, control costs must reflect metal spray to reduce tube wastage and the cost of more frequent tube replacements, as well as increased Loss Of Ignition with reduced thermal efficiency. Control costs for units with SCRs must include the more frequent replacement of the catalyst and the cost of the additional ammonia.

Based on these considerations, PPL believes that the proposed RACT emission limitations reflected in the Proposed Rule remain marginally within the upper bound of appropriate cost effectiveness when properly evaluated in the context of the circumstances confronted by relevant existing EGUs in the Commonwealth. In this regard, consideration of technological and economic feasibility issues applicable to sources outside the Commonwealth (especially those not operating in the PJM market) cannot govern the determination of appropriate RACT standards for Pennsylvania sources, since the circumstances relevant to such sources in other states are not necessarily representative of source- and equipment-specific considerations in Pennsylvania, nor of the market forces that can cause relatively small increases in cost to threaten the viability of a unit.

Facility or System Averaging

PPL also endorses the Board's intention through the Proposed Rule to allow affected sources to establish a facility-wide or system-wide emission average as a compliance alternative under RACT. There can be no question that the Clean Air Act allows states to incorporate an emission averaging compliance option into their RACT programs, and several states have already taken advantage of such an approach (see for example RACT II regulations for Wisconsin, New Jersey and New Hampshire). RACT constitutes a specific "tool" under the Clean Air Act to promote the attainment and maintenance of the national ambient air quality standards ("NAAQS") for specific air quality regions. Relative to the ozone NAAQS, the RACT analysis is predicated upon implementation of overall NOx or VOC emission reductions within the relevant region, rather than upon any modeled, source-specific localized impacts. Pennsylvania's inclusion within the Ozone Transport Region establishes the basis for imposition of this additional RACT initiative, and similarly supports alternative compliance methodologies that can be achieved on a state-wide basis.

Indeed, support for such an approach is clear in EPA's CSAPR which seeks to preserve to affected sources maximum flexibility in achieving compliance with the applicable emission restrictions, while simultaneously providing for statewide NOx emission reductions consistent with the overall attainment objectives of Title I of the Clean Air Act. Therefore, inclusion within Pennsylvania's final RACT regulation of the option to comply with an average emission rate for multiple sources across a facility or system is necessarily consistent with both the structure of, and legal requirements for, RACT-based emission standards.

Moreover, the option of averaging of emission levels from multiple sources across a facility or system affords consideration of countervailing economic and technological limitations; as specifically acknowledged by the Board and referenced above, RACT-based standards necessarily reflect consideration of both technological and economic feasibility. Therefore, the inclusion of emission averaging as a compliance alternative within any RACT-based regulatory framework is entirely consistent with the underlying principals defining RACT.

Consistent with this legal justification under the Clean Air Act, several states have promulgated EPA-approved RACT-based programs which incorporate facility and/or system-wide emission averaging compliance options. Among these state programs are those promulgated by New York, New Jersey, Wisconsin, Massachusetts and New Hampshire.

For these reasons, PPL endorses the Board's proposal to provide for facility and system averaging as a RACT compliance alternative. However, as currently constituted, the specific provisions of the Proposed Rule applicable to emission averaging would be unworkable and therefore fail to achieve the primary objective of providing a reasonable and available alternative method of compliance that ensures equivalent environmental protection. More particularly, the proposed emission averaging standards severely and unnecessarily restrict the availability and use of the compliance option.

Under the Proposed Rule, the allowable total mass NOx emissions from the averaging group would change as the actual heat input experienced by the sources change. Thus, allowable emissions from the group decrease as the total heat input decreases; if the units included within the group run less during any compliance period, the RACT limit becomes tighter. This is illogical and puts EGU owners in an untenable position, since they cannot know the applicable compliance limit in advance of the compliance period. Indeed, two very common operating scenarios relevant to EGUs clearly emphasize the problems with the proposed version of the emission averaging provisions in the Proposed Rule.

First, at the most basic level, an operator of an EGU simply does not retain the ability to dictate the operating rates, conditions or duration of individual generating units under all circumstances. Instead, regional energy markets dictate the circumstances under which different generating units are engaged, and even to a significant extent, at what level. Coal-fired EGUs which were base loaded (availability factors approaching 80+%) just 5 years ago, are now

reduced to less than half load for significant portions of a day and even for months at a time during the Spring and fall. Coal and oil-fired EGUs that have been converted to fire natural gas, in part to achieve compliance with even more stringent air pollution requirements, are being called upon by the electric grid to run as peaking units. These peaking units rarely run for 30 consecutive days, and instead are often limited to a few days or less of operation per run. NO_X emission rates that may have been achievable at sustained, full-load operation and when the units did not have significant low-load operation, can no longer be achieved.

Second, coal-fired EGUs with existing SCR controls cannot continue to inject ammonia into the catalyst bed at operating rates below 60-65% load, due to inadequate catalyst bed temperatures needed to sustain the catalytic reaction for NO_X control. By way of specific example, a coal-fired EGU equipped with SCR may be able to achieve NO_X emission rates approaching 0.1 lb/MMBtu at full load conditions; however, the same unit operating at a load below 65% will emit NOx at a rate closer to 0.3-0.35 lb/MMBtu. It would severely disadvantage these units in the PJM market to be required to operate these units at higher loads simply to maintain operation of the SCR emission control system for achieving the calculated system average. The relative operating cost to run such units at a higher level than required, and to pay a penalty to PJM for not backing the unit down as required, would be so high under certain operating conditions that the operator would almost certainly elect instead to shut down the unit for economic considerations.

Not only would the approach toward facility or system averaging in the Proposed Rule lead to variability and uncertainty regarding future compliance standards, the proposed standard creates a severe risk of punitive treatment even in a circumstance when the overall mass emission of the facility or system decrease. Specifically, under the terms of the Proposed Rule, compliance with a calculated emissions average becomes highly dependent upon the ability of the operator to maintain within a narrow range the relative operating load for the lower NOx emitting sources included with the facility or system average. In other words, at any time, these lower NOx emitting sources *must operate* a sufficient period of time at a sufficient load to "balance" the NOx emissions from the higher emitting sources included in the average. Therefore, if the lower NOx emitting sources experience an unexpected outage or reduced load due to market conditions, the operator faces noncompliance, even if the operator does not increase operation or emissions of the higher-emitting sources within the system or facility average.

In other words, even though the total mass emissions from the system or facility *decreased*, and therefore the ambient air quality impacts improved, the facility or system operator would face noncompliance with its averaging obligations. For this reason, under the averaging scheme reflected in the Proposed Rule, in the event of an unplanned outage or reduced operation of a lower emitting source included within the average, the system operator likely could comply with its NOx emission averaging limits only by shutting down most or all other NOx emitting sources included within the system average. Such action would be in direct

violation of the contractual commitments undertaken by the EGU operator to provide electricity to the grid in accordance with specific demand and terms, and severely threatens the reliability of electric generation in the Commonwealth.

PPL strongly opposes these provisions of the Proposed Rule as severely undermining the intentions of the averaging provisions, and potentially preventing PPL and other regulated sources from utilizing this important compliance option. As the Board observes in the preamble to the Proposed Rule, RACT-based standards are intended to reflect a degree of control that is *reasonably available*, considering both technological and economic feasibility. The foregoing discussion reflects only certain of the technological and economic feasibility challenges confronted by EGUs under distinct operating scenarios *over which the source operators exercise little or no control.* It is therefore critical in order to achieve consistency with the objectives of RACT under the Clean Air Act that the Board's final RACT regulation provide sufficient flexibility to EGU operators to limit NOx emissions in a manner that is both economically and technically feasible. By contrast, insisting upon translating RACT standards, especially in the context of deriving a facility or system average that is intended to provide flexibility, to an emission rate basis -- tied specifically to energy input or output -- severely undermines the technological and economic feasibility of such emission limits for EGUs, and achieve no corresponding benefits in the protection of ambient air quality when compared to a RACT-level mass-based emission rate.

Rather than using the system averaging provision in the Proposed Rule, one available and appropriate alternative would be primary reliance on implementation of the federal Cross State Air Pollution Rule ("CSAPR") as an RACT equivalent standard for affected sources. The United States Supreme Court recently determined that the CSAPR regulation could properly be implemented under the federal Clean Air Act, and therefore we anticipate the application of CSAPR within Pennsylvania during the timeframes addressed by the Proposed Rule. The CSAPR regulatory scheme (as currently crafted) will establish a two phased NOx emission reduction obligation to ensure that total NOx emissions from affected sources within Pennsylvania remain within defined limits. The Board should conclude that compliance with this regulatory scheme by affected EGUs satisfies any appropriate RACT standard for these sources.

It is important to note in this context that EPA's recently published proposed rule does not undermine this proposal. Specifically, on June 9, 2014, EPA published a proposal to withdraw its prior determination that a state's compliance with the Clean Air Interstate Rule ("CAIR") or the predecessor NOx SIP Call constitutes compliance with RACT (*79 Federal Register 32892 (June 9, 2014)* (the "Proposed EPA Action")). First, on its face, the Proposed EPA Action in no way addresses the relevance of a state's compliance with the CSAPR regulatory scheme. Second and more importantly, a review of the Proposed EPA Action reveals that EPA has determined that a state's compliance with an interstate trading-based regulatory scheme – pursuant to which emission reductions are not assured within the individual state –

should not presumptively be deemed to constitute compliance with RACT-level controls in such state. Importantly, under the CSAPR regulatory scheme (in contrast to the CAIR program), authorized trading as a compliance measure is virtually constrained within state boundaries. Therefore, implementation of CSAPR will ensure that the requisite NOx emission reductions are achieved within Pennsylvania, consistent with the objectives of RACT implementation. Third, on a related point, the Proposed EPA Action in any event merely reflects EPA's proposal that compliance with CAIR or the NOx SIP Call rule should not *presumptively* be deemed to constitute RACT equivalence. Even with respect to these regulatory schemes directly addressed by the Proposed EPA Action, EPA reserves to each state the opportunity to demonstrate that compliance with such regulatory scheme can satisfy RACT equivalence. Certainly, such demonstration is available to Pennsylvania with respect to the equivalence of CSAPR compliance with RACT standards.

Another approach would be to derive a fixed mass limit per hour based on the presumptive RACT. Ambient air quality impacts are governed by the mass of emissions rate over a period of time, and not by the mass emission rate per unit of heat input or energy output. Therefore, the allowable facility or system average should be established at an aggregate hourly mass emission rate that ensures that the maximum emissions from the sources included within the average do not exceed a specified maximum level. Under such an approach, the final RACT regulation would simultaneously limit mass emissions that impact air quality, preserve the compliance flexibility intended through this averaging scheme and allow the system operator to have some measure of certainty in implementing its compliance plan.

Therefore, PPL specifically proposes that the NOx facility and system emission averaging provisions of the Proposed Rule be revised to establish a standard equal to a maximum aggregate hourly mass emission rate for the sources included within the average derived by multiplying the presumptive RACT for each EGU in the system by that unit's maximum rated hourly heat input.

We suggest that the operator demonstrate compliance using the average hourly mass across the system, averaged over 30 days. This approach provides certainty to the system or facility operator in the form of a fixed emission limitation across the system, and is consistent with the objectives of economic and technological feasibility underpinning RACT, by enabling the system or facility operator to implement any alternative means to cost-effectively achieve compliance with its RACT obligations.

This proposed approach for establishing facility or system emission averages for affected sources fully satisfies the legal requirements under RACT, and is the approach that has been used in the RACT II regulations promulgated by multiple states, including New York, New Jersey and New Hampshire. Each of those states established a fixed emission average standard based on a presumptive RACT limit multiplied by the maximum hourly heat input for each unit in the system. The proposed approach ensures that the calculation of the maximum mass emission rate

for the group of sources is consistent with the allowable emission rates under RACT for each individual source included within the group. This approach could support a reduction in the presumptive RACT standards for certain coal-fired sources to be as low as 0.20 lb/mmBTU which is half the current RACT limit of 0.4 lb/mmBTU.

Moreover, as applied to affected EGU sources, such approach is unquestionably consistent with considerations of technological and economic feasibility. Some have suggested that establishing RACT-based emission standards by calculating a maximum system or facility-wide NOx aggregate mass emission rate would not equate to a rate base on technological or economic feasibility, because there need not be a correlation between the maximum aggregate mass rate and source-level technological and economic feasibility considerations. Such objection is simply incorrect as applied to EGUs -- the determination of the maximum mass emission rate for the system or facility-wide source group would be calculated based upon the presumptive RACT which has been determined based upon technological and economic feasibility. Further, such approach is entirely consistent with numerous other regulatory schemes promulgated or approved by EPA in other contexts. Notably, as discussed above, the CSAPR regulatory scheme would work in a manner directly consistent with the proposed mass emission limitations approach proposed by PPL, and EPA has approved similar approaches to RACT emission setting in other states.

It is also important not to confuse the determination of appropriate presumptive RACT standards for certain source categories with the propriety of using an *emission averaging approach.* Certain states have contended that the proposed presumptive RACT standards included within the Proposed Rule are not sufficiently stringent, as compared to categorical NOx emission standards promulgated by such states within their RACT schemes. However, it is important to note that those states have used the approach that PPL is suggesting for determining the appropriate RACT standard for the system – applying their presumptive RACT standard to the *maximum hourly heat input for each unit to establish a fixed hourly mass limit for the system.*

PPL believes that its proposed approach toward establishing emission averaging standards satisfies in all respects legal requirements for promulgating RACT requirements, while simplifying the determination of the emission average standard for each source group. (The Board has separately identified as an objective of this rulemaking the reduction in the burden on both regulated sources and the Department in determining appropriate RACT standards.) The approach also provides the additional benefit of accounting for unplanned source outages and variation in operating scenarios that are beyond the control of the source operator. By establishing a maximum hourly mass emission rate for a group of regulated sources, PPL's proposed approach also ensures that ambient air quality is protected, and does not artificially derive emission rates or impose unnecessary operating restrictions in a manner that does not correspond to reductions in mass emissions that affect ambient air quality.

Other commentators have suggested that calculation of emission averages based upon maximum allowable heat input would allow a system or facility operator to include in the emission average sources that have consistently operated well below maximum heat input. Thus, the commenters suggest, by calculating maximum mass emission rates for the source group based on an expectation of maximum heat input from each source, the methodology would allow actual emissions to *increase* under a RACT regulatory regime. First, we note that this is precisely the approach that has already been taken by several states and approved by EPA. It cannot be argued that the same RACT approach by those states complies with the Clean Air Act, but the comparable methodology cannot lawfully be included by the Board in the Pennsylvania RACT program.

Second, we believe that the objection ignores the pre-existing unit-specific permitting obligations imposed upon sources through the Department's historic permitting schemes. In other words, a source cannot increase its allowable or historic operations or emission rate due to the application of a new RACT emission averaging requirement, beyond that which the facility or system operator could have already accomplished under existing permitting requirements. Therefore, the suggestion that application of a new RACT standard would actually result in an increase in actual emissions necessarily ignores the broader regulatory and permitting scheme to which this new RACT program is merely added.

Further 10% Reduction Requirement

PPL strongly disagrees with the provisions in the Proposed Rule that require a further 10% reduction in emissions if a system average approach is used. There is no justification for the imposition of such "penalty" upon a company electing to implement this compliance option. Indeed, those states which have incorporated averaging provisions into SIP-approved RACT-based regulatory programs have generally not adopted this automatic contraction of allowable RACT emission rates. Instead, by allowing the system or facility wide average RACT limitation to be calculated as equivalent to the aggregate of the alternative unit-specific standards otherwise applicable to the affected sources, the RACT regulation would preserve comparable air quality benefits while enhancing the opportunity for affected sources to more completely address technological and economic efficiencies afforded by this compliance option.

In summary relative to the emission averaging provisions, adoption of an alternative methodology to the approach toward emission averaging reflected in the Proposed Rule is not only essential to preserve the technological and economic feasibility considerations inherent in this RACT proposal, but also to support the stability of the electricity grid where contractual commitments regarding the availability of generating capacity are critical to the dispatching of electric power.

Alternative Compliance Methods

As stated above, PPL supports the Board's proposal to afford regulated facilities alternative methods for demonstrating compliance with RACT standards. Indeed, at the core of the derivation and application of RACT requirements under the Clean Air Act is the recognition of technological and economic feasibility in the determination of appropriate standards. However, as currently drafted, the Proposed Rule could be interpreted to impose preconditions to alternative compliance measures that would not be consistent with the legal concepts underlying RACT.

In particular, the language of the Proposed Rule could be interpreted to require a source operator to first demonstrate that it "cannot" satisfy presumptive RACT standards in order to rely upon source or facility emission averaging, or similarly require a source operator to first demonstrate that it cannot satisfy either the presumptive RACT standards or the emission averaging methodology prior to undertaking a case-by-case analysis for a specific source. Any such approach would not only severely undermine the flexibility that the Board identifies in the preamble to the Proposed Rule as a key objective of the regulatory scheme, but would also be inconsistent with the legal obligation to determine RACT standards based upon technological and economic feasibility.

The objectives of RACT implementation are to ensure that emissions from affected sources are limited to the extent consistent with concepts of technological and economic feasibility. Therefore, if an operator can demonstrate – under established RACT-based principles – under a case-by-case analysis that a specific emission standard qualifies as RACT for a certain source, the source operator should not be required to separately demonstrate that it is not possible to meet the presumptive standard. Instead, as a component of its case-by-case RACT analysis, the source operator will evaluate each alternative control for technological feasibility. Having identified technologically feasible emission control systems, the source operator would then perform its economic feasibility analysis and reach an appropriate case-by-case conclusion under RACT. This analysis should not require any separate or distinct evaluation of a presumptive RACT emission rate, nor a heightened standard for rejecting such emission rate.

Even more clearly, there can be no justifiable argument that concepts of technological and economic feasibility under RACT mandate that a source owner demonstrate that it could not implement emission averaging in accordance with the final RACT regulation as a precondition to pursuing a case-by-case determination of RACT for an individual source. Once again, pursuant to the Clean Air Act, implementation of RACT involves the evaluation of technological and economic feasibility of alternative emission control options on a source-specific level. To our knowledge, such analysis has never required a demonstration that an enhanced degree of emission control cannot be achieved on a system-wide basis. Moreover, it would be virtually impossible to perform an analysis on this basis, because of the many variable considerations that

arise in the context of evaluating system- or facility-wide performance of multiple units. Indeed, the purpose of allowing system- or facility-wide compliance demonstrations is to account for the high probability of *unanticipated* and *variable* conditions that cannot be squarely addressed in a compliance plan, but for which emission averaging may afford alternative means of achieving compliance. That inherent variability and uncertainty cannot form the basis of an evaluation of technological and economic feasibility of a group of sources under RACT as a prerequisite to performing a unit-specific analysis.

Therefore, in order to ensure consistency with the statements made by the Board in support of the Proposed Rule – regarding the objectives of reduced complexity and demands on public and private resources – as well as to ensure that the final RACT regulation is consistent with both established legal standards and appropriate objectives of the rulemaking, the Board should revise the language of the Proposed Rule to clarify that any affected source may elect to utilize any of the compliance options established under the final RACT regulation. Specifically, PPL interprets the Proposed Rule to afford regulated entities the option of determining which sources to include in any averaging group, as well as to exclude regulated sources from any averaging group, as long as such sources are otherwise addressed (as applicable) through alternative RACT-based compliance options, including compliance with the presumptive emission standards or case-by-case evaluations. However, PPL believes that the Proposed Rule is not as clear on this point as it might be; PPL therefore believes that the regulatory language should be clarified to avoid any confusion on the issue.

For similar reasons, PPL specifically recommends that the Board revise the provisions of the Proposed Rule governing emission averaging by expressly clarifying that a regulated entity may elect which regulated sources to include in any emission averaging group, and by further clarifying that the election by a regulated entity to participate in the emission averaging provisions of the RACT standards does not preclude such entity from utilizing any other compliance option for regulated sources not included within an emissions average. PPL also believes that the Proposed Rule should be clarified to expressly allow a regulated entity to determine at any time to discontinue reliance on emission averaging for any sources, and thereafter adopt any alternative RACT compliance option available under the regulation.

Converted Combustion Units

Due to the larger combustion zone available on natural gas-fired combustion units rated at greater than 50 million Btu/hour, the presumptive RACT emission rate of 0.08 lb NO_X/MMBtu for such units is not achievable for a unit that was designed to burn coal or fuel oil and has been converted to firing natural gas. For example, the units at the Martins Creek facility were converted from an oil-fired design to allow combustion of natural gas. Stack testing of these units revealed that NOx emission rates cannot approach the standard that may be achievable for units originally designed to combust primarily or exclusively natural gas. With the continued restriction on emissions imposed by evolving regulatory standards, these unit types

have become and continue to become more prevalent. Therefore, PPL believes that case-by-case RACT determinations are appropriate for these sources.

Compliance Demonstrations

PPL also believes that the Proposed Rule should be clarified with respect to the identification of the compliance demonstration period applicable to the emissions standards, particularly with respect to sources utilizing continuous emission monitoring systems ("CEMS") to demonstrate compliance. As currently drafted, Section 129.100(a) of the Proposed Rule does not expressly provide that a source subject to a RACT standard based on a case-by-case analysis would demonstrate compliance over a 30-day rolling average. RACT standards established for alternative compliance schedules are listed, but the alternative RACT proposals also listed in Section 129.99 is not listed in 129.100(a). PPL requests, at a minimum, that the Proposed Rule be revised to clarify that any source utilizing a CEMS to demonstrate compliance with *any* established RACT standard shall be allowed to evaluate compliance as a thirty-day rolling emissions average.

The Proposed Rule appropriately affords regulated entities alternative means of demonstrating compliance with RACT emission standards. Among these options, utilization of a CEMS provides the most accurate and "continuous" evaluation of compliance, and therefore is recognized by both EPA and DEP as providing an enhanced measure of compliance demonstration. In consideration of such "continuous" assessment of compliance, it is critical that the obligation to satisfy these RACT-based emission standards reflects expected variability in operations and emissions over short terms.

In addition, the underlying evaluation of the technological and economic feasibility of emission controls for such sources is not based upon the continuous and instantaneous satisfaction of such standards; rather, the determination of economic and technological feasibility reflects the expected performance of such units through application of the relevant emission controls at the systems. By establishing a thirty-day emission averaging period as the basis for the demonstration of compliance with such standards, the Board would ensure that the final regulation imposes the compliance obligations in the format reflective of the basis for establishing the standards in the first instance, and do so in a manner consistent with the economic and technological feasibility objectives of RACT. Further, utilization of a thirty-day average for evaluating compliance in these circumstances is consistent with RACT standards regarded by EPA as acceptable in other contexts, in the context of SIP approvals and more generally in the evaluation of compliance demonstration options.

Compliance Schedules

Finally, PPL requests that the provisions of Section 129.97(a) and 129.97(k), relative to alternate compliance schedules, be revised to provide a mechanism for a regulated source to

demonstration. In consideration of such "continuous" assessment of compliance, it is critical that the obligation to satisfy these RACT-based emission standards reflects expected variability in operations and emissions over short terms.

In addition, the underlying evaluation of the technological and economic feasibility of emission controls for such sources is not based upon the continuous and instantaneous satisfaction of such standards; rather, the determination of economic and technological feasibility reflects the expected performance of such units through application of the relevant emission controls at the systems. By establishing a thirty-day emission averaging period as the basis for the demonstration of compliance with such standards, the Board would ensure that the final regulation imposes the compliance obligations in the format reflective of the basis for establishing the standards in the first instance, and do so in a manner consistent with the economic and technological feasibility objectives of RACT. Further, utilization of a thirty-day average for evaluating compliance in these circumstances is consistent with RACT standards regarded by EPA as acceptable in other contexts, in the context of SIP approvals and more generally in the evaluation of compliance demonstration options.

Compliance Schedules

Finally, PPL requests that the provisions of Section 129.97(a) and 129.97(k), relative to alternate compliance schedules, be revised to provide a mechanism for a regulated source to secure an extension of those deadlines. For example, where an affected facility has submitted its RACT compliance plans, and/or where any necessary plan approval applications have been submitted in a timely manner, but delays in issuance of required regulatory approvals or equipment delivery interferes with the ability to satisfy the compliance deadlines, the final rule should ensure that the facility owner may seek and be granted an extension of the relevant compliance dates.

Once again, we appreciate the opportunity to provide these comments on behalf of PPL concerning the Proposed Rule. If you have any questions about our comments, please contact me at akhanwalkar@pplweb.com or 610-774-5466.

Very truly yours,

A. Khanwalkar

Arundhati Khanwalkar
Sr. Director Environmental
On Behalf of PPL Generation LLC

PPL Summary of Comments to EQB proposed
"Additional RACT requirements for Major Sources of NOx and VOCs"

1. PPL supports the Board's proposed framework for implementing NOx RACT by allowing affected sources to choose among presumptive, source-specific and facility- or system-wide average compliance demonstrations. However, in order for this critical aspect of the regulation to achieve its goal of flexibility (related to technological and economic feasibility), the Board should revise the rule to clarify that an affected source may choose, without precondition, among the compliance options.
2. Any presumptive RACT emission rates must meet the Clean Air Act's requirement that RACT standards be reasonably available and cost effective. Against this standard, and as informed by EPA's CAIR/CSAPR program, PPL's analysis indicates that the proposed presumptive NOx emission rates for EGUs that are fired on coal (tangentially-fired), natural gas, or fuel oil appear to have been set at the upper bound of the cost effective range.
3. PPL also supports the Board's proposal to allow the use of facility- or system-wide averaging to demonstrate compliance with the proposed RACT limits. Properly structured, such flexibility can significantly reduce costs without reducing the environmental benefits of the program.
4. PPL is concerned, however, that the system averaging approach proposed by DEP is not workable. Fundamentally, the Proposed Rule would result in the calculation of a mass emission limitation, as a 30-day average, which *constantly fluctuates* based upon the actual heat input of the units included in the facility- or system-wide average. Therefore, if any of these emission units experience a reduction in heat input during the compliance period, the sources must achieve a *further reduction* in mass emissions in order to comply with the rule. This approach does not give the operator the ability to develop and submit to DEP a fixed facility-wide or system-wide limit that the operator can rely upon for compliance demonstration. Although the facility operator can maintain actual total mass emissions from all the sources below a level determined based on DEP's presumptive RACT limits, the units would be considered noncompliant with RACT simply because one or more sources reduced their operation during the compliance period. This has the perverse effect of penalizing the operator even though actual emissions were *lower* due to the reduced operation.
5. PPL suggests two alternatives to DEP's approach. One would be to determine that compliance with CAIR/CSAPR constitutes compliance with RACT, to the extent that a regulated source demonstrates compliance with CAIR/CSAPR by reliance only on Pennsylvania allowances. The second alternative is to implement an approach toward average mass emission limits that is consistent with EPA-approved programs adopted by other states, such as New York, New Jersey and New Hampshire. The allowable facility-wide or system-wide emission rate for each EGU would be calculated by multiplying the presumptive RACT limit applicable for that EGU by the maximum heat input of the EGU to derive an hourly mass number for each EGU. The facility-wide or system-wide average limit would be the sum of all of the hourly mass numbers in the system. Compliance would be demonstrated using a 30-day rolling average of the actual emissions using CEM data.
6. Finally, PPL requests that the proposed rule be revised to clarify that any RACT-affected emission unit that demonstrates compliance through the use of a CEMS would perform that demonstration over at least a 30-day operating period, similar to the RACT regulations of other states.