



State of New Mexico  
**ENVIRONMENT DEPARTMENT**



Air Quality Bureau  
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Santa Fe, NM 87505  
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**CERTIFIED MAIL NO. 7004 0750 0001 3310 2445**  
**RETURN RECEIPT REQUESTED**

Permittees:

Owner: US Department of Energy  
Operator: Los Alamos National Security, LLC  
Los Alamos National Laboratory  
☐ Box 1663, MS J978  
Los Alamos, New Mexico 87545

NSR Air Quality Permit No. 2195-P  
Technical Area - 33  
TEMPO No. 856 – PRN 20060014  
AIRS No. 35-028-0001

Company Official:

Dianne Wilburn  
Group Leader

\_\_\_\_\_  
Jim Norton  
Division Director  
Environmental Protection Division

\_\_\_\_\_  
Date of Issuance

Air Quality Permit No. **2195-P** is issued by the Air Quality Bureau of the New Mexico Environment Department (Department) to Los Alamos National Laboratory (“LANL”) pursuant to the Air Quality Control Act (Act) and regulations adopted pursuant to the Act including Title 20, Chapter 2, Part 72 of the New Mexico Administrative Code (NMAC), (20.2.72 NMAC), Construction Permits and is enforceable pursuant to the Act and the air quality control regulations applicable to this source.

This permit authorizes the construction and operation of three electrical generator engines at Technical Area 33. The function of the generator engines is to provide electricity for experiments in support of classified research. The generator engines are located in Township 19 North, Range 6



East, Section 22 approximately one mile east of the entrance to Bandelier National Monument in Los Alamos County, New Mexico.

The Department has reviewed the permit application for the proposed construction and has determined that the provisions of the Act and ambient air quality standards will be met. Conditions have been imposed in this permit to assure continued compliance. 20.2.72.210.D NMAC, states that any term or condition imposed by the Department on a permit is enforceable to the same extent as a regulation of the Environmental Improvement Board.

Pursuant to 20.2.75.11 NMAC, the Department will assess an annual fee for this facility. This regulation set the fee amount at \$1,500 through 2004 and requires it to be adjusted annually for the Consumer Price Index on January 1. The current fee amount is available by contacting the Department or can be found on the Department’s website. The AQB will invoice the permittee for the annual fee amount at the beginning of each calendar year. This fee does not apply to sources which are assessed an annual fee in accordance with 20.2.71 NMAC. For sources that satisfy the definition of “small business” in 20.2.75.7.F NMAC, this annual fee will be divided by two.

All fees shall be remitted in the form of a corporate check, certified check, or money order made payable to the “NM Environment Department, AQB” mailed to the address shown on the invoice and shall be accompanied by the remittance slip attached to the invoice.

**TOTAL EMISSIONS**

The total potential emissions from this facility, excluding exempted activities, are shown in the following table. Emission limitations for individual units are shown in Specific Condition 2.

**Total Potential Criteria Pollutant Emissions from Entire Facility (for information only, not an enforceable condition):**

| Pollutant                                                   | Emissions (tons per year) |
|-------------------------------------------------------------|---------------------------|
| Nitrogen Oxides (NO <sub>x</sub> )                          | 3                         |
| Carbon Monoxide (CO)                                        | < 2                       |
| Volatile Organic Compounds (VOC)                            | < 1                       |
| Sulfur Dioxide (SO <sub>2</sub> )                           | < 1                       |
| Particulate Matter – total suspended (TSP)                  | < 1                       |
| Particulate Matter less than 10 microns (PM <sub>10</sub> ) | < 1                       |

**SECTION I: SPECIFIC CONDITIONS**

Pursuant to 20.2.72 NMAC, and the specific regulatory citations in parenthesis, the facility is subject to the following conditions.

1. Construction and Operation  
(20.2.72 NMAC)

a. The equipment regulated by this permit consists of

Table 1.1: Regulated Equipment List

| Unit No. | Make Model       | Serial No. | Capacity | Manufacture Date | Unit Description |
|----------|------------------|------------|----------|------------------|------------------|
| 1        | Kohler 20EORZ    | 2025460    | 20 KW    | 02/05            | Diesel Generator |
| 2        | Kohler 20EORZ    | 2025461    | 20 KW    | 02/05            | Diesel Generator |
| 3        | Caterpillar 3306 | 6PK01065   | 225 KW   | 10/99            | Diesel Generator |

b. Each generator engine is authorized to operate 5  hours per calendar year.

c. Each generator engine shall be certified to compliance with applicable non-road emission standards in 40 CFR Part 89.

d. This facility is subject to all applicable requirements including, but not limited to, the following regulations:

Table 1.2: applicable requirements

| Citation     | Title                                  |
|--------------|----------------------------------------|
| 20.2.7 NMAC  | Excess Emissions During Malfunction    |
| 20.2.61 NMAC | Smoke and Visible Emissions            |
| 20.2.72 NMAC | Construction Permits                   |
| 20.2.73 NMAC | NOI & Emissions Inventory Requirements |
| 20.2.75 NMAC | Construction Permit Fees               |

2. Emission Limits (20.2.72.210  NMAC, paragraphs A and B.1 & 20.2.61 NMAC)

Table 2.1: Allowable Emissions

| Unit No | SO <sub>2</sub> |       | PM10  |       | NO <sub>x</sub> <sup>1</sup> |      | CO  |      | VOCs |      |
|---------|-----------------|-------|-------|-------|------------------------------|------|-----|------|------|------|
|         | pph             | tpy   | pph   | tpy   | pph                          | tpy  | pph | tpy  | pph  | tpy  |
| 1       | Negl.           | Negl. | Negl. | Negl. | 0.83                         | 0.21 | 0.2 | 0.06 | 0.07 | 0.02 |
| 2       | Negl.           | Negl. | Negl. | Negl. | 0.83                         | 0.21 | 0.2 | 0.06 | 0.07 | 0.02 |
| 3       | 0.62            | 0.16  | Negl. | Negl. | 9.33                         | 2.33 | 5.7 | 1.4  | 0.75 | 0.20 |

<sup>1</sup> Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO<sub>2</sub>



a. Visible Emissions

Each generator engine shall not permit, cause, suffer or allow visible emissions to equal or exceed twenty (20) percent opacity.

3. Monitoring  
(20.2.72.210.C NMAC)

a. During initial daily cold startup of each generator engine, the permittee shall determine compliance with permit condition 2.a using USEPA Method 9 for a minimum of ten (10) minutes.

i) Corrective action shall be taken for all instances when visible emissions are exceeded as defined by permit condition 2.a.



ii) The monitoring requirement shall be reduced to one time per year for each generator engine demonstrating compliance with permit condition 2.a during four consecutive startups.

4. Recordkeeping  
(20.2.72.210.E NMAC)

The permittee shall generate and maintain the following records:

- a. Annual total hours of operation for each generator engine every calendar year.
- b. Opacity readings for each generator engine cold startup and corrective action to address visible emission exceedances.



For each generator engine, a copy of the engine certification to the applicable non road emission standards in 40 CFR Part 89.

5. Reporting  
(20.2.72 NMAC, Sections 210 and 212; NSPS 40 CFR 60)

The permittee shall report:

- a. Excess emissions during malfunction, startup, shutdown, or scheduled maintenance in accordance with 20.2.7 NMAC.



6. Compliance Testing

(20.2.72 NMAC Sections 210.C and 213)

- a. Initial compliance tests are required for Unit 3 to demonstrate compliance with the nitrogen dioxide and carbon monoxide limits in Specific Condition 2. Compliance test requirements from previous permits (if any) are still in effect, unless the tests have been satisfactorily completed. Compliance tests may be re-imposed if it is deemed necessary by the Department to determine whether the source is in compliance with applicable regulations or permit conditions.
- b. These tests shall be conducted within sixty (60) days after unit three achieves maximum normal production. If the maximum normal production rate does not occur within one hundred twenty (120) days of Unit 3's startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of unit 3.
- c. The tests shall be conducted in accordance with EPA Reference Methods 1 through 4, Method 7E for NO<sub>x</sub>, Method 10 for CO and Method 9 for visible emissions as contained in 40 CFR 60, Appendix A, and with the requirements of Subpart A, General Provisions, 60.8(f). Alternative test method(s) may be used if the Department approves the change. The results of the NO<sub>x</sub> tests shall be expressed as nitrogen dioxide (NO<sub>2</sub>) using a molecular weight of 46 lb/lb mole in all calculations (each ppm of NO/NO<sub>2</sub> is equivalent to  $1.194 \times 10^{-7}$  lb/SCF).

If you have questions about this permit please call Michael Schneider of the AQB New Source Review (NSR) Unit in Santa Fe at (505) 827-1494, extension 8000.

Enclosure: Industry/Consultant Feedback Questionnaire with envelope

**SECTION II: GENERAL CONDITIONS**1. **Reporting**

(20.2.72 NMAC Sections 210 and 212)

- a) The Permittee shall notify the Department in writing of or provide the Department with:
  - i) the anticipated date of initial startup of each new or modified source not less than thirty (30) days prior to the date;
  - ii) the equipment serial number and the actual date of initial startup of each new or modified source within fifteen (15) days after the startup date;
  - iii) the date when each new or modified emission source reaches the maximum production rate at which it will operate within fifteen (15) days after that date;
  - iv) any change of operators within fifteen (15) days of such change;
  - v) any necessary update or correction no more than sixty (60) days after the operator knows or should have known of the condition necessitating the update or correction of the permit.

2. **Revisions and Modifications**

(20.2.72 NMAC Sections 200.A.2 and E, and 210.B.4)

Any future physical changes or changes in the method of operation may constitute a modification as defined by 20.2.72 NMAC, Construction Permits. Unless the source or activity is exempt under 20.2.72.202 NMAC, no modification shall begin prior to issuance of a permit.

Changes in plans, specifications, and other representations stated in the application documents shall not be made if they cause a change in the method of control of emissions or in the character of emissions, or will increase the discharge of emissions. Any such proposed changes shall be submitted as a revision or modification.

Modifications or revisions to this permit shall be processed in accordance with 20.2.72 NMAC.

3. Notification to Subsequent Owners  
(20.2.72 NMAC Sections 7.P.1 and 212.C)

The permit and conditions apply in the event of any change in control or ownership of the facility. No permit modification is required in such case. However, in the event of any such change in control or ownership, the permittee shall notify the succeeding owner of the permit and conditions and shall notify the Department of the change in ownership within fifteen (15) days of that change.

Any new owner or operator shall notify the Department, within thirty (30) days of assuming ownership, of the new owner's or operator's name and address.

4. Right to Access Property and Review Records  
(NMSA 1978, Section 74-2-13)

The Department shall be given the right to enter the facility at all reasonable times to verify the terms and conditions of this permit. The company, upon either a verbal or written request from an authorized representative of the Department, shall produce any records or information necessary to establish that the terms and conditions of this permit are being met.

5. Posting/Retention of the Permit

A copy of this permit shall be posted at the plant site or retained at the plant site at all times and shall be made available to Department personnel for inspection upon request.

6. Permit Cancellations  
(20.2.72 NMAC)

a. The Department shall automatically cancel any permit for any source which ceases operation for five (5) years or more, or permanently. Reactivation of any source after the five (5) year period shall require a new permit.

b. The Department may cancel a permit if the construction or modification is not commenced within two (2) years from the date of issuance or if, during the construction or modification, work is suspended for a total of one (1) year.

7. Pursuant to 20.2.72.210 A NMAC, the contents of a permit application specifically identified by the Department shall become the terms and conditions of the permit or permit revision. Unless modified by conditions of this permit, the applicant shall construct or modify and operate the facility in accordance with all representations of the application and supplemental submittals that the Department relied upon to determine compliance with applicable regulations and ambient air quality standards. If the Department relied on air

quality modeling to issue this permit, any change in the parameters used for this modeling shall be submitted to the Department for review. Upon the Department's request, the applicant shall submit additional modeling for review by the Department. Results of that review may require a permit modification.

8. Prior to any asbestos demolition or renovation work, the permittee shall determine whether 40 CFR 61 Subpart M, National Emissions Standards for Asbestos applies.
9. For engines or turbines equipped with catalytic converters and/or air-fuel ratio (AFR) controllers, or similar device which performs the same function of maintaining appropriate air and fuel ratios, records shall be made and maintained by the owner or operator for a period of at least two (2) years from the date of generation and a summary of quarterly reports shall be submitted to the Department annually, which:
  - a. For each AFR controlling type device, demonstrate that the manufacturer's or supplier's recommended maintenance is performed, including replacement of oxygen sensor as necessary for oxygen-based controllers. Verification of proper operation of the controller shall be demonstrated at least quarterly by measuring and recording exhaust oxygen or NO<sub>x</sub> concentrations with a properly calibrated portable analyzer as specified in the most current version of the SOP for "Use of Portable Analyzers in Performance Tests".
  - b. For any engine equipped with a non-selective catalytic converter, demonstrate the maintenance of the NO<sub>x</sub> and CO reduction efficiency across the catalyst bed. This test shall be performed within ninety (90) days following initial startup and on a quarterly basis thereafter, unless an alternative testing schedule is specified by the department. Properly calibrated portable analyzers are acceptable for this demonstration. The test shall be conducted at ninety percent (90%) or greater of full load and shall include the exhaust volume flow rate (dscf) and the NO<sub>x</sub> and CO emission rate (lb/hr). (20. 2.72 NMAC, Section 210.B(4)).
  - c. For any engine equipped with a selective catalytic converter, demonstrate the maintenance of the CO reduction efficiency across the catalyst bed. This test shall be performed within ninety (90) days following initial startup and on a quarterly basis thereafter, unless an alternative testing schedule is specified by the department. Properly calibrated portable analyzers are acceptable for this demonstration. The test shall be conducted at ninety percent (90%) or greater of full load and shall include the exhaust volume flow rate (dscf) and the NO<sub>x</sub> and the CO emission rate (lb/hr). (20. 2.72 NMAC, Section 210.B(4)).
10. For engines equipped with catalytic converters, the engine shall not be operated without the catalytic converter, specifically including catalyst maintenance periods. During periods of catalyst maintenance, the permittee shall either (1) shut down the engine(s); or (2) replace

the catalyst with a functionally equivalent spare to allow the engine to remain in operation.

11. Any engine equipped with a catalytic converter shall also have an AFR controlling device, or similar device that performs the same function of maintaining an appropriate air-fuel ratio. Engines equipped with oxidation catalysts are not required to operate with an AFR.
12. Flares used to as control devices to comply with any NSPS (40 CFR Part 60) or NESHAP (40 CFR Part 61) requirement shall be tested in accordance with the requirements contained in 40 CFR 60, Subpart A, General Provisions, paragraph 60.8 (performance tests) and 60.18 (general control device requirements). Flares used as control devices to comply with any MACT requirement (40 CFR Part 63) shall be tested in accordance with the requirements contained in 40 CFR 63, Subpart A, General Provisions, Section 63.7 (performance tests) and 63.11 (general control device requirements).
13. Except as provided in the Specific Conditions, records shall be maintained on-site for a minimum of two (2) years from the time of recording and shall be made available to Department personnel upon request. Sources subject to 20.2.70 NMAC "Operating Permit" shall maintain records on-site for a minimum of five (5) years from the time of recording.
14. If this permit requires any compliance testing, the owner or operator shall notify the Department at least thirty (30) days prior to the test date and allow a representative of the Department to be present at the test. The permittee shall submit a testing protocol to the Department at least thirty (30) days prior to the test date and shall observe the following testing procedures:
  - a. The test protocol and compliance test report shall conform to the standard format specified by the Department. The most current version of the format may be obtained from the Enforcement and Compliance Section of the Air Quality Bureau.
  - b. Pursuant to 20.2.72.210.C NMAC, for combustion sources with stacks, the permittee shall also provide a one-quarter (1/4) inch stainless steel sampling line adjacent to the sampling ports and extending down to within four (4) feet above ground level to provide access for future audits. The line shall extend into the stack a distance of 1/4 the stack diameter, but not less than one inch from the stack wall. The sampling line shall be maintained clear of blockage at all times. This line shall be in place at the time of any required compliance tests. For any source for which compliance tests are not required or for previously existing sources this line shall be installed no later than one hundred and eighty (180) days from the date of this permit.
  - c. As an alternative, the owner or operator may provide a portable sampling line that is readily available which allows the Department to safely obtain representative stack gas samples at the time of compliance audits or site inspections.

- d. A physical configuration of the facility that conforms to the emissions testing requirements of 20.2.72.210.C NMAC and of 40 CFR 60.8(e), which is imposed under the authority of 20.2.72.210.C.4 NMAC.
15. Unless stated otherwise in this permit or another applicable regulation, pipeline quality natural gas shall be defined as a naturally occurring fluid mixture of hydrocarbons that contains 20.0 grains or less of total sulfur per 100 standard cubic feet (SCF) and is either composed of at least 70% methane by volume or has a gross calorific value of between 950 and 1100 Btu per standard cubic foot.
16. “*Daylight*” is defined as the time period between sunrise and sunset, as defined by the Astronomical Applications Department of the U.S. Naval Observatory. (Data for one day or a table of sunrise/sunset for an entire year can be obtained at <http://aa.usno.navy.mil/>. Alternatively, these times can be obtained from a Farmers Almanac or from <http://www.almanac.com/rise/>).

### **ADDITIONAL REQUIREMENTS**

Applications for permit revisions and modifications shall be submitted to:

Program Manager, Permits Section  
New Mexico Environment Department  
Air Quality Bureau  
2048 Galisteo  
Santa Fe, New Mexico 87505

Compliance test protocols, regularly scheduled reports, a copy of the test results, and excess emission reports, shall be submitted to:

Program Manager, Compliance and Enforcement Section  
New Mexico Environment Department  
Air Quality Bureau  
PO Box 26110  
Santa Fe, New Mexico 87502-0110

### **REVOCATION**

The Department may revoke this permit if the applicant or permittee has knowingly and willfully misrepresented a material fact in the application for the permit. Revocation will be made in writing, and an administrative appeal may be taken to the Secretary of the Department within thirty (30)

days. Appeals will be handled in accordance with the Department's Rules Governing Appeals From Compliance Orders.

### **APPEAL PROCEDURES**

20.2.72.207.F NMAC provides that any person who participated in a permitting action before the Department and who is adversely affected by such permitting action, may file a petition for hearing before the Environmental Improvement Board. The petition shall be made in writing to the Environmental Improvement Board within thirty (30) days from the date notice is given of the Department's action and shall specify the portions of the permitting action to which the petitioner objects, certify that a copy of the petition has been mailed or hand-delivered and attach a copy of the permitting action for which review is sought. Unless a timely request for hearing is made, the decision of the Department shall be final. The petition shall be copied simultaneously to the Department upon receipt of the appeal notice. If the petitioner is not the applicant or permittee, the petitioner shall mail or hand-deliver a copy of the petition to the applicant or permittee. The Department shall certify the administrative record to the board. Petitions for a hearing shall be sent to:

Environmental Improvement Board  
1190 St. Francis Drive, Runnels Bldg.  
P.O. Box 26110  
Santa Fe, New Mexico 87502