

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Piedmont Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

Industrial Power Generating Company, LLC
Dinwiddie Plant
25505 Weakly Road, Petersburg, VA
Permit No. PRO-51083

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Industrial Power Generating Company, LLC (INGENCO) has applied for a Title V Operating Permit for its Dinwiddie Plant facility. The Virginia Department of Environmental Quality (the Department) has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: _____ Date:
Ashby Robert Scott
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Air Permit Manager: _____ Date:
James E. Kyle, P.E.

Deputy Regional Director: _____ Date:
Kyle Ivar Winter, P.E.

FACILITY INFORMATION

Permittee

Industrial Power Generating Company, LLC
2250 Dabney Rd.
Richmond, VA 23230

Facility

INGENCO Dinwiddie Plant
25505 Weakly Road,
Petersburg, VA 23803

Responsible Official

Mr. Charles J. Packard

Contact Person

Mr. Robert L. Greene, PhD
Environmental Compliance Manager
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County-Plant Identification Number: 053-0087

SOURCE DESCRIPTION

NAICS ID# 221119 - Other Electrical Power Generation
SIC Code: 4931-Electrical Power Generation

The facility is an 11.9 MW power generation facility consisting of 34 Detroit Diesel Series 60 engines each coupled with a 350 kW generator. Industrial Power Generating Company, LLC (INGENCO), Dinwiddie Plant is one of several facilities in the region operated by INGENCO Distributed Energy. The Dinwiddie Plant is approved to burn multiple fuels which include Numbers 1 and 2 distillate fuel oil, Number 4 fuel oil or natural gas. The facility is located in an ozone maintenance and NO_x control area at the time of public notice. The INGENCO Dinwiddie Plant is a major source for NO_x and CO emissions and permitted emissions for all pollutants are below PSD applicability levels. The facility is currently permitted under the following permits: A Title V Operating Permit initially issued on December 22, 2005 and a minor NSR minor amendment permit issued on March 30, 2012 which superseded the minor NSR permit issued October 5, 2005. The March 30, 2012 revision of the minor NSR permit removed the Mineral Oil Dielectric Fluid as an approved fuel in the engines. The current permit action pertains to the

renewal of the Title V Operating Permit.

An application for permit renewal was received on March 19, 2010 by the Virginia Department of Environmental Quality (the Department) and was deemed administratively complete March 26, 2010.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was conducted on April 21, 2011. In addition, all reports and other data required by permit conditions or regulations, which are submitted to the Department, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Reference No.	Stack Id.	Equipment Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
E1 – E34	S-1 through S-7	Thirty-four (34) Detroit Diesel Model 6063-TK35 dual-fuel diesel engines, each driving a 350 kW generator; arranged in one group of ten engines in Building D1 and six groups of four engines in Building D2. Building D1 has one exhaust stack, S1, with S1 serving group E1-E10. Building 2 has a separate exhaust stack, S2-S7, for each group of four engines with S2 serving group E11-E14, etc.	550 HP and 3.57 MMBtu/hr heat input each; total for 34 engines, 121.4 MMBtu/hr heat input.	N/A Passive controls: air-to-fuel ratio control, turbo-charging, custom built after coolers and charge-air cooling systems, engine control modules.	–	NO _x , CO, SO _x , VOC, PM, PM-10	March 30, 2012

*The Size/Rated capacity and PCD efficiency are provided for informational purposes only, and are not applicable requirement.

EMISSIONS INVENTORY

A copy of the 2010 annual emission update is attached. Emissions are summarized in the following tables.

2010 Actual Emissions

Criteria Pollutant Emissions in tons/year					
Emission Unit	PM / PM ₁₀ / PM _{2.5}	CO	NO _x	SO ₂	VOC
34 Dual-fuel Diesel Engines	6.10	5.30	45.70	1.90	8.50

EMISSION UNIT APPLICABLE REQUIREMENTS - [Emission Units E1-E34]

The Title V emission unit requirements are taken from the following: a minor NSR permit amendment dated March 30, 2012, superseding the modified minor NSR permit dated October 5, 2005.; 40 CFR Part 63 MACT Subpart ZZZZ, Standards of Performance for Reciprocating Internal Combustion Engines (RICE MACT) and 9 VAC 5-80-50 et seq., Part II-Article 1 Federal Operating Permits for Stationary Sources. The facility is subject to 9 VAC 5 Chapter 50-Part II-Article 1 New and Modified Stationary Sources Standards of Performance for Visible Emissions and Fugitive Dust/Emissions (Rule 5-1). Virginia has not currently accepted delegation to enforce the RICE MACT.

Limitations:

1. The minimum height of the building D1 and D2 generator stacks is designated in condition III.A.1; from Condition 2 of the minor NSR permit dated March 30, 2012
2. Emissions of NO_x from the engines are limited in Conditions III.A.2, III.A.3, and III.A.4 by using passive controls inherent to the design of the engines and standard operating practices; from Conditions 3, 4, and 5 of the minor NSR permit, dated March 30, 2012.

3. Control of sulfur dioxide emissions by combustion of natural gas whenever the engines are operated in dual fuel mode or by combustion of low sulfur fuel when liquid fuels are burned is required in Condition III.A.5; from Condition 6 of the minor NSR permit dated March 30, 2012
4. Carbon Monoxide emissions from the engines are limited in Condition III.A.6 by using standard operating practices regulated by devices inherent to the design of the engines; from Condition 7 of the minor NSR permit, dated March 30, 2012.
5. Particulate Matter and Volatile Organic Compounds emissions from the 34 dual-fuel diesel engines are limited in Condition III.A.7 by using good operation and maintenance practices; from Condition 8 of the minor NSR permit, dated March 30, 2012.
6. Condition III.A.8 lists the approved fuels for the engines; from Condition 13 of the minor NSR permit, dated March 30, 2012.
7. The formula and associated variables for calculating the NO_x and CO emissions based on the type of, ratio of liquid fuel to natural gas, and quantity of fuels used, to prevent either criteria pollutant from exceeding the permit limits of 240 tpy or PSD thresholds, is defined in Condition III.A.9; from Condition 14 of the minor NSR permit, dated March 30, 2012.
8. The minimum fuel specifications to be used in the engines are defined in Condition III.A.10; from Condition 15 of the minor NSR permit, dated March 30, 2012.
9. Emissions of criteria pollutants from each engine on a pound of pollutant per million BTU basis are limited by Condition III.A.11. Compliance with the established limits will be determined by stack testing of the engines; from Condition 17 of the minor NSR permit, dated March 30, 2012.
10. Visible emissions from the engines' stacks are limited to 10% opacity when operated in single fuel mode and 20% opacity when operated in dual fuel mode by Condition III.A.12; from Condition 19 of the minor NSR permit, dated March 30, 2012.
11. As stated in 40 CFR 63 Subpart ZZZZ Table 2b(1), Table 2b(2) and Table 2d(3) the concentration of CO in the stationary RICE exhaust shall be limited to 49 ppmvd at 15% O₂; or a reduction of CO emissions by 70% or more are required by Condition III.A.13, after the RICE MACT, Subpart ZZZZ compliance date of May 3, 2013.

Compliance Assurance Monitoring (CAM)

Generally, the requirements of 40 CFR 64, CAM, apply to each emissions unit meeting all three of the following criteria on a pollutant-by-pollutant basis:

- The unit emits or has the potential to emit (in the absence of add-on control devices) quantities of one or more regulated air pollutants that exceed major source thresholds,
- The unit is subject to one or more emission limitations for the regulated air pollutants for which it is major before control, and
- The unit uses a control device to achieve compliance with one or more of these emission limitations.

The INGENCO Dinwiddie facility does not meet the third of these requirements as the 34 dual-fuel diesel engines do not have add-on control devices and rely instead on passive controls inherent to the design of the generators.

Periodic Monitoring and Recordkeeping

The EPA periodic monitoring guidance, dated September 18, 1998, states periodic monitoring is required for each emission point at a source, subject to Title V of the Act, which is subject to an applicable requirement. The INGENCO Dinwiddie facility emission units are applicable to MACT Subpart ZZZZ, for the 34 dual-fuel diesel generators, and the associated monitoring and recordkeeping requirements from the MACT Subpart ZZZZ standard.

Periodic monitoring for the INGENCO Dinwiddie facility emission units has been determined to consist of obtaining fuel supplier certifications, records to demonstrate compliance with good operating practices, and adhering to a maintenance schedule, all of which are described in State Regulations.

1. Condition III.B.1 requires the continuous measurement and recording of the quantity of each type of allowable fuel consumed by each engine and the proper installation, maintenance, calibration and operation of each monitoring device; from Condition 9 of the minor NSR permit, dated March 30, 2012.
2. Condition III.B.2 requires the continuous measurement of the inlet charge-air temperature for each engine and the proper installation, maintenance, calibration and operation of each monitoring device; from Condition 10 of the minor NSR permit, dated March 30, 2012.
3. Condition III.B.3 requires the monitoring devices used to measure fuel consumption in the dual fuel engines by observed after each period of continuous operation when

using liquid fuel, or in dual fuel mode, and again when the engines have ceased operating. A log must be kept of the daily observations of the monitoring devices; from Condition 11 of the minor NSR permit, dated March 30, 2012.

4. Hourly observation of devices used to measure the inlet charge-air temperature for each engine while in operation and a daily log of these observations are required by Condition III.B.4; from Condition 12 of the minor NSR permit, dated March 30, 2012.
5. Condition III.B.5 describes how the opacity limits for the engines will be monitored by having a monthly opacity observation schedule providing a reasonable assurance of compliance with the applicable opacity limits; from Condition 24 of the minor NSR permit, dated March 30, 2012.
6. Condition III.C.1 requires fuel certifications from suppliers of all fuel oils; from Condition 16 of the NSR permit, dated March 30, 2012.
7. Condition III.C.2 includes the requirements for maintaining records of all emissions monitoring and operating parameters and testing required by the permit; from Condition 20 of the minor NSR permit, dated March 30, 2012.
8. Condition III.C.3 includes the recordkeeping requirements listed in 40 CFR 63.6655(a-c), §63.6655(e)(3) and Table 6 (9.a.ii).

Testing

1. Condition III.D.1 requires performance tests to demonstrate compliance with NO_x, CO and PM-2.5 emission limits after commencement of using distillate oil in the engines; from Condition 21 of the minor NSR permit, dated March 30, 2012.
2. Condition III.D.2 requires VEE to be performed concurrent with the performance test being conducted in Conditions III.D.1; from Condition 22 of the minor NSR permit, dated March 30, 2012.
3. Condition III.D.3 requires each set of engines, consisting of one set of ten engines (E1-E10) and six sets of four engines (E11-E34), to be performance tested in continual rotation so that every set is tested every Title V Permit term; from Condition 23 of the minor NSR Permit, dated March 30, 2012.
4. Condition III.D.4 requires the operator to provide testing and monitoring ports and use appropriate test method(s) in accordance with procedures approved by the Department; from Condition 25 of the NSR Permit, dated March 30, 2012.

5. Condition III.D.5 requires the facility to perform initial performance tests to demonstrate compliance with the requirement to reduce CO emissions in 40 CFR 63 Subpart ZZZZ within 180 days of the compliance date of May 13, 2013.
6. Condition III.D.6. requires the facility to conduct subsequent performance tests using the criteria in Condition III.D.5 every 8760 hours of engine operation or 3 years, whichever comes first.

Reporting

1. Condition III.E.1 requires written notification of the anticipated and actual dates of any modification or change to any of the engine control modules and subsequent start up dates for the modified engines; from Condition 26 of the minor NSR permit, dated March 30, 2012.
2. Notification for any removal of the engines passive control equipment is required by Condition III.E.2; from Condition 27 of the minor NSR permit, dated March 30, 2012.
3. Condition III.E.3 incorporates by reference submission of the notifications in 40 CFR §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h).

Streamlined Requirements

Conditions 30-36 of the minor NSR permit, dated March 30, 2012, have been streamlined out as they duplicate the general conditions of the Title V permit for the facility.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been

delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-09”.

This general condition cite(s) the Article(s) that follow(s):
Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80.
Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires notification of malfunction and excess emissions within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits for New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits for Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications

Locating in Nonattainment Areas

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on General Condition F.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

9 VAC 5-60-70. Designated Emissions Standards

9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the

State and have been identified as applicable by the applicant:

9 VAC 5-50-310, Odorous Emissions

INAPPLICABLE REQUIREMENTS

The Existing Source Rule 4-8, NSPS Subpart IIII, Compliance Assurance Monitoring, Title V Greenhouse Gas Tailoring Rule, Phase 1 and Subpart Kb do not apply to the facility. In addition, certain portions of MACT Subpart A do not apply. An explanation for the determination is provided in the following:

Existing Source Rule 4-8 does not apply (9 VAC 5-40-880)

“E. The provisions of this article do not apply to stationary internal combustion engines.”

NSPS Subpart IIII does not apply until the diesel engines are modified in accordance with 40 CFR 60, NSPS Subpart IIII. The engine configuration and controls were last set by the minor NSR permit dated March 30, 2012

“Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

What This Subpart Covers § 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section.

For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines,

(ii) The model year listed in table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. “

“(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.”

Compliance Assurance Monitoring, 40 CFR Part 64, does not apply to the facility as the CI RICE do not have add-on pollution control devices.

Title V Greenhouse Gas Tailoring Rule, Phase 1, currently 40 CFR Parts 51, 52, 70 and 71, do not apply to the facility as it is an existing source not currently subject to PSD for any pollutant. There are no applicable GHG permitting requirements.

NSPS Subpart Kb does not apply based on the size of the tanks, largest being 32,000 gallons, and from recordkeeping requirements as revised on October 13, 2003.

Certain MACT Subpart A requirements do not apply to the Dinwiddie Plant. The inapplicable sections are 40 CFR Part 63.6(d), 63.6(e), 63.6(h), 63.7(e)(1), 63.8(a)(4), 63.8(c)(5), 63.9(d), 63.10(b)(2)(i)-(v), 63.10(d)(3), 63.1(e)(2)(ii), 63.10(e)(4), and 63.11.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A.4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

COMPLIANCE PLAN

There is no compliance plan for the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
T-1	Fuel oil storage tank	5-80-720 B.	VOC	11,000 gallons
T-2	Fuel oil storage tank	5-80-720 B.	VOC	11,000 gallons
T-3	Fuel oil storage tank	5-80-720 B.	VOC	17,000 gallons
T-4	Fuel oil storage tank	5-80-720 B.	VOC	17,000 gallons
T-5	Fuel oil storage tank	5-80-720 B.	VOC	15,000 gallons
T-6	Fuel oil storage tank	5-80-720 B.	VOC	15,000 gallons
T-7	Fuel oil storage tank	5-80-720 B.	VOC	15,000 gallons
T-8	Fuel oil storage tank	5-80-720 B.	VOC	16,000 gallons

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Petersburg-Dinwiddie Monitor from April 11, 2012 to May 11, 2012.