

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AIR QUALITY PROGRAM

TITLE V/STATE OPERATING PERMIT			
Issue Date:	January 31, 2018	Effective Date: January 31, 2018	
Expiration Date:	2		
In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to operate the air emission source(s) more fully described in this permit. This Facility is subject to all terms and conditions specified in this permit. Nothing in this permit relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.			
The regulatory or statutory authority for each permit condition is set forth in brackets. All terms and conditions in this permit are federally enforceable applicable requirements unless otherwise designated as "State-Only" or "non-applicable" requirements.			
TITLE V Permit No: 25-00025			
Federal Tax Id - Plant Code: 14-0689340-1			
Owner Information			
Name: GE			
Mailing Addre	ss: BLDG 9 RM 201		
	2901 E LAKE RD ERIE, PA 16531-0001		
Plant Information			
Plant: GE T	RANSPORTATION/ERIE PLT		
Location: 25	Erie County	25805 Lawrence Park Township	
SIC Code: 3743	Manufacturing - Railroad Equ	ipment	
	e ang zata shi ta ta	Responsible Official	
Name: MICH	AEL J BRATT		
Title: ERIE	PLANT MGR		
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Permit Contact Person			
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Title: ENVIRONMENTAL MGR			
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[Signature] Encla. Kustafee			
ERIC A. GUSTAFSON, NORTHWEST REGION AIR PROGRAM MANAGER			

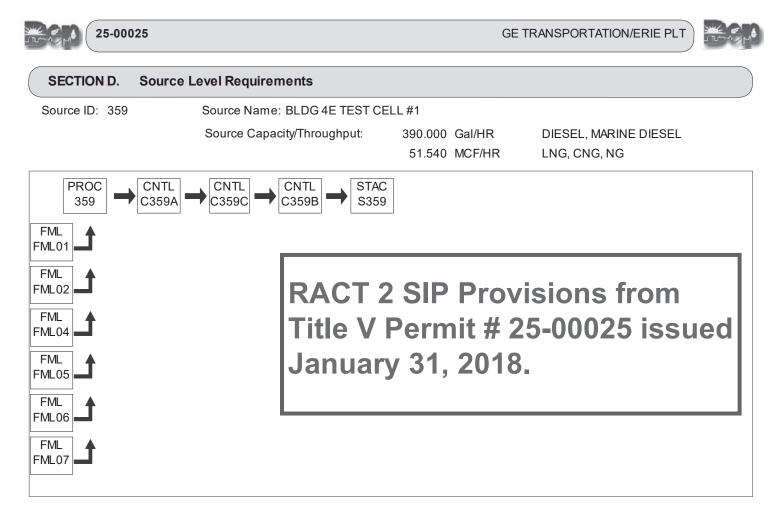
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Pages 2 through 91 are redacted.

The contents of pages 2 through 91 do not apply to this RACT 2 SIP submittal.



I. RESTRICTIONS.

Emission Restriction(s).

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The following air contaminant emission limits are approved for the 3 engine test cells (Source 359, 361, & 364) located in Building 4E and area 10-K, combined.

(1) The company shall limit the emissions of nitrogen oxides (calculated as NO2) to 341.8 tons, or less, in any 12 consecutive month rolling period.

(2) The company shall limit the emissions of carbon monoxide (CO) to 29.4 tons, or less, in any 12 consecutive month rolling period.

(3) The company shall limit the emissions of sulfur dioxide (SO2) to 73.2 tons, or less, in any 12 consecutive month rolling period.

(4) The company shall limit the emissions of particulate matter to 12.7 tons, or less, in any 12 consecutive month rolling period.

(5) The 12-month period emission limit for the pollutants listed above includes the emissions from start ups and shutdowns.

[From Plan Approval 25-025W, Section D, Condition # 004 of Sources 359, 361, and 364.]

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The following short term air contaminant emission limits are approved for each test cell.

(1) The company shall limit the emissions of ammonia to 10 ppmdv, or less.





(2) The company shall limit the emissions of nitrogen oxides (calculated as NO2) to 7.40 grams per brake horsepower per hour.

(3) The company shall limit the emissions of carbon monoxide (CO) to 3.73 grams per brake horsepower per hour.

(4) The company shall limit the emissions of sulfur dioxide (SO2) to 6.40 grams per brake horsepower per hour.

(5) The company shall limit the emissions of particulate matter (filterable and condensable) to 0.45 grams per brake horsepower per hour.

(6) The company shall limit the emissions of volatile organic compounds to 0.55 grams per brake horsepower per hour. The volatile organic compounds shall be calculated as methane.

(7) Compliance with the short term emission limits shall be determined by the average of the 3 runs conducted during the stack test that is required by this plan approval.

(8) The short term emission limits apply at all times except during start up and shutdown periods.

[From Plan Approval 25-025W, Section D, Condition # 005 of Source 359 and from Plan Approval 25-025T, Section D, Condition # 005 of Source 359]

Fuel Restriction(s).

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The company shall limit the sulfur content of the fuel combusted in the engine to a maximum of 2.0 percent, by weight.

(b) If the company would like to combust fuel greater than 2.0 percent, by weight, the company shall apply to the Department, in writing, at least 10 days prior to combusting the fuel. In no event shall the concentration of sulfur dioxide in the exhaust stack exceed 500 ppm, by volume, dry basis.

The company shall demonstrate that the concentration of sulfur dioxide does not exceed 500 ppm, by volume, dry basis, by mass balance.

(c) The test cells may also use ULSD (ultra low sulfur diesel - 15 ppm sulfur), LNG (liquid natural gas), CNG (compressed natural gas), or NG (natural gas).

[From Plan Approval 25-025W, Section D, Condition # 006 of Source 359. Also from Plan Approval 25-025T; Section D; Condition # 006 for Source 359.]

Throughput Restriction(s).

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The company shall limit the amount of fuel combusted in the three test cells (Source 359, 361, & 364) to a combined 11,000,000 gallons in a 12-month rolling period.

(b) LNG/CNG/NG fuel use will be converted to gallon equivalents of #2 oil on a BTU basis for purposes of demonstrating compliance with the fuel limitation.

[From Plan Approval 25-025W, Section D, Condition # 007 of Sources 359, 361, and 364.] [Compliance with this plan approval throughput restriction assures compliance with the August 10, 2017, approval of the 25 Pa. Code § 129.99 Caseby-case alternative RACT II proposal for Source 359.]





II. TESTING REQUIREMENTS.

005 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[The requirement for initial stack testing is a one-time requirement which has already been met. The requirements are from Plan Approval 25-025W, Section D, Condition # 008 of Source 359. And also from Plan Approval 25-025O; Section D; Condition # 008 for Source 359.]

[The initial stack tests were conducted as follows:

Initial stack testing on Source 359 was conducted on 1/31/2012 & 2/1/2012 in accordance with plan approval 25-025Q (which was preceded by plan approval 25-025O and superseded by plan approvals 25-025T and 25-025W). Reference the Department Source Test Review Memo of December 12, 2012.]

III. MONITORING REQUIREMENTS.

006 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The company shall, prior to the testing of the engine and at the end of the testing, monitor the amount of fuel combusted.

[From Plan Approval 25-025W, Section D, Condition # 010(a) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 011(a) for Source 359.]

(b) The company shall continuously monitor the pH of the scrubbing liquid of the cloud chamber when an engine is operating in the test cell.

[From Plan Approval 25-0250; Section D; Condition # 011(b) for Source 359. Also from Plan Approval 25-025W; Section D; Condition # 010(b) for Source 359.]

(c) [Reserved. This condition was removed in plan approval 25-025W.]

(d) The company shall continuously monitor the temperature of the influent to the selective catalyst reduction system (Tri-Mer system) when an engine is operating in the test cell.

[From Plan Approval 25-0250; Section D; Condition # 011(e) for Source 359. Also from Plan Approval 25-025W; Section D; Condition # 010(e) for Source 359.]

(e) The company shall continuously monitor the temperature of the oxidation catalyst when an engine is operating in the test cell. The temperature monitor for the influent to the SCR required in part (d) will be accepted as representative of the oxidation catalyst.

[From Plan Approval 25-025W, Section D, Condition # 010(e) of Source 359.]

(f) The company shall, at least once per day, during daylight hours, when an engine is operating in the test cell, perform a Method 22-like visual observation to determine if there are any visible emissions from the stack of the test cell. If any emissions are detected by a Method 22-like procedure, a Method 9 test shall be performed immediately. If a Method 9 certified observer is not available at the time emissions are detected by the Method 22-like procedure, the Method 9 test shall be performed within 24-hours, except that the Method 9 test may be performed within 48 hours if emissions are detected on a Saturday, Sunday, or holiday. If a Method 9 test cannot be performed immediately, the rationale for testing at a later time shall be documented and these records kept for a period of five years. The Department shall be notified, in writing, of any such occurrence immediately.

• The approved frequency is Method 22 like visual observation at least once per 24 hour period when in operation and Method 9 if emissions are detected by Method 22 like visual observation.

[From Plan Approval 25-025W, Section D, Condition # 010(f) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 011(g) for Source 359.]





(g) [Reserved]

IV. RECORDKEEPING REQUIREMENTS.

007 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Sufficient data shall be recorded so that compliance with the conditions in this Plan Approval can be determined. Records shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

[From Plan Approval 25-025W, Section D, Condition # 011 of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012 for Source 359.]

008 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The company shall keep a copy of the manufacturer's specifications for:

- (1) the cloud chamber;
- (2) the oxidation catalyst;
- (3) the selective catalytic reduction system;
- (4) [Reserved. This paragraph was removed with plan approval 25-025W.]

[From Plan Approval 25-025W, Section D, Condition # 011(a) of Source 359.]

(b) The company shall, on a monthly basis, keep a record of the fuel combusted in each test cell.

[From Plan Approval 25-025W, Section D, Condition # 011(b) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012(b) of Source 359.]

(c) The company shall keep a record of the weight percentage of sulfur in the fuel being combusted in the test cell. When the fuel is natural gas, this condition may be satisfied by demonstrating that the natural gas combusted is pipeline natural gas from a natural gas distribution utility.

[From Plan Approval 25-025W, Section D, Condition # 011(c) of Source 359. Also from Plan Approval 25-025T; Section D; Condition # 012(c) of Source 359.]

(d) The company shall keep a record of the type of fuel that is combusted in each engine.

[From Plan Approval 25-025W, Section D, Condition # 011(d) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012(d) of Source 359.]

(e) The company shall keep a copy of an analysis of the fuel when that fuel is not derived from petroleum. The analysis of the fuel shall consist of:

(1) weight percent of sulfur;

(2) ash content; and,

(3) higher heating value, on a per gallon basis.

[From Plan Approval 25-025W, Section D, Condition # 011(e) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012(e) for Source 359.]



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(f) The company shall keep a record of:

(1) the date that engine started operation in the test cell;

(2) the date that the engine ceased operation in the test cell;

(3) the total amount of time that the engine operated in the test cell;

(4) the time that the engine started operation in the test cell;

(5) [Reserved. This paragraph was removed with plan approval 25-025W.]

(6) the time that the SCR catalyst achieved the minimum operating temperature.

[From Plan Approval 25-025W, Section D, Condition # 011(f) of Source 359. Also from Plan Approval 25-025T; Section D; Condition # 012(f) of Source 359.]

(g) The company shall keep a record of any mass balance calculation(s) for sulfur dioxide to demonstrate that the shortterm emission limit for sulfur dioxide has not been exceeded.

[From Plan Approval 25-025W, Section D, Condition # 011(g) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012(g) of Source 359.]

(h) The company shall keep a copy of the results of the stack testing required by this plan approval.

[From Plan Approval 25-025W, Section D, Condition # 011(h) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 012(h) of Source 359.]

(i) [Reserved. This paragraph was removed with plan approval 25-025W.]

(j) [Reserved.]

009 [25 Pa. Code §129.100]

Compliance demonstration and recordkeeping requirements.

In accordance with § 129.100(d), the owner and operator of an air contamination source subject to this section and § § 129.99 shall keep records to demonstrate compliance with § § 129.99 in the following manner:

(1) The records must include sufficient data and calculations to demonstrate that the requirements of § § 129.99 are met.

(2) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

010 [25 Pa. Code §129.100]

Compliance demonstration and recordkeeping requirements.

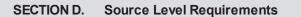
The records shall be retained by the owner or operator for 5 years and made available to the Department or appropriate approved local air pollution control agency upon receipt of a written request from the Department or appropriate approved local air pollution control agency.

[From 129.100(i)]

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this permit including Section B (Title V General Requirements).





VI. WORK PRACTICE REQUIREMENTS.

011 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The permittee shall maintain the following parameters within their prescribed ranges.

(1) The range for the SCR (Selective catalytic reduction) influent temperature shall be 550 to 800 °F. The temperature range may be amended upon the company demonstrating that the temperature range is different during operation. The new temperature range will be incorporated in to the facility's operating permit.

(2) Liquid recirculation rate.

(i) The minimum scrubbing liquid recirculation rate for the Preconditioning Chamber (PCC) of the Cloud Chamber System (CCS) shall be 1,140 gpm, based upon the manufacturer specification.

(ii) The minimum scrubbing liquid recirculation rate for the Cloud Generation Vessel (CGV) of the Cloud Chamber System (CCS) shall be 720 gpm, based upon the manufacturer specification.

(3) pH of the scrubbing liquid.

(i) The range of scrubbing liquid pH for the PCC shall be 5.5 to 12, based upon the manufacturer specification.

(ii) The range of scrubbing liquid pH for the CGV shall be 4.5 to 12, based upon the manufacturer specification.

[From Plan Approval 25-025T, Section D, Source 359, Condition # 013(a). Also from Plan Approval 25-025W, Section D, Source 359, Condition # 012(a) as amended with the December 21, 2017, Addendum Memo to the 12/14/17 plan approval inspection report.]

(b) The company shall operate the cloud chamber, oxidation catalyst, and selective catalytic reduction system any time an engine is being operated in the test cell.

[From Plan Approval 25-0250, Section D, Source 359, Condition # 013(d). Also from Plan Approval 25-025W, Section D, Source 359, Condition # 012(b).]

(c) [Reserved. This paragraph was removed in Plan Approval 25-025W, Section D, Source 359, Condition # 012(c).]

012 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The company shall install, operate and maintain the engine test cell, cloud chamber, oxidation catalyst, and selective catalytic reduction system in accordance with the manufacturer's specifications as well as good air pollution control practices.

[From Plan Approval 25-025W, Section D, Condition # 013(a) of Source 359. Also from Plan Approval 25-025O; Section D; Condition # 014(a) for Source359.]

(b) [Reserved. This paragraph was removed with Plan Approval 25-025W, Section D, Condition # 013(b) of Source 350.]

013 [25 Pa. Code §129.99]

Alternative RACT proposal and petition for alternative compliance schedule.

The facility shall limit test cell engine idle to the extent possible under a given research and development test plan.

[From August 10, 2017, approval of Case-by-case alternative RACT II proposal.]

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this permit including Section B (Title V General Requirements).





Page 98 through 114 are redacted.

The contents of pages 98 through 114 do not apply to this RACT 2 SIP submittal.





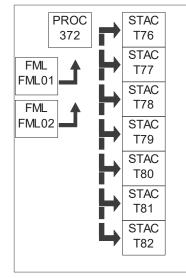
Source ID: 372

Source Name: ENGINE TEST LAB, 7 TEST CELLS (A-G) (BLDG 18E)

Source Capacity/Throughput:

300.000 Gal/HR

DIESEL, MARINE DIESEL



RACT 2 SIP Provisions from Title V Permit # 25-00025 issued January 31, 2018.

I. RESTRICTIONS.

Emission Restriction(s).

001 [25 Pa. Code §123.13]

Processes

No person may permit the emission into the outdoor atmosphere of particulate matter from any process in a manner that the concentration of particulate matter in the effluent gas exceeds 0.04 grain per dry standard cubic foot.

002 [25 Pa. Code §123.21]

General

No person may permit the emission into the outdoor atmosphere of sulfur oxides from a source in a manner that the concentration of the sulfur oxides, expressed as SO2, in the effluent gas exceeds 500 parts per million, by volume, dry basis.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Annual emission rate from all diesel engine testing in Building 18 shall not exceed the following based on a 12 consecutive month rolling average.

(a) NOx 214 tpy

(b) CO 87 tpy

(c) SOx 28 tpy

[From plan approval 25-399-025A]

004 [25 Pa. Code §129.97]

Presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule.

This NOx emission restriction of 0.10 lb per million Btu heat input applies exclusively to Test Cell A of Source 372.

[From 129.97(g)(1)(i)]

(g) Except as specified under subsection (c), the owner and operator of a NOx air contamination source specified in this subsection, which is located at a major NOx emitting facility or a VOC air contamination source specified in this subsection,





which is located at a major VOC emitting facility subject to § 129.96 may not cause, allow or permit NOx or VOCs to be emitted from the air contamination source in excess of the applicable presumptive RACT emission limitation:

(1) A combustion unit or process heater:

(i) For a natural gas-fired combustion unit or process heater with a rated heat input equal to or greater than 50 million Btu/hour, 0.10 lb NOx/million Btu heat input.

[Test Cells B, C, D, E, F, G of Source 372 are subject to the Alternative RACT which was petitioned and approved in compliance with § 129.99. The emission restriction for Test Cells B, C, D, E, F, & G are printed in a separate condition in this section of the permit.]

005 [25 Pa. Code §129.99]

Alternative RACT proposal and petition for alternative compliance schedule.

NOx emissions from Source 372 shall not exceed the following:

- (1) 214 tpy for each full engine test cell; and
- (2) 214 tpy for the single cylinder test cell.

[From August 10, 2017, approval of Case-by-case alternative RACT II proposal.]

Throughput Restriction(s).

006 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The maximum annual diesel fuel consumption for Engine testing (Building 18) shall be limited to 1,100,000 gallons.

(b) Annual fuel consumption shall be based upon a quarterly rolling average.

[From condition #3 of plan approval PA 25-399-025A issued July 24, 1995. Compliance with this plan approval throughput restriction assures compliance with the August 10, 2017, approval of 25 Pa. Code § 129.99 Case-by-case alternative RACT II proposal for Source 372.]

II. TESTING REQUIREMENTS.

007 [25 Pa. Code §127.441]

Operating permit terms and conditions.

(a) If the permittee is conducting emissions testing using the same testing protocol previously approved by the Department, submission of a new protocol prior to testing is not required.

(b) The permittee shall submit notification to the Department's Northwest Regional Office of the proposed test date and reference the previously approved protocol in the notification.

(c) The permittee shall also reference the previously approved protocol in the submission of the report of test results.

[This operating permit condition is derived from a September 18, 2013, email from David A. Clark, DEP AQ Source Testing, to James Verderese, GE Transportation, with copies emailed to Rick Begley and John Guth at the DEP.]

[The approved test protocol for Source 372 prepared by Steven Brockel of U. S. Nels, Inc., on February 25, 2013, was received by the Northwest Regional Office on March 12, 2013, and is filed in file GE Transp Sys Erie AQ/Facilities/Case/25-000-00025. A revision to the protocol (to use average F Factor and Heating Value) was approved in a January 14, 2016, email from David A. Clark to Steven Brockel of U. S. Nels, Inc., with copies emailed to James Verderese at GE and Lori McNabb at the DEP. The revision is detailed in a January 13, 2016, email from Steven Brockel to David Clark. Copies of these emails are also filed in NWRO file GE Transp Sys Erie AQ/Facilities/Case/25-000-00025.]

008 [25 Pa. Code §127.511]

Monitoring and related recordkeeping and reporting requirements.





The permittee shall perform semi-annual portable analyzer testing for NOx, CO, & SOx in accordance with a preapproved testing protocol.

[Compliance with this condition assures compliance with the RACT II testing requirement of 25 Pa. Code §0129.100(a)(4).]

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this permit including Section B (Title V General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

009 [25 Pa. Code §127.511]

Monitoring and related recordkeeping and reporting requirements.

The permittee shall maintain monthly records of the following:

(a) Diesel fuel consumption

(b) NOx emissions

(c) CO emissions

(d) SOx emissions

010 [25 Pa. Code §129.100]

Compliance demonstration and recordkeeping requirements.

In accordance with § 129.100(d), the owner and operator of an air contamination source subject to this section and § § 129.99 shall keep records to demonstrate compliance with § § 129.99 in the following manner:

(1) The records must include sufficient data and calculations to demonstrate that the requirements of § § 129.99 are met.

(2) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

011 [25 Pa. Code §129.100]

Compliance demonstration and recordkeeping requirements.

The 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.

[From 129.100(i)]

V. REPORTING REQUIREMENTS.

012 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) Annual emissions shall be based upon a quarterly rolling average.

(b) The company shall submit quarterly reports indicating the NOx, CO, and SOx emissions for the diesel engine testing.

(c) Annual emissions shall be updated by adding emissions during the more recent quarter and dropping the emissions of the corresponding quarter in the preceding year.

[From condition # 6 of plan approval PA-25-399-025A issued July 24, 1995.]



013 [25 Pa. Code §127.441]

Operating permit terms and conditions.

Emission reports shall be submitted to the Department within 30 days of the end of each calendar quarter.

[Authority for this condition is derived from 25 PA Code § 129.92]

VI. WORK PRACTICE REQUIREMENTS.

014 [25 Pa. Code §127.441]

Operating permit terms and conditions.

The permittee shall install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices.

[Compliance with this operating permit conditions for all test cells of this source assurance compliance the presumptive RACT requirement of § 129.97(c)(3) for Turbo Charger Test Cell A]

015 [25 Pa. Code §129.99]

Alternative RACT proposal and petition for alternative compliance schedule.

The facility shall limit test cell engine idle to the extent possible under a given research and development test plan.

[From August 10, 2017, approval of Case-by-case alternative RACT II proposal.]

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this permit including Section B (Title V General Requirements).

*** Permit Shield in Effect. ***



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Pages 119 through 259 are redacted.

The contents of pages 119 through 259 do not apply to this RACT 2 SIP submittal.