



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor  
C. Stephen Allred, Director

May 18, 2004

**Certified Mail No. 7099 3220 0009 1975 3314**

Ronald H. Guymon, Director  
Environmental Compliance, INEEL  
P.O. Box 1625  
Idaho Falls, Idaho 83415

Subject: Facility ID No. 023-00001, TRA, INEEL  
Final Permit to Construct

Dear Mr. Guymon:

The Idaho Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) Number P-000534 for three diesel-fired generators at the Test Reactor Area of the Department of Energy's Idaho National Engineering and Environmental Laboratory in accordance with IDAPA 58.01.01.200 through 228 (*Rules for the Control of Air Pollution in Idaho*). This permit is effective immediately and is based on your permit application materials received on December 15, 2000, May 31, 2001, and February 27, 2003.

This permit does not release the Department of Energy from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

A representative of the Idaho Falls Regional Office will contact you regarding a meeting with DEQ to discuss the permit terms and requirements. DEQ recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any operations staff responsible for day-to-day compliance with permit conditions.

Please be advised that the general provision notification requirements in Section 4 of the PTC are not applicable.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to call Michael Simon at (208) 373-0212 to address any questions or concerns you may have with the enclosed permit.

Sincerely,

A handwritten signature in cursive script that reads "Martin Bauer".

Martin Bauer, Administrator  
Air Quality Division

MB/MJS/bf

Permit No. P-000534

Enclosures

c: Sherry Davis, Air Quality Division  
Rensay Owen, Regional Office  
Mike Stambulis, Permit Writer – Tech Services  
Mike Simon, Permit Coordinator  
Marilyn Seymore/Pat Rayne, AFS  
Laurie Kral, EPA Region 10  
Permit Binder  
Phyllis Heitman, (Ltr Only)  
Reading File (Ltr Only)



## Table of Contents

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE.....	3
1. PERMIT TO CONSTRUCT SCOPE .....	4
2. TRA GENERATORS.....	5
3. EMISSIONS INVENTORY .....	8
4. PERMIT TO CONSTRUCT GENERAL PROVISIONS.....	9

## Acronyms, Units, and Chemical Nomenclature

AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
ATR	Advanced Test Reactor
Btu	British thermal unit
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb	pounds
m	meter(s)
MMBtu	million British thermal units
NO <sub>x</sub>	nitrogen oxides
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PTC	permit to construct
PTE	potential to emit
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SIC	Standard Industrial Classification
SO <sub>2</sub>	sulfur dioxide
TRA	Test Reactor Area
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b>	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators	023-00001	

**1. PERMIT TO CONSTRUCT SCOPE**

***Purpose***

The purpose of this PTC limit an emissions increase from three diesel-powered generators at the facility to below Prevention of Significant Deterioration limits.

***Regulated Sources***

Table 1.1 lists all sources of regulated emissions in this PTC.

**Table 1.1 REGULATED EMISSIONS SOURCES**

<b>Permit Section</b>	<b>Source Description</b>	<b>Emissions Control(s)</b>
2	Unit ID: 670-M-42, diesel-powered generator Manufacturer: Enterprise Engine and Machinery Co. Rating: 2,118 hp Model: DSQ-38 ; Serial Number: 63003	None
2	Unit ID: 670-M-43, diesel-powered generator Manufacturer: Enterprise Engine and Machinery Co. Rating: 2,118 hp Model: DSQ-38 ; Serial Number 63002	None
2	Unit ID: 674-M-6, diesel-powered generator Manufacturer: Caterpillar Rating: 2,132 hp Model: 3516 ; Serial Number 25Z00569	None

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b>	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators	023-00001	

**2. TRA GENERATORS**

**2.1 Process Description**

The Test Reactor Area (TRA) utilizes three electrical generator units (Units 674-M-6, 670-M-42, and 670-M-43) powered by large stationary diesel engines. The primary purpose of the TRA generators is to provide electrical power to the Advanced Test Reactor (ATR) and/or TRA during normal operations, off-normal operations, and emergency operation.

**2.2 Emissions Control Description**

Emissions from the Units 674-M-6, 670-M-42, and 670-M-43 are exhausted directly to the atmosphere.

***Emissions Limits***

**2.3 Emissions Limit**

The combined NO<sub>x</sub> emissions from the 674-M-6, 670-M-42, and 670-M-43 generator stacks shall not exceed the emissions rate limit listed in Table 2.1 in any consecutive 12-month period.

**Table 2.1 TRA GENERATORS EMISSIONS LIMIT**

Source Description	NO <sub>x</sub>
	T/yr
Combined Emissions – TRA Generators	119.5

**2.4 Opacity Limit**

Emissions from the generator stacks, or any other stack, vent, or functionally equivalent opening associated with the generators, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

***Operating Requirements***

**2.5 Generator Fuel Type**

The permittee shall only combust Grade 1 and/or Grade 2-distillate fuel oil (diesel fuel) in the three generators.

**2.6 Generator Fuel Usage Limits**

The maximum annual combined throughput of fuel oil to the 674-M-6, 670-M-42, and 670-M-43 generators shall not exceed 544,522 gallons per consecutive 12-month period.

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b>	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators	023-00001	

**2.7 Fuel Oil Sulfur Content**

The sulfur content in the No. 1 fuel oil (ASTM Grade 1) supplied to the three generators shall not exceed 0.3% by weight as required in IDAPA 58.01.01.728.

The sulfur content in the No. 2 fuel oil (ASTM Grade 2) supplied to the three generators shall not exceed 0.5% by weight as required in IDAPA 58.01.01.728.

***Monitoring and Recordkeeping Requirements***

**2.9 Performance Testing**

Notwithstanding General Provision 6, within 12 months from the issuance date of this permit, the permittee shall conduct two performance tests to measure NO<sub>x</sub> emissions from the 674-M-6 stack and either the 670-M-42 or 670-M-43 stack using EPA Reference Method 7 or 7E. The results of the test will be used to verify the NO<sub>x</sub> emission factor for these units. The tests shall be conducted while the permittee is combusting ASTM Grade 2 fuel oil. This performance test, and any subsequent performance test, shall be performed in accordance with IDAPA 58.01.01.157 and the following requirements:

- Visible emissions shall be observed during each performance test run using the methods specified in IDAPA 58.01.01.625.
- The throughput of diesel fuel to the generator being tested shall be recorded in gallons per hour during each performance test run.

The results of the NO<sub>x</sub> testing shall be reported in pounds emitted per million British thermal units (lb/MMBtu) of fuel to compare with the NO<sub>x</sub> emission factor (3.2 lb/MMBtu) used to establish the emissions limit in Permit Condition 2.3.

**2.10 Fuel Usage Monitoring**

For each month, the permittee shall monitor and record the aggregate throughput of fuel oil to generators 674-M-6, 670-M-42, and 670-M-43 for that month and for the most recent consecutive 12-month period. A compilation of the most recent five years of records shall be kept onsite and shall be made available to DEQ representatives upon request.

***Reporting Requirements***

**2.11 Performance Test Protocol**

The permittee is encouraged to submit a test protocol to DEQ for approval at least 30 days prior to the performance test required in Permit Condition 2.9 to DEQ for approval at least 30 days prior to the test days. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the test does not satisfy the testing requirements.

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b> 023-00001	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators		

**2.12 Performance Test Report**

The permittee shall submit a report of the results of the performance test required in Permit Condition 2.9, including all required process data, to DEQ within 30 days after the date on which the stack sampling is concluded.

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b>	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators	023-00001	

**3. EMISSIONS INVENTORY**

The following table is a summary of the emission increases and decreases associated with this new permit. The emissions inventory table is provided for informational purposes only.

**Table 3.1 EMISSIONS INVENTORY**

<b>Pollutant</b>	<b>Annual Emissions Increase (T/yr)</b>	<b>Annual Emissions Decrease (T/yr)</b>	<b>Change in Annual Emissions (T/yr)</b>
NO <sub>x</sub>	39.5	0	39.5
SO <sub>2</sub>	6.2	0	6.2
CO	10.5	0	10.5
PM/PM <sub>10</sub>	1.2	0	1.2
VOC	1.1	0	1.1
TAPS/ HAPS	0.02	0	0.02
Total:	57.4	0	57.4

\* TAPS/HAPS = toxic air pollutants / hazardous air pollutants

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b> 023-00001	<b>Date Issued:</b> May 18, 2004
<b>Location:</b> TRA – Diesel-Powered Generators		

**4. PERMIT TO CONSTRUCT GENERAL PROVISIONS**

1. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the *Rules for the Control of Air Pollution in Idaho*. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the *Rules for the Control of Air Pollution in Idaho*, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq., and the permittee is subject to penalties for each day of noncompliance.
2. The permittee shall at all times (except as provided in the *Rules for the Control of Air Pollution in Idaho*) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.
3. The permittee shall allow the Director, and/or the authorized representative(s), upon the presentation of credentials:
  - To enter, at reasonable times, upon the premises where an emissions source is located, or in which any records are required to be kept under the terms and conditions of this permit.
  - At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack compliance testing in conformance with IDAPA 58.01.01.157 when deemed appropriate by the Director.
4. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.
5. The permittee shall notify DEQ, in writing, of the required information for the following events within five working days after occurrence:
  - Initiation of Construction - Date
  - Completion/Cessation of Construction - Date
  - Actual Production Startup - Date
  - Initial Date of Achieving Maximum Production Rate - Production Rate and Date
6. If compliance testing is specified, the permittee must schedule and perform such testing within 60 days after achieving the maximum production rate, and not later than 180 days after initial startup. This requirement shall be construed as an ongoing requirement. The permittee shall not operate the source without testing within 180 days. If testing is not conducted within 180 days after initial startup, then each day of operation thereafter without the required compliance test constitutes a violation. Such testing must **strictly** adhere to the procedures outlined in IDAPA 58.01.01.157 and shall not be conducted on weekends or state holidays without prior written approval from DEQ.

**AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-000534**

<b>Permittee:</b> Department of Energy – Idaho Operations Office	<b>Facility ID No.</b>	<b>Date Issued: May 18, 2004</b>
<b>Location:</b> TRA – Diesel-Powered Generators	023-00001	

Testing procedures and specific time limitations may be modified by DEQ by prior negotiation if conditions warrant adjustment. DEQ shall be notified at least 15 days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to DEQ upon request.

7. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
8. In accordance with IDAPA 58.01.01.123, all documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.