pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO File AQ/FAC/RACT/43-000-196

FROM Hubert Thomas Flaherty HTF
New Source Review
Air Quality Program

THROUGH

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DATE June 21, 2018

RE Review of Application for RACT II
GE Transportation – Grove City
PF ID: 3015
Pine Township, Mercer County

Introduction:
On October 24, 2016, GE-Grove City submitted a RACT II Application for the entire facility. This review consists of only the alternate RACT proposal from 25 PA Code 129.99.

Background:
This facility is a major stationary source of both NO_x and VOCs and was in existence before July 20, 2012. As such, in accordance with 25 Pa. Code §129.96, this facility is subject to the Department's RACT II requirements under §§129.97-129.100. In accordance with §129.99(d)(1)(i), the facility was required to submit a RACT proposal by the October 24, 2016 deadline.

The facility RACT II application addresses five sources subject to an alternative RACT proposal for NO_x pursuant to §129.99(b) and six sources subject to an alternative RACT proposal for VOC pursuant to §129.99(c). Although this RACT II application is only needed for this alternative RACT proposal, the RACT II application also addresses sources at this facility subject to the presumptive RACT II requirements under §129.97 and exempted sources not subject to RACT II under §129.96(c). The presumptive and exempt sources will be addressed during the modification of the facility operating permit.

Sources:

Source	NO_x	VOC
031	Presumptive	Presumptive
037	Presumptive	Presumptive
039	Presumptive	Presumptive

106	N/A	Subject to 129.52
106B	N/A	Exempt
114	N/A	Subject to 129.52
132A	Alternate (case-by-case)	Alternate (case-by-case)
132B	Alternate (case-by-case)	Alternate (case-by-case)
132C	Alternate (case-by-case)	Alternate (case-by-case)
132D	Alternate (case-by-case)	Alternate (case-by-case)
132E	Alternate (case-by-case)	Alternate (case-by-case)
132F	Constructed after 7/20/12	Constructed after 7/20/12
137	Presumptive	Presumptive
138	Presumptive	Presumptive
140	N/A	Alternate (case-by-case)
142	N/A	Subject to 129.77
199	N/A	Presumptive

Alternative RACT Proposal and Petition for Alternative Compliance Schedule:
The six sources requiring an alternative RACT proposal are Source ID 132A (Diesel Engine Test Cell 1), Source ID 132B (Diesel Engine Test Cell 2), Source ID 132C (Diesel Engine Test Cell 3), Source ID 132D (Diesel Engine Test Cell 4), Source ID 132E (Diesel Engine Test Cell 5) and Source ID 140 (Cleaning Operations). The 5 test cells will undergo a NO_x and VOC review; while the cleaning operations will undergo only a VOC review. In accordance with §129.99(d)(1), the facility shall submit a written RACT proposal in accordance with the procedures in §129.92(a)(1)-(5), (7)-(10) and (b).

From 25 PA Code 129.99(a), the facility may propose an alternative RACT requirement or RACT emission limitation in accordance with subsection (d). The facility proposes to maintain existing NO_x and VOC limits for each source.

Original RACT (7-27-95) (Test Cells 1 – 4)

- Total NO_x and VOC emissions from the facility shall not exceed 398 tons/yr and 48.6 tpy, respectively.
- Fuel consumption shall be restricted to 200,000 gal/yr for the turbo charger test cell (Test Cell 4).
- NO_x emissions shall not exceed 4.2 ton/yr for the turbo charger test cell (Test Cell 4).
- Fuel consumption shall be restricted to 1,363,000 gals/yr for 2,000 – 4,500 Hp engines and 210,375 gals/yr for 6,250 HP engines based on a twelve-month rolling average.
- NO_x emission shall not exceed 37.3 tons/yr for the 6,250 HP engines (125 units/yr) and 347.7 tons/yr for the 2,000 – 4,500 HP engines (1,125 units/yr).
- NO_x sampling shall be performed for each category of diesel engine being tested in test cells 1 through 4. NO_x sampling shall be performed in accordance with 25 PA Code Chapter 139.
- Annual emissions and fuel consumption shall be calculated monthly and compiled on a quarterly basis. Fuel consumption shall be monitored by recording each fuel delivery to the diesel fuel tank system. The company shall submit quarterly reports indicating the NO_x and VOC emissions for the diesel engine testing. Annual emissions and fuel consumption shall be updated by adding emissions during the more recent quarter and dropping the emissions for the corresponding quarter in the preceding year.

Revised RACT (12-11-98) (Test Cells 1 – 4)

- Total NO_x and VOC emissions from the facility shall not exceed 398 tons/yr, and 48.6 tons/yr, respectively.
- Fuel consumption shall be restricted to 200,000 gal/yr for the turbo charger test cell (Test Cell 4).
- NO_x emissions shall not exceed 4.2 ton/yr for the turbo charger test cell (Test Cell 4).
- Fuel consumption shall be restricted to 1,363,000 gals/yr for 2,000 – 4,500 Hp engines and 210,375 gals/yr for 6,250 HP engines based on a twelve-month rolling average.
- NO_x emission shall not exceed 37.3 tons/yr for the 6,250 HP engines (125 units/yr) and 347.7 tons/yr for the 2,000 – 4,500 HP engines (1,125 units/yr).
- NO_x sampling shall be performed for each category of diesel engine being tested in test cells 1 through 4. NO_x sampling shall be performed in accordance with 25 PA Code Chapter 139.
- Annual emissions and fuel consumption shall be calculated monthly and compiled on a monthly basis. Fuel consumption shall be monitored by recording each fuel delivery to the diesel fuel tank system. The company shall submit quarterly reports indicating the NO_x and VOC emissions for the diesel engine testing. Annual emissions and fuel consumption shall be updated by adding emissions during the more recent quarter and dropping the emissions for the corresponding quarter in the preceding year.

Revised RACT (5-16-01) (Test Cells 1 – 5)

- Fuel consumption will be restricted to 2,224,500 gal/yr for the diesel engine test cells based on a consecutive 12-month period.
- NO_x emissions shall be limited to 492.2 ton/yr for the diesel engine test cells based on a consecutive 12-month period.
- Annual emissions and fuel consumption shall be calculated monthly and reported on a quarterly basis to the Department. Engine production volume, type and horsepower rating, fuel consumption and emission factors shall be recorded and made available to Department personnel upon request for a period of at least two (2) years. Compliance with the emission limitations contained in the permit for NO_x will be determined by calculating emissions from engine testing using the reported emission factors.

Revised RACT (1-26-06) (Test Cells 1 – 5)

- Fuel consumption will be restricted to 2,669,400 gal/yr for the diesel engine test cells based on a consecutive 12-month period.
- NO_x emissions shall be limited to 492.2 ton/yr for the diesel engine test cells based on a consecutive 12-month period.
- Within 90 days of the manufacturing and testing of a new engine type, a source test shall be conducted to refine estimate emission factors. A pretest protocol shall be submitted to the Department (Regional Office) for approval.
- Annual emissions and fuel consumption shall be calculated monthly and reported on a quarterly basis to the Department. Engine production volume, type and horsepower rating, fuel consumption and emission factors shall be recorded and made available to Department personnel upon request for a period of at least two (2) years. Compliance with the emission limitations contained in the permit for NO_x will be determined by calculating emissions from engine testing using the reported emission factors.

Operating Permit Conditions (8-2-16)

- Source 132A, Source 132B, Source 132C, & Source 132D
  - The NO_x emissions shall be restricted to 450.25 tpy based on a 12-consecutive month rolling total for Diesel Engine Test Cells 1 - 4. [From Condition # 001 of Plan approvals 43-196C and 43-196D, Section D, Sources 132A - 132D.] [This condition assures compliance with the following condition from RACT 43-196, Condition 4 and Plan Approval 43-399-016, Condition 5: The NO_x emission shall be restricted to 492.2 tons/yr for the diesel engine test cells based on a 12-month rolling total. Compliance with this emission limitation will be determined by calculating emissions from engine testing using the reported emission factor.]
  - Fuel consumption shall not exceed 2,319,458 gal/yr based on a 12-consecutive month rolling total for Diesel Engine Test Cells 1 - 4. [From Condition # 002 of Plan approvals 43-196C and 43-196D, Section D, Sources 132A - 132D.] [This condition assures compliance with the following condition from RACT operating permit OP 43-196, condition 3, and Plan Approval 43-196A, Section D, Source 132, condition 005: "Fuel consumption for the diesel engine test cells shall not exceed 2,669,400 gal/yr based on 12-month rolling period." This condition replaced the previously permitted 2,224,500 gal/yr limit in RACT 43-196, Condition 3 & Plan Approval 43-399-016, Condition 5.]
  - The permittee shall record the following and make available to Department personnel upon request:
    - Engine production volume each month;
    - Type and horsepower rating of engines tested each month;
    - Fuel consumption of engines tested each month; and
    - NO_x emission factors derived from testing done in compliance with the Testing Requirement in this section of the permit.
    - [Derived from Plan Approval 43-399-016, Condition 6. Compliance with this permit condition, assures compliance with RACT OP-43-196, Condition 17.]
  - The permittee shall calculate the following information monthly and submit to the Department on a quarterly basis:
    - NO_x and VOC emissions based on a 12-consecutive month rolling period; and
    - Fuel consumption based on a 12-consecutive month rolling period.
  - The quarterly reports shall be submitted to the Department within 30 days of the end of each calendar quarter. [Derived from Plan Approval 43-399-016, Condition 6. Also from RACT operating permit OP-43-196, Condition 17.]
- Source 132E
  - The following air contaminant emission limits are approved for the test cell.
    - The company shall limit the emissions of nitrogen oxides (calculated as NO_2) to 36.88 tons, or less, in any 12-consecutive month rolling period.
    - The company shall limit the emissions of VOC to 1.24 tons, or less, in any 12-consecutive month rolling period.
    - The annual emission limit for the pollutants listed above includes the emissions from start-ups and shutdowns.
  - The following short-term air contaminant emission limits are approved for this test cell.
    - The company shall limit the emissions of nitrogen oxides (calculated as NO_2) to 0.389 pounds per gallon.
    - The company shall limit the emissions of volatile organic compounds (as methane) to 0.025 pounds per gallon.

- Compliance with the short-term emission limits shall be determined by the average of the 3 runs conducted during the stack test.
- The short-term emission limits apply at all times expect during start-up and shutdown periods.

- The company shall limit the amount of fuel combusted in this test cell to 478,180 gallons in a 12-month rolling period. [From Plan Approvals 43-196C and 43-196D, Section D, Source 132E, Condition #003.]
- The permittee shall record the following and make available to Department personnel upon request:
  - Engine production volume each month;
  - Type and horsepower rating of engines tested each month;
  - Fuel consumption of engines tested each month; and
  - NO_x emission factors derived from testing done in compliance with the Testing Requirement in this section of the permit.
  - [Derived from Plan Approval 43-399-016, Condition 6. Compliance with this permit condition, assures compliance with RACT OP-43-196, Condition 17.]
- The permittee shall calculate the following information monthly and submit to the Department on a quarterly basis:
  - NO_x and VOC emissions based on a 12-consecutive month rolling period; and
  - Fuel consumption based on a 12-consecutive month rolling period.
- The quarterly reports shall be submitted to the Department within 30 days of the end of each calendar quarter. [Derived from Plan Approval 43-399-016, Condition 6. Also from RACT operating permit OP-43-196, Condition 17.]

- Source 140
  - The VOC emissions from this source (as described in the Miscellaneous section of this permit) shall not exceed 16 tons in any 12-consecutive month period. The emissions shall be calculated based on mass balance accounting for all VOC containing materials.
  - The facility shall keep records of the quantities of VOC containing materials used in this source. The records shall be maintained on a monthly basis using purchasing or usage file documents and indicate the VOC emissions from the source on a 12-month rolling total. The records shall be kept on-site for a minimum of 5 years and forwarded to the Department upon request.
  - Good housekeeping and work practices shall be used to minimize spillage.

- Source 140 (Cleaning Operations) consists of the following equipment:
  - Stack ID Description Location
  - S21 FDL Steam Booth A-27
  - Z01 Evo Steam Booth A-19
  - S22 Frame Tank A-17
  - S23 UX Steam Booth A-15
  - S24 Proceco Washer A-14
  - S28 E-Mark Jet Washer J-31
  - S29 Proceco Washer G-32
  - S30 Hurricane Washer R-43
  - S32 Turbo Line Steam Booth E-41

- S33 Intex Tank E-41
- S34 Two Open Top Tanks K-41
- S35 Frame Washer C-27 (added January 2013).
- S36 Crank Washer B-26 (added March 2013).

RACT II Application:
GE Grove City provided the following justification as to why new stacks would be required.

- New stacks would be required because the existing stacks are located adjacent to the Test Cells and are close to each other. As crowded as the stacks are, there is no room for installation of control devices. Further, the existing stacks are not structural and cannot support a load, do not have requisite sampling ports, and are not engineered for the optimum flow that would be required by an air pollution control device and the minimum backpressure that must be maintained to successfully test diesel engines. The Department concurred with their conclusion.

GE Grove City provided the following justification as to why the test cells could not be combined into a single stack with a single control technology versus installing control technology on each test cell.

- There are several design considerations that force the need for each emission point having its own stack:
  - Each test cell represents a very broad range of potential operating conditions, from a small single cylinder power assembly operating at idle, to a 6,000+ horsepower 16-cylinder engine operating at ~120%+ of load. The differences in air flow, velocity, and temperature associated with these different operating modes varies by orders of magnitude. By providing a dedicated air pollution control system to each stack, each can be optimized to run in the mode required by that stack at that time. It is technically infeasible to design and operate a single air pollution control system that can accommodate an operating range as broad as would be required in this context.
  - Engine test cell exhaust handling systems must operate with minimal backpressure that mimics that of a locomotive: Failure to do so prohibits meaningful testing. Designing and operating a single air pollution control system that can minimize inherent backpressure and prevent cross feed of backpressure from one operating engine into another is technically infeasible.
  - Multiple air pollution control systems provide operational redundancy that protects business continuity in the event of system interruption. Operating experience with these systems reveals that operational interruptions do occur with meaningful frequency. If all test cells pipe to a common stack and a common air pollution control system, any failure would result in the simultaneous shutdown of all test cells. Multiple systems provide mandatory minimum operational protection. Denying this operational protection would not be reasonable. The cost estimates submitted as a part of the RACT II application do not include the cost of wide-spread shutdown of all test cells in the event of operational failure from a single-point design.

GE Grove City provided the following justification as to why property tax should be an allowed expense for the purpose of the NO_x cost analysis.

- Having reviewed state and local tax codes in Pennsylvania, we are not in agreement with EPA's assessment that all pollution control technology would be exempt from GE property tax assessment. To the extent that installation of control technology involves additional stacks, building expansions,

and other construction related costs to accommodate the control technology, we believe that the county does have the authority to raise the assessed value of the land when improvements are made to the property. Thus, property taxes could increase as a result of construction related costs for installing control technology.

Regardless of if the tax should be included, the conclusion from the cost analysis would not change. The facility also included sales tax that should not be included in the analysis. However, with the removal of the sales tax, the cost analysis would not change. The facility has submitted updated cost analysis that does not include the sales tax.

GE Grove City provided the following justification that the PTE for Cells 1 – 5 should not be included as limits.

- GET provided the cost data for the Test Cells to demonstrate that in addition to technical infeasibility, controls are also economically infeasible. GET was not proposing emissions limits for the VOC in its RACT II analysis because controls are neither technical nor economically feasible, consequently, GET believes an emission limit is not applicable for RACT II.

NO_x Analysis:
The following table breaks down how the facility calculates the PTE for Test Cells 1 – 4. Test Cell 5 already has an individual ~~VOC~~ NO_x PTE limit which they used in the cost analysis.

	Cell 1	Cell 2	Cell 3	Cell 4
Engine Type	Tier 0	Tier 0	MFI, Non-Tier	Marine 16V250
NO_x Emission Factor (g/bhp-hr)	9.5	9.5	11.0	8.65
EF Reference	EPA Limit, Line Haul Duty Cycle	EPA Limit, Line Haul Duty Cycle	1995 US NELS Test Data	Data from Litzenberg
Engine Rating (bhp)	4,500	4,500	4,100	7,039
Maximum Operating Hours (hr/yr)	8,760	8,760	8,760	8,760
Potential NO_x Emissions (tpy)	413	413	435	588
Potential NO_x Emissions (#/hr)	94.25	94.25	99.43	134.23
Assumed Heat Rate (btu/bhp-hr)	7,000	7,000	7,000	7,000
ULSD Heat Content (btu/gal)	137,452	137,452	137,452	137,452
Annual Fuel Usage (gal/yr)	2,007,537	2,007,537	1,829,089	3,140,234

Existing NO_x Control Technologies for Source 132A, Source 132B, Source 132C, Source 132D, & Source 132E:
- None

Additional NO_x Control Technologies:
- Selective Catalytic Reduction (SCR)
- Selective Non-Catalytic Reduction (SNCR)

Ranking of Available Control Technologies:
- Selective Catalytic Reduction (SCR) – 70% - 90%

- Selective Non-Catalytic Reduction (SNCR) – 30% - 50%

Evaluation of Technical Feasibility:
- Selective Catalytic Reduction (SCR) – SCR uses ammonia or urea (reducing agent) to selectively reduce NO_x to N_2 and H_2O. The reducing agent is injected into the flue gas stream upstream of a catalyst bed. This reaction occurs at ~ 500 to 800F. SCR is feasible.
- Selective Non-Catalytic Reduction (SNCR) – SNCR uses ammonia or urea to react with NO_x to form N_2 and H_2O without the use of a catalyst. This reaction occurs at ~ 1,600 to 2,100F. SNCR is not feasible because of significant fluctuations in engine load. The system would not be able to maintain the required operating temperature.

Ranking of the Technically Feasible Control Technologies:
- Selective Catalytic Reduction (SCR)

Evaluation of Cost Effectiveness of each Control Technology:
In the preamble to the RACT II regulations, the Department indicated that $3,500/ton of NO_x removed and $7,000/ton of VOCs removed was deemed the upper-bound cost-effectiveness threshold and applying these new thresholds does not have an effect on the add-on control technology decisions for the presumptive RACT requirements established in the final-form rule-making (Pennsylvania Bulletin, Vol. 46, No. 17, April 23, 2016 page 2044). The cost analysis conducted for SCR for Cells 1 & 2 was $8,611/ton based on PTE of 413 tpy for each cell. The cost analysis conducted for SCR for Cell 3 was $8,473/ton based on PTE of 435 tpy. The cost analysis conducted for SCR for Cell 4 was $9,073/ton based on PTE of 450.25 tpy. The cost analysis conducted for SCR for Cell 5 was $44,795/ton based on PTE of 36.88 tpy. Based on the cost analysis, SCR is deemed to be not cost-effective.

NO_x Conclusion:
For Source 132A, Source 132B, Source 132C, Source 132D, & Source 132E, no additional control technologies are deemed RACT II. While Cells 1 – 4 have a combined NO_x limit of 450.25 tpy, each cell has its own PTE as shown in the Table above which is the PTE used in the cost analysis (413 tpy for Source 132A & 132B; 435 tpy for Source 132C; 450.25 tpy for Source 132D; and 36.88 tpy for Source 132E). In lieu of stack testing at operating permit renewal, the company has proposed the certification and testing requirements pursuant to 40 CFR Parts 1033, 1042, 1043, & 1060. Each engine or locomotive family must be certified by EPA and covered by a Certificate of Conformity. Certification is the process by which the manufacturer demonstrates to EPA that its products will meet the applicable emission standards throughout their useful lives; as part of this process, manufacturers must provide test data showing that the locomotives and engines comply with applicable emission standards. The facility stated they must submit quarterly production test results and annual production and credit reports to EPA for all three programs (locomotives, marine engines, & stationary engines).

VOC Analysis:
Existing VOC Control Technologies for Source 132A, Source 132B, Source 132C, Source 132D, & Source 132E:
- None

Existing VOC Control Technologies for Source 140:
- None

Additional VOC Control Technologies:

- Thermal Oxidation
- Catalytic Oxidation
- Adsorption
- Absorption (Scrubber)

Ranking of Available Control Technologies:

- Thermal Oxidation – 95% - 99% for inlet loading concentrations above 500 ppmv
- Catalytic Oxidation – 90% - 98%
- Adsorption – 75% - 95%
- Absorption – 70% - 99%

Evaluation of Technical Feasibility:

- Thermal Oxidation – The VOC air stream is heated to several hundred degrees above the auto-ignition temperature of the organic compounds being oxidized (generally ~ 1,650F). The high efficiency listed is due to high inlet loading concentrations. As the inlet loading decreases, the efficiency also decreases but typically meet 20 ppmv outlet concentration.
  - Not feasible for Cells 1 – 5 because of low inlet VOC concentration which would require supplemental fuel to raise exhaust gas temperature to the required level. This will result in an increase in NO_x emissions.
  - Not feasible for Vented Cleaning Operations because of low inlet VOC concentration which would require supplemental fuel to raise exhaust gas temperature to the required level. This will result in an increase in NO_x emissions.
- Catalytic Oxidation – A catalyst is used to promote oxidation of the inlet gas stream at lower temperatures (600F to 1,200F) than required in thermal oxidation. Destruction efficiency is more sensitive to inlet concentration than thermal incineration due to mixing and limited contact time.
  - Not feasible for Cells 1 - 5 because of low inlet VOC concentration near that of catalytic oxidation performance.
  - Not feasible for Vented Cleaning Operations because of low inlet VOC concentration which would require supplemental fuel to raise exhaust gas temperature to the required level. This will result in an increase in NO_x emissions.
- Adsorption – This is the selective transfer of one or more components of a gas mixture onto the surface of the pores of a solid sorbent (usually activated carbon). The adsorbed VOC is desorbed by the addition of heat and the VOCs collected for reuse or disposal. Depending on type of system, outlet concentrations typically range from 50 to 100 ppmv VOCs for inlet concentrations on the order of 1,000 ppmv for continuous operations and 20 ppmv independent of the inlet concentration (but no greater than 25% of LEL) for a canister system.
  - Not feasible for Cells 1 – 5 because during maximum operation of the test cell, the VOC concentration is expected to be less than 25 ppmv; therefore, there would be minimal removal.
  - Not feasible for Vented Cleaning Operations because of water content in the exhaust and low inlet VOC concentrations.
- Absorption – Scrubbers combine rapid gas absorption by use of pressure drop and excellent gas and liquid distribution using either water or a chemical solution to provide a liquid scrubbing liqueur.

- Not feasible for Cells 1 – 5 because most of the inlet VOC is predominantly non-oxidized hydrocarbons (not soluble or at best only slightly soluble in water) and a low inlet VOC concentration.
- Not feasible for Vented Cleaning Operations because of low inlet VOC concentrations.

Ranking of the Technically Feasible Control Technologies:
- Not required because no control technologies are feasible.

Evaluation of Cost Effectiveness of each Control Technology:
In the preamble to the RACT II regulations, the Department indicated that $3,500/ton of NO_x removed and $7,000/ton of VOCs removed was deemed the upper-bound cost-effectiveness threshold and applying these new thresholds does not have an effect on the add-on control technology decisions for the presumptive RACT requirements established in the final-form rule-making (Pennsylvania Bulletin, Vol. 46, No. 17, April 23, 2016 page 2044). Based on all the additional VOC control technologies not being technically feasible, cost effectiveness was not required. However, the facility did conduct an economic analysis for Catalytic Oxidation due to the availability of cost information associated with this control technology. The cost analysis conducted for Catalytic Oxidation for Cells 1, 2, & 3 was $156,089/ton based on PTE of 4.62 tpy for each cell. The cost analysis conducted for Catalytic Oxidation for Cell 4 was $193,116/ton based on PTE of 4.62 tpy. The cost analysis conducted for Catalytic Oxidation for Cell 5 was $719,512/ton based on PTE of 1.24 tpy. Based on the cost analysis, Catalytic Oxidation would be deemed to be not cost-effective for Cells 1 - 5 if the cost analysis was required. Because the cost analysis wasn't required, a VOC limit equal to the PTE for the cells is not required for RACT II.

VOC Conclusion:
For Source 132A, Source 132B, Source 132C, Source 132D, & Source 132E, no additional control technologies are deemed RACT II.

For Source 140, no additional control technologies are deemed RACT II.

Conditions:
The facility operating permit should include the following:

1. For Source 132A, Source 132B, Source 132C, Source 132D, & Source 132E, no additional NO_x and/or VOC control technologies are deemed RACT II.
2. For Source 140, no additional VOC control technologies are deemed RACT II.
3. NO_x emissions from Source 132A shall not exceed 413 tons per 12-month rolling period. Fuel combustion in Source 132A shall not exceed 2,007,537 gallons per 12-month rolling period.
4. NO_x emissions from Source 132B shall not exceed 413 tons per 12-month rolling period. Fuel combustion in Source 132B shall not exceed 2,007,537 gallons per 12-month rolling period.
5. NO_x emissions from Source 132C shall not exceed 435 tons per 12-month rolling period. Fuel combustion in Source 132C shall not exceed 1,829,089 gallons per 12-month rolling period.
6. NO_x emissions from Source 132D shall not exceed 450.25 tons per 12-month rolling period. Fuel combustion in Source 132D shall not exceed 2,319,458 gallons per 12-month rolling period.
7. NO_x emissions from Source 132E shall not exceed 36.88 tons per 12-month rolling period. Fuel combustion in Source 132E shall not exceed 478,180 gallons per 12-month rolling period.

8. The NO_x emissions shall not exceed 450.25 tpy based on a 12-consecutive month rolling total for Diesel Engine Test Cells 1 – 4.
9. Fuel consumption shall not exceed 2,319,458 gal/yr based on a 12-consecutive month rolling total for Diesel Engine Test Cells 1 – 4.
10.
    a) The NO_x emissions shall not exceed 422.15 lb/hr based on a 30-consecutive calendar day rolling average for Diesel Engine Test Cells 1 – 4 combined.
    b) The 30-day rolling average emission rate shall be expressed in pounds per hour and calculated in accordance with the following procedure:
        1) Sum the total pounds of pollutants emitted from test cells 1 – 4 for the current operating day and the previous 29 operating days.
        2) Sum the total hours of operation for test cells 1 – 4 for the current operating day and the previous 29 operating days.
        3) Divide the total number of pounds of pollutants emitted by test cells 1 – 4 for the 30 operating days by the total hours of operation of test cells 1 – 4 for the 30 operating days.
    c) A 30-day rolling average emission rate shall be calculated for each consecutive operating day.
    d) Each 30-day rolling average emission rate for an affected air contamination source must include the emissions that occur during the entire operating day, including emissions from start-ups, shutdowns, and malfunctions.
11.
    a) The facility shall conduct a source test in accordance with 25 Pa. Code Chapter 139 (relating to sampling and testing methods and procedures) on:
        1) Any new engine type within 90 days of the manufacturing and testing; and
        2) A single engine that is not certified by U.S. EPA and/or subject to U.S. EPA emissions standards at least once per permit term.
    b) A pretest protocol shall be submitted to the Department (Regional Office) for approval.
    c) Within 60 days of the approval of the test protocol, the source test will be conducted in accordance with the preapproved test protocol to determine compliance with the NO_x emission limit.
    d) The permittee shall notify the Department at least two (2) weeks prior to the test.
12. The permittee shall record the following and make available to Department personnel upon request:
    a) Engine production volume each month
    b) Type and horsepower rating of engines tested each month
    c) Fuel consumption of engines tested each month
    d) NO_x emission factors derived from EPA Tier Rating, equivalent published emission factors, testing done in compliance with the testing requirement in this section of the permit, or other Department approved emission factors.
13. The permittee shall calculate the following information monthly:
    a) NO_x and VOC emissions (tpy) based on a 12-consecutive month rolling period
    b) NO_x emissions (lb/hr) based on a rolling 30-day average
    c) Fuel consumption based on a 12-consecutive month rolling period
14. In accordance with §129.99(g), the emission limit and requirements specified in the plan approval or operating permit issued by the Department or appropriate approved local air pollution control agency under subsection (f) supersede the emission limit and requirements in the existing plan approval or operating permit issued to the owner or operator of the source prior to April 23, 2016, on the date specified in the plan approval or operating permit issued by the Department or appropriate approved

local air pollution control agency under subsection (f), except to the extent the existing plan approval or operating permit contains more stringent requirements.

15. In accordance with §129.100(d), the owner and operator of an air contamination source subject to this section and §§129.96-129.99 shall keep records to demonstrate compliance with §§129.96-129.99.
16. In accordance with §129.100(i), records shall be retained by the owner or operator for 5 years and made available to the Department or appropriate approved local air pollution control agency upon receipt of a written request from the Department or appropriate approved local air pollution control agency.

Summary:

This RACT II Proposal was submitted to EPA (Planning) on March 27, 2018, and received on March 27, 2018, to begin their comment period ending on April 20, 2018. EPA (Planning) submitted comments on this RACT II Proposal on April 13, April 19, & April 20, 2018, and the Department responded to those comments on April 23, 2018 with the exception of short-term limits. Based on EPA comments, the Department requested information from the company with regards to short-term limits on April 23, 2018, via phone call and on May 14, 2018, via email. The company responded on May 25, 2018. The Department responded to EPA comments from April 20, 2018, with regards to short-term limits on June 20, 2018. EPA stated: "it looks like you got everything" on June 20, 2018. The draft RACT II Proposal went to the company on October 23, 2017. The company submitted comments on November 15, 2017, and additional comments on January 12, 2018, and the Department responded to those comments on January 16, 2018. The company submitted additional comments on January 29, 2018, and the Department responded to those comments on February 12, 2018. The company submitted additional comments on March 15, 2018, and the Department responded to those comments on March 27, 2018, via phone call. The company didn't submit any additional comments.

cc: New Source Review - Hrsbg.
File AQ/FAC//RACT/43-000-196 thru L. McNabb
New Castle District Office – thru D. Dyll
EPA Region 3