Pamela F. Faggert
Chief Environmental Officer and
Vice President-Corporate Compliance

Dominion Resources Services, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060
Phone: 804-273-3467

dom.com

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Pennsylvania Environmental Quality Board
P. O. Box 8477
Harrisburg, PA 17105-8477

RE: Proposed Additional RACT Requirements for Major Sources of NOx and VOCs (44 PA. B. 2392)

Dear Sir or Madam:

On April 19, 2014 the Pennsylvania Environmental Quality Board (Board) proposed to amend Chapters 121 and 129 of the Pennsylvania Code to adopt new presumptive reasonably available control technology (RACT) requirements and RACT emission limitations for certain major stationary sources of oxides of nitrogen (NOx) and volatile organic compound (VOC) emissions. The proposed rulemaking, when final, will be submitted to the United States Environmental Protection Agency (EPA) for approval as a revision to the Commonwealth's State Implementation Plan (SIP). RACT re-evaluation is a requirement to be fulfilled each time a National Ambient Air Quality Standard is promulgated, as happened in 2008 for ozone; however, specific emission reductions are not required under the re-evaluation. It is the stated intent of the Pennsylvania Department of Environmental Protection (Department) that this rulemaking fulfill requirements for re-evaluation and be less resource intensive than imposing case-by-case analysis for affected facilities in the covered categories. While we understand the need for the rule, this change, if finalized as proposed, could have a significant impact on Dominion Transmission, Inc. (DTI) operations in the Commonwealth. Our detailed comments are provided below and our greatest concerns with the rule relate to presumptive RACT VOC

limits stricter than the federalNSPS and compliance schedules that cannot reasonably be achieved.

Dominion owns and operates approximately 2,300 miles of natural gas pipeline, over 30 compressor stations, and extensive underground natural gas storage assets in Pennsylvania. In addition, Dominion owns and operates Fairless Energy, LLC, a natural gas combined cycle (NGCC) facility in Bucks County, PA and already meets limits that are stricter than (NOx) or equivalent to (VOC) those being proposed.

Definitions (§121.1)

We are concerned that differences in the definition of "stationary internal combustion engine" from that found in federal rules will be confusing. The proposed definition of "Stationary internal combustion engine" (§ 121.1) is not consistent with federal regulations (NSPS, NESHAP) that differentiate mobile and stationary source engines. Under federal rules, portable / transportable engines are subject to mobile source "nonroad engine" regulations and not NSPS or NESHAP standards. The Proposed Rule revision broadly applies the "stationary engine" definition to include both mobile and stationary units and would cause implementation confusion. We ask that the Department use a definition consistent with federal rules. For example, the Subpart JJJJ definition includes, "…Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 C.F.R. 1068.30…". The nonroad definition in 40 C.F.R. , §1068.30 includes portable and temporary engines, and nonroad engines include units that are, "…portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicators of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform." Thus, transportable engines are not stationary engines under federal regulations, and this conflicts with the §121.1 definition, where an engine that can be moved is considered stationary. In order to avoid confusion, we request the following revision:

§121.1 Stationary internal combustion engine – ~~**For purposes of § 129.203 (relating to stationary internal combustion engines), an**~~ **An** internal combustion engine of the

reciprocating type that is either attached to a foundation at a facility or is designed to be capable of being carried or moved from one location to another and is not a mobile air contamination source.

Presumptive RACT requirements, RACT emission limitations, and petition for alternative compliance schedule (§129.97)

The presumptive RACT approach was chosen, in part, to limit the number of sources that will likely be required to submit case-by-case RACT applications and the desire to avoid numerous SIP revisions. Although we support the use of a presumptive RACT approach, we are concerned that the Department has significantly underestimated the number of impacted sources and, by extension, the resources and time that will be required to fully analyze and bring sources into compliance. The case-by-case RACT process is, indeed, quite resource-intensive and it appears that the RACT requirements being proposed will result in numerous case-by-case RACT applications. Based on a preliminary analysis of the sources operated by DTI, approximately seventy (70) to eighty (80) sources would be impacted by this proposal and as many as fifteen (15) may require case-by-case RACT determinations, if the rule is finalized as written. Further, preliminary compliance costs are estimated at over $20 million.

In the Regulatory Analysis Form prepared for the Independent Regulatory Review Commission, the Department estimated state-wide compliance costs of $114 million and stated that this was believed to be an over-estimate. This cost estimate was generated based on the assumption that both NOx and VOCs could be addressed by the installation of NSCR on rich burn engines at a unit cost of $45,520. Recent information obtained from vendors by DTI indicates that the cost of oxidation catalyst installation for existing units ranges from $300,000 to $750,000 per engine. Further, it is our experience with lean burn engines that NOx and VOCs must be controlled separately, usually with Clean Burn technologies for NOx control and oxidation catalyst for VOC control. There are also concerns with effective operation of oxidation catalysts on two-stroke engines due to the potential for uncombusted oil in the exhaust, resulting in fouling of the catalyst.

We request that the Department re-evaluate the number of impacted sources, associated control costs and technical feasibility of controls to fully define the scope of facilities that will be required to comply with the final rule.

Scope of the Proposed Rule

The proposed rule applies to affected units at facilities that exceed the NOx or VOC major source threshold (e.g., for attainment areas, NOx above 100 TPY or VOCs above 50 TPY). We request that the Department clarify that the rule only applies for the pollutant that exceeds the major source threshold. The language in the proposal is unclear on this point and standards could apply for VOC, NOx, or both pollutants, depending on whether an individual pollutant or both exceed the major source threshold.

The proposed rule includes presumptive RACT limits for both VOCs and NOx. The basis for further regulation of VOCs is unclear. While the VOC standard for rich burn engines (1.0 g VOC/bhp-hr) is consistent with the New Source Performance Standard, (NSPS)[1], the PA presumptive RACT standard for lean burn engines is more aggressive than those found in the NSPS for engines and boilers (0.7-1.0 g VOC/bhp-hr vs. 0.4 g VOC/bhp-hr for lean burn engines). As a result, newer lean burn engines would be required to install controls to comply with the presumptive RACT standard. Since this is not cost-effective, companies would be compelled to submit case-by-case RACT determinations for these sources based on the proposed rule. In summary, the basis for this presumptive VOC emission limit is not clear and would require installation of an oxidation catalyst to meet this limit, even on sources that meet the current NSPS limit, which does not comport with the presumption that no additional controls would be require to meet these limits is unfounded. Was it the state's intent to establish a standard of 0.8 g VOC/bhp-hr which would represent 60% control efficiency? We request that the Department re-evaluate the need to regulate VOCs in this rule. Should the Department decide to retain VOC limits, we request the NSPS standard be used, the VOCs be clearly defined

[1] Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 C.F.R. 60 Subpart JJJJ.

as non-methane, non-ethane hydrocarbons, and that formaldehyde not be included in the determination. This standard is consistent with the available control technology. Additionally, we support the specific comments provided by INGAA on this point.

Should the Department choose to retain presumptive VOC emission limits in the rule we ask that the same averaging provisions that are available for NOx compliance be extended to VOC sources also.

We request that the Department also consider the unintended impact of further NOx controls on carbon monoxide (CO) emissions. Engines that are currently in compliance for permitted CO emissions may exceed the CO limit in their permit if required to install NOx controls. These sources would then need to be retrofitted with oxidation catalysts to maintain current CO emission limits or additional permitting will be required to allow for increased CO emissions. We request that this impact be fully considered in determining implementation costs including additional costs for analysis, permitting, and controls.

Compliance Schedule

The compliance schedule in the proposal does not allow adequate time for companies to perform all tasks that will be required to determine control requirements, assess RACT costs, prepare permit applications, receive air permits, and install controls. This proposal requires a multi-step planning process which must be done sequentially to meet the requirements. Companies must first determine which units are impacted by the rule and their compliance status; which could require performance testing. We estimate that this task will require a minimum of six months to complete. Once the compliance status is known, work can begin to determine which units will require controls, those that will require permit modifications to update emissions limits, and those that will be potentially subject to case-by-case RACT. For those units that will require controls, a determination must be made of which units could potentially be "averaged". For those units that will be subject to case-by-case RACT, cost estimates for controls must be obtained from equipment vendors and cost-benefit analyses prepared. We request that the period

for Compliance Plan preparation be extended to eighteen months rather than the six months found in the proposal. The Compliance Plan would then be submitted to the Department for approval. Further, after the determinations are made the proposal allows only three years, running concurrently with the time allowed for plan preparation, to install controls. We request a provision for companies to submit a company-specific Compliance Schedule as part of the overall Compliance Plan, subject to Department approval.

The proposed one year time allowed for installation of controls is not feasible and we ask that the Department allow development of company-specific schedules. Even though the proposal allows companies to petition the Department for an extension of the initial one year compliance period to three years, three years still does not allow adequate time for budgeting, bid preparation and contracting, equipment manufacture and delivery, and installation of controls on units used for natural gas transmission. Air permits would also need to be obtained during this same time period. This is a particular concern as the number of air permit applications for new construction in the Commonwealth are expected to increase for the natural gas industry and would compete for already limited Department resources. Construction schedules will need to be developed that allow time for each unit to be taken offline, retrofitted, and brought back into service, often before the next unit can be addressed. For sources that will be subject to case-by-case RACT and alternative compliance schedule, the proposal allows only three years for installation of controls. It is very important that companies have adequate time to develop robust compliance plans and construction schedules to avoid multiple requests for extension, and possibly negotiated Consent Agreements that could have been avoided with adequate preparation time. The large number of affected sources in the natural gas transmission system necessitates an ordered, coordinated plan to avoid impacts to the natural gas supply; multiple engines cannot be taken out of service at the same time.

There are also concerns that equipment manufacturers and installation firms will not be able to meet the schedules proposed by the rule. The ability of the natural gas industry to keep up with installation and upgrades in PA is already strained by the significant amount of natural gas production activity occurring in the state. It is expected that the current supply of engineering

firms, equipment manufacturers, and installation firms will not be able to meet the one year schedule of the rule and may be strained to even meet an extended, mandated schedule.

Use of Manufacturer's Specification for Smaller Sources

Presumptive RACT for smaller sources requires "the installation, maintenance and operation of sources in accordance with the manufacturer's specifications and good engineering practices…". (§ 129.97(c)). The use of manufacturer's specifications does not always result in the most efficient use of resources and lower emissions because manufacturer's specifications are often based on nominal ambient conditions and use patterns which may not be true for a given installation. For example, manufacturer's specification can be based on unit performance typically at sea-level, average temperatures and for continuous operation. Operators must often develop operation procedures that are specific to their operating conditions and usage. Further, some units are modified over time and the original manufacturer's specifications are no longer appropriate. We request that the Department allow companies the option of using manufacturers' recommendations or similar site-specific written maintenance and operating procedures based on their unique operating requirements and the current condition, usage, and configuration of the unit. This is consistent with the conditions currently required to be met under the RICE NSPS, 40 C.F.R. Part 60, Subpart JJJJ.

In addition, the required annual inspections and adjustments being proposed for combustion heaters in the proposed rule, tune-ups of combustion units, and the associated recordkeeping requirements are in many instances more than what is normally required by the manufacturer for good operation of natural gas-fired equipment. Natural gas-fired equipment also rarely needs to have the flame adjusted and in many units the air to fuel ratio is controlled by a manual adjustment of a burner that is not expected to change and should not require adjustment. In addition, maintenance of natural gas-fired engines and boilers is addressed in the federal NSPSs and NESHAPs for these sources. We request the Department eliminate the proposed annual maintenance on natural gas units stated in 129.97(b)(1) as this required maintenance is not expected to result in any reduction of emissions and will add unnecessary recordkeeping burden.

We further request that the Department allow maintenance and inspection of combustion heaters using the manufacturer's recommendations or the company's site specific maintenance and inspection plan. If the Department includes a requirement for other natural gas-fired units we ask that the requirement to "operate and maintain equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions" be used in lieu of required annual maintenance.

Units of Emission Limits Should be Consistent

The Proposed Rule includes NOx emission limits that are based on specific technologies, including non-selective catalytic reduction (NSCR) for rich burn RICE, low emission combustion (LEC) for lean burn RICE, and lean premixed combustion for turbines. The engineering units used for emission standards are important when considering emissions performance across the operating envelope (e.g., at reduced load). For example, mass emissions to the atmosphere (e.g., pounds per hour) may not increase, but emission rates (e.g., g/bhp-hr) may increase at reduced load. Because of this, we request that the Proposed Rule be changed to express emission limits in pounds per hour rather than grams per brake horsepower hour. This is a better measurement of impact to the environment and most permit limits for these sources are already expressed in units of pound per hour.

Facility-wide or system-wide NOx emissions averaging RACT operating permit modification general requirements (§129.98)

Emissions averaging is an important alternative compliance mechanism that provides companies with needed flexibility to determine the most cost-effective emissions reduction strategy and we encourage the Department to retain these provisions in the final rule. Further, we request that this option be given the same standing as presumptive RACT emission limits. As the proposal is currently written, an operator must first determine if a unit can comply with the presumptive RACT limit and, if not, then that unit may be considered as part of an emissions average. This approach will result in undue burden and unnecessary paperwork to first document that

prescriptive limits are not achievable for a specific unit before determining if a specific unit may be included in an emission average. This restricts the use of the averaging provisions and takes away much of the flexibility that this option would otherwise offer. Specifically we request the language in § 129.98 be revised to read:

> *"(a) The owner or operator of a major NOx emitting facility subject to §129.96 (relating to applicability) that includes an air contamination source subject to a NOx RACT requirement or NOx RACT emission limitation in §129.97 (relating to presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule)* ~~*that cannot meet the applicable NOx RACT requirement or NOx RACT emission limitation*~~ *may elect to meet the applicable NOx RACT requirement or NOx RACT emission limitation in §129.97 by averaging NOx emissions ..."*

An additional reduction of 10% when using emission averaging is not warranted. The presumptive RACT limits found in the rule are based on the current state of technology available. The requirement for a further 10% reduction would further limit the utility of this compliance alternative. We request that the Department remove this requirement in light of the reductions that will be achieved in consideration of the less desirable option of case-by-case RACT determinations for those units that are not able to meet the presumptive limits either directly or by averaging.

The Proposed Rule reconciles emissions based on a 30-day rolling average. This requirement appears to be an extension of regulations for electric utilities and larger boilers which are largely equipped with Continuous Emissions Monitoring Systems (CEMS), which is typically not the case for natural gas transmission operations. Monitoring requirements for natural gas sources are generally based on periodic testing occasionally with parameter monitoring, such as semi-annual NOx tests and monitoring of fuel usage. This approach is appropriate for the affected equipment because combustion-based NOx controls will be used for lean burn engines and turbines. The emissions performance is inherent to equipment operation, and emissions will not deviate significantly because technology is designed into the system. Emission controls cannot be turned off or by-passed, as is the case for post-combustion emissions control. Portable analyzers are commonly applied for these tests, and in recent years, portable analyzer testing has been added to

a number of EPA rules for natural gas-fired RICE and turbine regulations. Examples include the engine NSPS, turbine NSPS, and RICE NESHAP. In addition to portable methods cited in those rules (e.g., ASTM Method D6522), the January 2013 RICE NESHAP amendments include a portable method as Appendix A[2] (for CO measurements required by Subpart ZZZZ). Periodic portable analyzer tests are a reasonable basis to demonstrate emissions levels for the purposes of emissions averaging and we ask that they be included in the final rule. Further, the requirement to maintain a 30-day rolling average for natural gas sources would likely result in tracking requirements that are unnecessarily burdensome and costly and, consequently, these sources would be required to provide case-by-case RACT determinations. We request that the Department rely on established procedures in Pennsylvania regulations, the EPA model rule, and other state rules that use annual emissions averaging reconciliation and/or ozone season reconciliation. For natural gas transmission and other industrial sources, we advocate that the final rule not require 30-day rolling averages and instead allow annual reconciliation, and/or ozone season reconciliation.

Compliance demonstration and recordkeeping requirements (§129.100)

The proposed rule, if finalized, would require sources to demonstrate compliance with the applicable RACT requirements or emission limits by performing monitoring or testing. Specifically, the proposal would require that sources be tested within one year of the effective date of the rule (§ 129.100(b)(1)). Some applicable sources are already subject to periodic testing requirements and meet the proposed standards. We request that the Department allow the last approved emission source test that has been conducted within five years of the effective date of the rule to be used to demonstrate compliance. This period is consistent with the term of the stack testing requirements of the Title V operating permits. We further request that sources that already have a periodic testing requirement in their operating permit be allowed to stay on that same test schedule provided that there have been no changes to the source, i.e. the test clock would not be reset for applicable sources such that future testing would be required in the same

[2] 78 Fed. Reg. 6674 – 6724.

time frame, possibly within a few weeks of one another, rather than staggered throughout the year.

We appreciate the opportunity to comment on the proposed rules and your consideration of the comments that we have provided. Should you have any questions regarding these comments please contact Paula Hamel at 804-273-3024 or at paula.a.hamel@dom.com.

Sincerely,

Pamela F. Faggert

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