20.2.70 NMAC Operating Permit Renewal Application

for

Los Alamos National Laboratory

Operated by:

Los Alamos National Security, LLC
Los Alamos National Laboratory
Los Alamos, New Mexico 87544

Owned by:

U.S. Department of Energy
National Nuclear Security Administration
Office of Los Alamos Site Operations
Los Alamos, New Mexico 87544

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Los Alamos National Laboratory
2008 Title V Renewal Application
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LIST of ACRONYMS and ABBREVIATIONS

CAA	Clean Air Act
CAM	Compliance Assurance Monitorng
CEM	continuous emission monitor
CFC	chlorofluorocarbons
CO	carbon monoxide
DLE	Dry Low Emission
DOE	Department of Energy
EIB	Environmental Improvement Board
EPA	Environmental Protection Agency
FFCA	Federal Facility Compliance Agreement
FGR	flue gas recirculation
FIRE	Factor Information Retrieval
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HCFC	hydrochlorofluorocarbons
HCl	hydrochloric acid
HE	high explosive
HEPA	high-efficiency particulate air
HVAC	heating, ventilation, and air conditioning
kW	kilowatts
LANL	Los Alamos National Laboratory
lbs/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
MMscf	million standard cubic feet
MOU	Memorandum of Understanding
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMAAQS	New Mexico Ambient Air Quality Standards
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
NO_2	nitrogen dioxide
NOI	Notice of Intent
NON	Notice of Non-compliance
NO_x	nitrogen oxides
NSPS	New Source Performance Standard
NSR	New Source Review
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
PNM	Public Service Company of New Mexico
PSD	Prevention of Significant Deterioration
QAP	Quality Assurance Plan
QAPP	Quality Assurance Project Plan
R&D	research and development
SEM	Security Engineered Machinery

SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOCMI	Synthetic Organic Chemicals Manufacturing Industry
SO_x	sulfur oxides
TA	Technical Area
tpy	tons per year
TSP	total suspended particulates
VOC	volatile organic compound

EXECUTIVE SUMMARY

This permit renewal application is submitted by Los Alamos National Laboratory (LANL or the Laboratory) for renewing LANL's Title V operating permit pursuant to 20.2.70 NMAC – Operating Permits. Title V of the federal 1990 Clean Air Act Amendments requires facilities defined as major stationary sources to obtain comprehensive air quality operating permits that include all air quality requirements applicable to the source. An operating permit is separate and in addition to air quality construction permits, which are issued for new projects or modifications.

LANL obtained a Title V operating permit, P100 on April 30, 2004, that will expire on April 30, 2009. In compliance with 20.2.70.300 NMAC, LANL is submitting this permit application 12 months prior to the expiration date.

LANL is owned by the Department of Energy/National Nuclear Security Administration and operated by Los Alamos National Security, LLC. The Laboratory is a scientific institution dedicated to research and development (R&D) in nuclear weapons science and technology and national problems in energy, environment, infrastructure, and health security. Air emissions predominantly come from operations that support R&D activities, such as power and steam generation, rather than from R&D activities themselves.

This renewal application requests minor changes to the existing Title V operating permit. LANL requests facility-wide emission limits remain unchanged. Regulated source-specific emission limits remain unchanged or reduced. Emission units with applicable requirements have been reduced as some sources have been decommissioned.

This Title V renewal application fulfills all the requirements of 20.2.70 NMAC for identifying applicable requirements and fees.

1.0 INTRODUCTION

The Los Alamos National Laboratory (LANL or the Laboratory) is a scientific institution dedicated to the research and development (R&D) of: nuclear weapons science and technology; earth, energy, and environmental systems; nuclear and advanced materials; bioscience; and nuclear plasmas and beams. The Laboratory is owned by the Department of Energy/National Nuclear Security Administration (DOE/NNSA) and is operated by Los Alamos National Security, LLC. The Laboratory's products are specific solutions to R&D problems, and many of these solutions are transferred elsewhere for commercialization or production. The Laboratory's R&D operations are unique in that they have no defined process or schedule. Rather, the intent of research is to constantly develop and improve processes. Therefore, operational flexibility is of utmost importance to this institution.

1.1 Facility Description

The Laboratory is located in Los Alamos County, in north-central New Mexico, approximately 60 miles north of Albuquerque and 25 miles northwest of Santa Fe (Figure 1.1-1). The Laboratory is located on 40 square miles of land and is divided into Technical Areas (TAs) that are used for building sites, experimental areas, radioactive waste disposal locations, roads, and utility rights-of-way (Figure 1.1-2). These uses account for only a small fraction of total land area, because most land provides buffer areas for safety and security reasons. The community of Los Alamos borders the Laboratory to the north and the community of White Rock borders the Laboratory to the southeast. The surrounding land is largely undeveloped, with large tracts of land being held by Santa Fe National Forest, Bureau of Land Management, Bandelier National Monument, and San Ildefonso Pueblo.

The Laboratory is an R&D institution owned by DOE/NNSA and operated by Los Alamos National Security, LLC. It falls under the Standard Industrial Classification (SIC) 9711 – National Security. The primary mission of the Laboratory is to ensure the integrity and safety of the current United States' stockpile of nuclear weapons and nuclear materials. Supporting this mission is maintenance of the technical expertise and capabilities for any renewed production of nuclear weapons and for the management of nuclear materials to ensure the availability and safe disposition of plutonium, highly enriched uranium, and tritium. Laboratory scientists and engineers accomplish this mission through acquisition of annual funding from various federal departments to support R&D activities and small-scale production activities. These activities include, but are not limited to, the following:

- Inertial confinement fusion R&D, including fusion target physics, laser-target interaction experiments, target design and fabrication, and high-energy laser development;

- Nuclear materials R&D directly related to the nuclear weapons program, including research in materials science and materials development, process and fabrication development, and transfer of technology to the DOE production complex;

- Science-based certification of the nuclear weapons stockpile including support for integral hydrotests and subcritical experiments, and high-performance computing;

- Non-nuclear materials R&D activities, including neutral particle beam, free-electron laser, sensors, communication technologies, high-velocity projectiles, advanced lasers, acquisition and tracking of targets, optics, beam propagation, and high-power microwaves;

- Environmental R&D, including storing and managing radioactive waste, handling hazardous waste, investigating new technologies to address problems associated with waste characterization and cleanup, environmental control technologies, global climate change, ozone depletion, atmospheric science, and basic environmental science;

- Non-nuclear energy R&D activities, including renewable energy, fossil energy, and energy conservation;

- Basic research in defense- and energy-related disciplines, including atomic and molecular physics, bioscience, chemistry, computational science and applied mathematics, geoscience, space science, astrophysics, material science, nuclear and particle physics, plasma physics, fluids, particle beams, and applied science and engineering; and

- Reestablishing the nation's capability for the manufacture and certification of pits, the central component in nuclear weapons, including reestablishing the manufacturing processes for pits, detonators, beryllium components, neutron-tube target loading, and joint test assemblies; producing, in limited numbers, pits for warheads; developing and implementing the scientific methodology, based on both experiment and simulation, to certify the pits that are manufactured.

In order to support these activities, the Laboratory operates an infrastructure of industrial-type operations that provide electricity, building and process heating and cooling, general construction and maintenance, and road repair. These activities include, but are not limited to, the following:

- External combustion sources including steam generation for general building heat, process heat, or for electricity generation for local consumption;

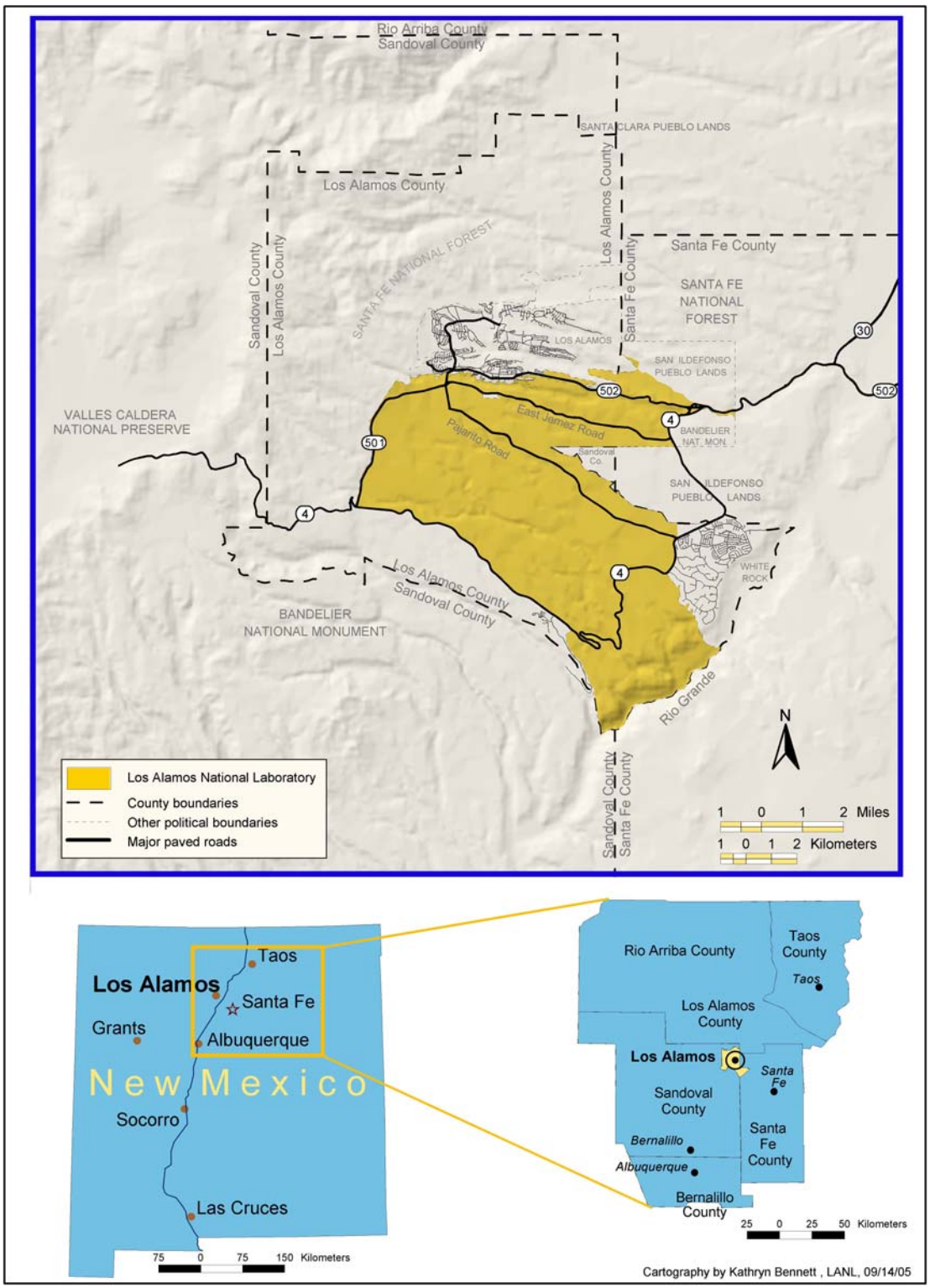
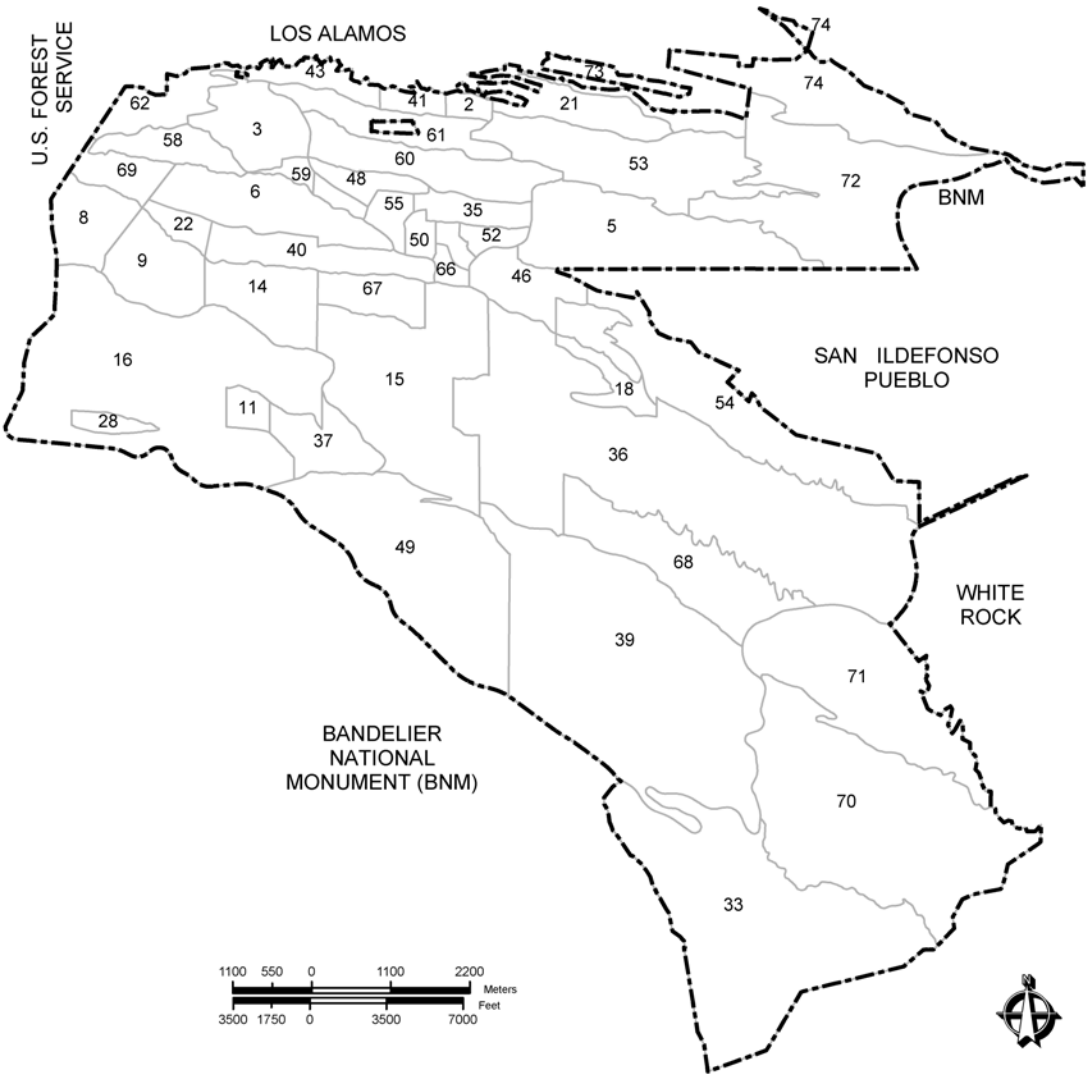


Figure 1.1-1. Location of Los Alamos National Laboratory.



Technical Area map of Los Alamos National Laboratory

Figure 1.1-2. Technical Area map of Los Alamos National Laboratory.

- Internal combustion engines such as standby generators to provide emergency power to buildings and operations; and
- Asphalt production for road repair.

Industrial-type activities are responsible for the majority of the Laboratory's emissions of regulated air pollutants.

1.2 Application Contents

This application is organized to provide all the elements required by the operating permit regulation, 20.2.70 NMAC, using the "New Mexico Air Quality Operating Permit Application Package Instructions 20.2.70 NMAC." Chapter 1 provides an overview of the facility, renewal application contents, and a summary of proposed changes to the existing LANL operating permit (P100M2). Chapter 2 provides a detailed overview of each emission source category, including the following as appropriate:

- Equipment capacity, dimension, stack parameters, process flow diagrams, identifying information, and locations;
- Operating procedures and schedules (including operating restrictions);
- Emission calculations and controls;
- Applicable requirements and permit conditions; and
- Proposed changes from the existing LANL operating permit (P100M2).

Table 1.2-1 outlines the required elements and where they are found in this application. Chapter 3 provides a detailed discussion of all applicable requirements. Some of the package elements described in the "New Mexico Air Quality Operating Permit Application Package Instructions 20.2.70 NMAC" are not applicable to LANL as discussed below:

- **Package Element 3**: Proposed Exemptions. LANL is not proposing any exemptions to otherwise applicable requirements; therefore, Package Element 3 is not discussed further in this application.
- **Package Element 9**: Alternative Operating Scenarios. LANL does not employ any alternative operating scenarios for any of the equipment or operations. Therefore, Package Element 9 is not discussed further in this application.
- **Package Element 11:** Dispersion Modeling and Analysis. LANL is not required to conduct dispersion modeling in conjunction with this permit application.

- **Package Element 18:** Compliance Plan. This package element only applies to sources that are not currently in compliance with one or more applicable requirements and describes the plan that will be followed to bring the source back into compliance. LANL is currently in compliance will all applicable requirements; therefore, Package Element 18 is not discussed further in this application.
- **Package Element 19:** Compliance Schedule. This package element only applies to sources that are not currently in compliance with one or more applicable requirements and describes the schedule that will be followed to bring the source back into compliance. LANL is currently in compliance with all applicable requirements; therefore, Package Element 19 is not discussed further in this renewal application.
- **Package Element 20:** Schedule of Certified Progress Reports. This package element applies only to sources that are not currently in compliance with one or more applicable requirements and describes the schedule for submittal of certified progress reports indicating that the source is complying with its Compliance Plan (Package Element 18) and Compliance Schedule (Package Element 19). LANL is currently in compliance with all applicable requirements; therefore, Package Element 20 is not discussed further in this renewal application.
- **Package Element 21:** Acid Rain Sources. Package Element 21 applies only to acid rain sources as defined by Environmental Protection Agency (EPA). LANL is not an acid rain source; therefore, Package Element 21 is not discussed further in this application.

A summary of the location of Package Elements in the LANL operating permit renewal application is found in Table 1.2-1.

Table 1.2-1 20.2.70 NMAC Application Package Elements and Location in Application

Package Element	Location in Application
1. Operating Permit Application Form	Appendix A
2. Additional Information for Applicable Air Pollution Control Requirements	Chapter 3
3. Proposed Exemptions	None
4. Process Flow Sheets	Chapter 2 Sections
5. Calculations	Chapter 2 Sections
6. Work Practice Standards or Limitations	Chapter 2 Sections

Package Element	Location in Application
7. Operational Plan	Chapter 2 Sections
8. Site Diagram	Chapter 2 Sections
9. Alternative Operating Scenarios	None
10. Insignificant Activities	Chapter 1
11. Dispersion Modeling	N/A
12. Monitoring Protocols	Chapter 2 Sections
13. Compliance Status	Chapter 3
14. Continued Compliance	Chapter 3
15. Schedule for Submission of Compliance	Chapter 3
16. Enhanced Monitoring and Compliance	Chapter 2
17. Stratospheric Ozone and Climate Protection	Chapter 3
18. Compliance Plan	N/A
19. Compliance Schedule	N/A
20. Schedule of Certified Progress Reports	N/A
21. Acid Rain Sources	N/A
22. Hazardous Air Pollutant (HAP) Sources (112r)	N/A

1.3 Changes from Existing Permit

LANL was issued New Mexico Operating Permit Number P100 on April 30 2004; the permit was modified June 15, 2006 (P100M1) with the addition of some emission units. An administrative permit modification (P100M2) was obtained on July 17, 2007, that removed a beryllium operation from the permit. This permit renewal application addresses the same operations identified in P100M1 and P100M2 with a few changes. In this application, all reference to the existing LANL operating permit will be to "P100M2." The changes included in this permit application are summarized in Table 1.3-1

Table 1.3-1 Proposed Changes to LANL Title V Permit

Section of Permit (P100M2) Affected	Proposed Permit Change	Details See Page #
Total Allowable Emissions	No Change Proposed	2-108
1.0 General Conditions	No Change Proposed	n/a
2.1 Asphalt Production	Emission limits reduction, change permit condition to reflect correct fuel and haul road emissions.	2-5
2.2 Beryllium Activities	Reduced number of emission units due to decommissioning as identified in P100M2. Also add new requirements from NSR Permit 1081-M1-R6 and new monitoring requirements for registered sources.	2-17
2.3 Boilers and Heaters	Reduced number of emission units due to decommissioning, add low-NOx controls to 2 emission units	2-37
2.4 Carpenter Shops	No Change Proposed	2-53
2.5 Chemical Usage	No Change Proposed	2-61
2.6 Degreasers	Reduce number of emission units due to decommissioning.	2-65
2.7 Internal Combustion Sources	Add 3 emission units as per New Source Review (NSR) Permit 2195P	2-78
2.8 Data Disintegrator	No Change Proposed	2-85
2.9 Power Plant at TA-3	Recommend individual boiler tons per year emission limits.	2-97
2.10 Facility Wide Emission Limits	No Change Proposed	2-108
3.0 Recordkeeping	No Change Proposed	n/a
4.0 Reporting	No Change Proposed	n/a
5.0 Compliance	No Change Proposed	n/a
6.0 Emergencies	No Change Proposed	n/a
7.0 Permit Reopening and Revocation	No Change Proposed	n/a
8.0 Stratospheric Ozone	No Change Proposed	3-59, 3-60
9.0 Radionuclide National Emission Standard for Hazardous Air Pollutants (NESHAP)	No Change Proposed	3-57
10.0 Asbestos NESHAP	No Change Proposed	3-58

1.4 Insignificant Activities

NMED's Operating Permit Program List of Insignificant Activities, dated March 24, 2005, lists categories of insignificant activities. Table 1.4-1 lists the LANL insignificant source categories and emission units that are exempted from the operating permit process based on size, emissions, or production rate. The table lists the citation from the Air Quality Bureau (AQB) List of Insignificant Activities that exempts these operations from permitting and also provides an explanation to demonstrate that the

source category meets the requirements of the exemption.

Table 1.4-1. Insignificant Emission Units at LANL

Emission Unit or Source Category	Insignificant Activities List Citation	Basis for Exemption
Boilers and Heaters	1a, 3	The majority of boilers and heaters are insignificant activities. See Section 2.3 for more details.
Cooling Towers	1a, 1b	Each cooling tower has emission rates less than 1 ton per year (tpy) or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Degreasers with Non-Halogenated Solvents	1a,1b	Degreasers that use regulated chemicals have emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Electroplating	1a,1b	Electroplating operations have emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Environmental Restoration	1a,1b	Environmental restoration activities have emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Lead Melting	1a,1b	Lead melting operations have emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Open Detonation Sites	1a, 1b	Each site where detonation experiments occur has emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Open Burning	1a, 1b	The open burn site at TA-16 has emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Paint Booths	1a, 1b	Paint booth operations at LANL do not exceed 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
R&D Chemical Usage	1a,1b	Building chemical records were reviewed and a determination made that chemical usage at individual emission units were less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC. See Section 2.5 for more details on LANL's chemical usage.
Sand Blasting	1a	Self-contained sand blasting operations were reviewed and found to be well below the emission rate thresholds for particulate matter (PM) based on abrasive used.
Internal Combustion Sources	6, 7	LANL operates numerous stationary standby generators and portable generators that meet the definition of insignificant emission units. See Section 2.7 for details.
Storage Tanks >500 gal	5	Each tank above 500 gallons has emission rates less than 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.

Surface Coating	2	Each paint booth has total clean-up solvent and coating actual emissions of less than (2) tpy.
Waste Management	1a,1b	Waste management activities at TA-50 and TA-54 do not generate emission in excess of 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Welding	1a, 1b	Site-wide emission from annual welding rod usage is less that 1 tpy or emission thresholds described in EPA-453/R-93-035 or Sections 500─502 of 20.2.72 NMAC.
Woodworking	1a	Equipment for small jobs of woodworking are located around the Laboratory but do not emit in excess of 1 tpy of particulate matter. See Chapter 2.4 for details.

1.5 Summary of Allowable Emissions

The potential to emit air pollutants at LANL is defined by the federally enforceable emission limits in the existing operating permit (P100M2). Table 1.5-1 lists the allowable annual emission limits from the existing operating permit P100M2. Annual actual emissions are well below the facility-wide allowable emission rates in the table. Actual emissions are documented in Title V semi-annual emission reports and annual emission inventory reports submitted to NMED.

Table 1.5-1. Summary of Allowable Emissions

Emission Unit	Allowable Annual Emissions						
	NO_x	SO_x	PM	PM_{10}	CO	VOC	HAP
Asphalt Production	1 tpy	1 tpy	-	-	2.6 tpy	1 tpy	-
Beryllium Activities	-	-	-	-	-	-	6.9 gm/y
Boilers and Heaters	80 tpy	50 tpy	50 tpy		80 tpy	50 tpy	-
Carpenter Shops	-	-		5.88 tpy	-	-	-
Chemical Usage (facility-wide)	-	-	-	-	-	-	-
Degreasers (facility-wide)	-	-	-	-	-	-	-
Internal Combustion Sources	18.1	2.5	-	0.6	15.2	0.3	-
Data Disintegrator	-	-	9.9 tpy	9.9 tpy	-	-	-
TA-3 Power Plant - Boilers	60.2 tpy	7.9 tpy	8.4 tpy	8.2 tpy	41.3 tpy	5.6 tpy	-
TA-3 Power Plant - Turbine	33.2 tpy	1.9 tpy	2.3 tpy	2.3 tpy	19.8 tpy	-	-
Facility-Wide	245 tpy	150 tpy	120 tpy	-	225 tpy	200 tpy	8/24* tpy

*Individual HAP and combined HAP emission limits.

1.6 Fee Determination

As defined by 20.2.71 NMAC, a "fee pollutant" means the following:

1) Sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), total suspended particulate matter (PM), and volatile organic compounds (VOCs); and

2) Any HAP that is subject to any standard promulgated pursuant to Section 112 of the federal Clean Air Act (CAA).

Because the NMED operating permit fees are based on allowable emission rates, the LANL facility-wide limits cap allowable emissions on these fee pollutants. Table 1.6-1 shows the existing and proposed facility-wide limits for each fee pollutant.

Table 1.6-1 Fee Pollutants

Pollutant	Facility Limit (ton/year)
CO	225
112(b) HAPs	24 (all HAPs combined)
NO_x	245
PM	120
SO_2	150
VOC	200
Total	964

20.2.71 NMAC sets fees at $18.00 per ton of fee pollutant emitted per year, if the source is major for any pollutant other than HAPs. The fee for hazardous air pollutants is higher for sources that are major only for HAPs. Since the Laboratory is a major source of criteria pollutants, the $18.00 per ton per year applies. The calculated fee is

964 tpy • $18.00/ton = $17,352.00

2.0 EMISSION UNITS

2.1 Asphalt Production

2.1.1 General Description of Source Category

LANL operates an existing small asphalt batch plant that produces hot mix asphalt for minor road patching and paving. The plant is primarily used for making "pothole" mix, and this is made in small batches. The plant, located at TA-60-236, was manufactured by BDM Engineering, Model Number TM2000, and started operation on July 19, 2005. The construction of this plant was performed under General Construction Permit GCP-3-2195G, which was issued under 20.2.72 NMAC on October 29, 2002.

The plant mixes aggregate with liquid asphalt cement to produce bituminous pavement material. Aggregate is stored in piles near the plant and is transferred to the plant using a front-end loader. The asphalt cement consists of asphaltenes, resins, and oils. This material is stored in a tank adjacent to the plant. The asphalt cement is a solid at normal ambient temperature. A propane-fired heater is used to liquefy the asphalt cement.

Rock and sand are fed into a rotary dryer where it is heated and dried using a 25 MMBtu/hr propane gas burner. The dried aggregate is discharged into a bucket elevator, which discharges onto a vibrating screen that separates the material into different sizes. Material is discharged into a weigh hopper and then into a mixer where liquid asphalt is added as a percentage of the total mixture. The dust from the dryer is passed through a cyclone and baghouse to clean the gas stream. The gases are discharged to the atmosphere while the particulate collected by the cyclone and baghouse are transferred into the bucket elevator by means of a screw conveyor and incorporated into the hot mix.

In the 2002 Title V application, LANL requested a federally enforceable permitted production limit for asphalt in order to limit criteria pollutant emissions. The proposed asphalt production limit was 13,000 tpy, 12-month rolling total. The production limit was based on potential demand and actual production rates. This production limit was incorporated within Permit P100 by NMED.

2.1.2 Operating Schedule

The normal operating schedule for the BDM asphalt plant is less than four hours per day, four days a week, when asphalt work is being performed. Asphalt may be produced year-round, but is primarily used during warmer months. The maximum asphalt production design capacity of this plant is 60 tons per hour. No changes to the operating schedule or production limits are requested in the

renewal application.

2.1.3 Process Flow Diagram

Flow diagrams for the operation of the asphalt plant are provided in Figure 2.1-1.

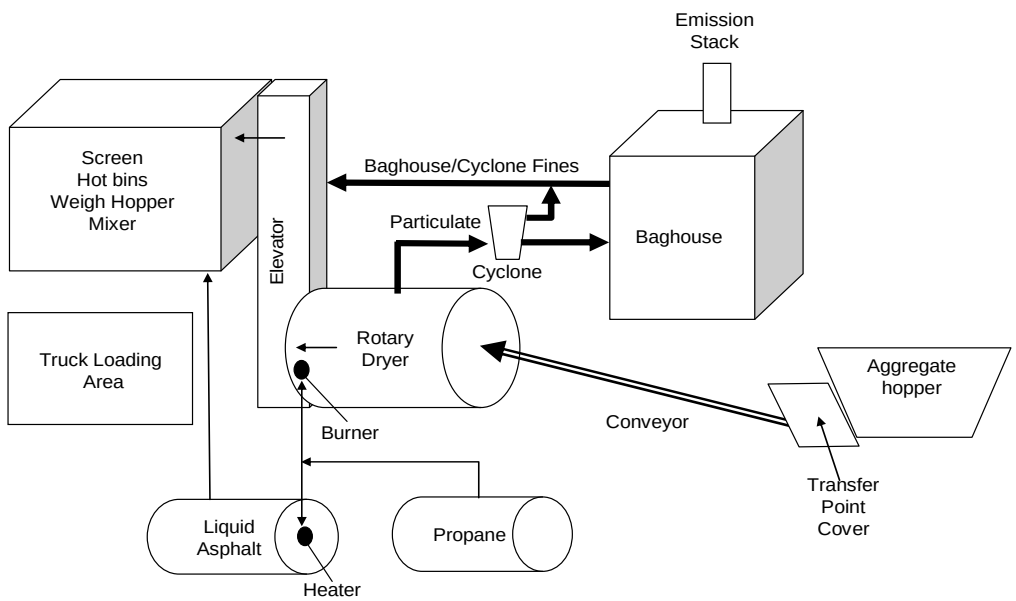


Figure 2.1-1. Process Flow Diagram for Asphalt Plant – BDM Engineering.

2.1.4 Emissions

Emissions from the asphalt plant include criteria pollutants (NO_x, CO, SO_2, PM, and VOCs) and trace amounts of HAPs. The annual emissions estimates are presented in Table 2.1-1. The emission factors for regulated air pollutants from the asphalt plant are summarized in Table 2.1-2. These factors were obtained from EPA's AP-42, as well as from results of a source test for controlled PM emissions conducted by Kramer and Associates on LANL's asphalt plant on August 26, 2005.

Emissions were calculated using the following general formula:

$$Emission\ Rate\left(\frac{lb}{yr}\right) = [Emission\ Factor\left(\frac{lb}{ton\ asphalt}\right)]\ [Asphalt\ Production\ Rate\left(\frac{ton\ asphalt}{year}\right)]$$

Table 2.1-1. Emissions Estimates for Asphalt Production

Air Pollutant	Emissions (tpy) BDM Engineering Plant Controlled
NO_x	0.16
SO_2	0.03
PM	0.06
CO	2.60
VOC	0.05
HAP	0.05

Table 2.1-2. Asphalt Plant Emission Factors

Air Pollutant	Emission Factor (lb/ton)
NO_x[(a)]	0.025
CO[(a)]	0.40
SO_2[(a)]	0.0046
Controlled PM[(b)]	0.0093
VOC[(a)]	0.0082
HAP[(a)]	0.0076

(a) AP-42, 3/04, Section 11.1, Hot Mix Asphalt Plants,
Tables 11.1-5, 11.1-6, and 11.1-9, Batch Mix – Natural-Gas-Fired Dryer.
(b) Kramer and Associates, Source Test Performed 08/26/2005.

2.1.5 Emissions Control Equipment

The BDM Engineering asphalt plant is equipped with a cyclone, Model Number 84M, and a baghouse, Model Number 18000M. The cyclone and baghouse are rated by the manufacturer, BDM Engineering, to have 70% and 99.9% efficiencies, respectively. The haul road to the asphalt plant was paved in 2006. To control fugitive emissions, the haul road is swept as needed.

2.1.6. Operational Plan

Emissions from the startup and shutdown of the asphalt plant are not expected to differ from those during normal operations. Both the cyclone and baghouse are monitored for proper operation by the operations staff during each run. Emissions of PM could increase from operations if a malfunction of either control device were to occur. During any control device malfunction, the plant operator will take whatever actions are required to prevent an increase of visible emissions. Routine and preventive maintenance are performed as recommended by the

equipment manufacturer.

2.1.7 Applicable Requirements

20.2.1l NMAC sets maximum PM emission rates in pounds per hour. In addition, the regulation requires the existence of a fugitive dust control system such that all particulate emissions are limited to the stack outlet. The BDM Engineering asphalt plant has a maximum process rate of 60 tons per hour (120,000 pounds per hour). This process rate corresponds to 33.8 pounds per hour for PM, as interpolated from 20.2.11 NMAC allowable emission rates.

Based on the source test performed on August 26, 2005, the PM emission rate, at the test process rate of 32 tons per hour, is 0.27 pounds per hour. This is well below the 33.8 pounds per hour for a process rate of 60 tons per hour, and 31.6 pounds per hour for a process rate of 32 tons per hour.

In 2006, the haul road leading to the asphalt plant, located at TA-60 (Sigma Mesa), was paved. The paved road significantly reduced the potential of fugitive emissions from vehicle traffic. The roads are swept as needed to remove any track out and other debris, which may cause visible emissions.

Table 2.1-3 summarizes the applicable requirements currently identified in the operating permit (P100M2) for asphalt production and recommends changes to those applicable requirements.

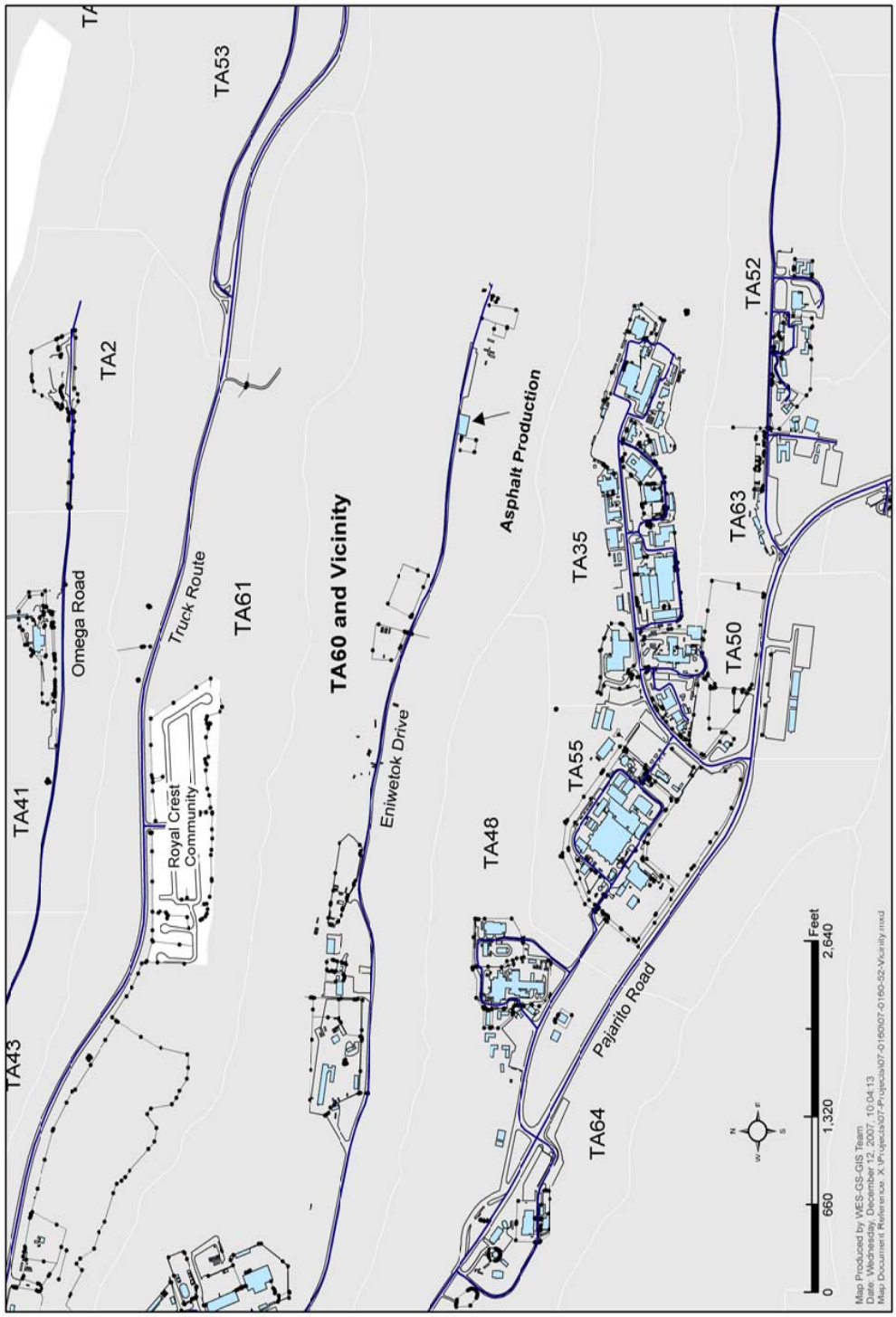
2.1.8. Location of Asphalt Production

Location of Asphalt Production at Los Alamos can be found in Figures 2.1-2 and 2.1-3.

Table 2.1-3. Applicable Requirements for Asphalt Production and Proposed Changes to the LANL Operating Permit (P100M2)

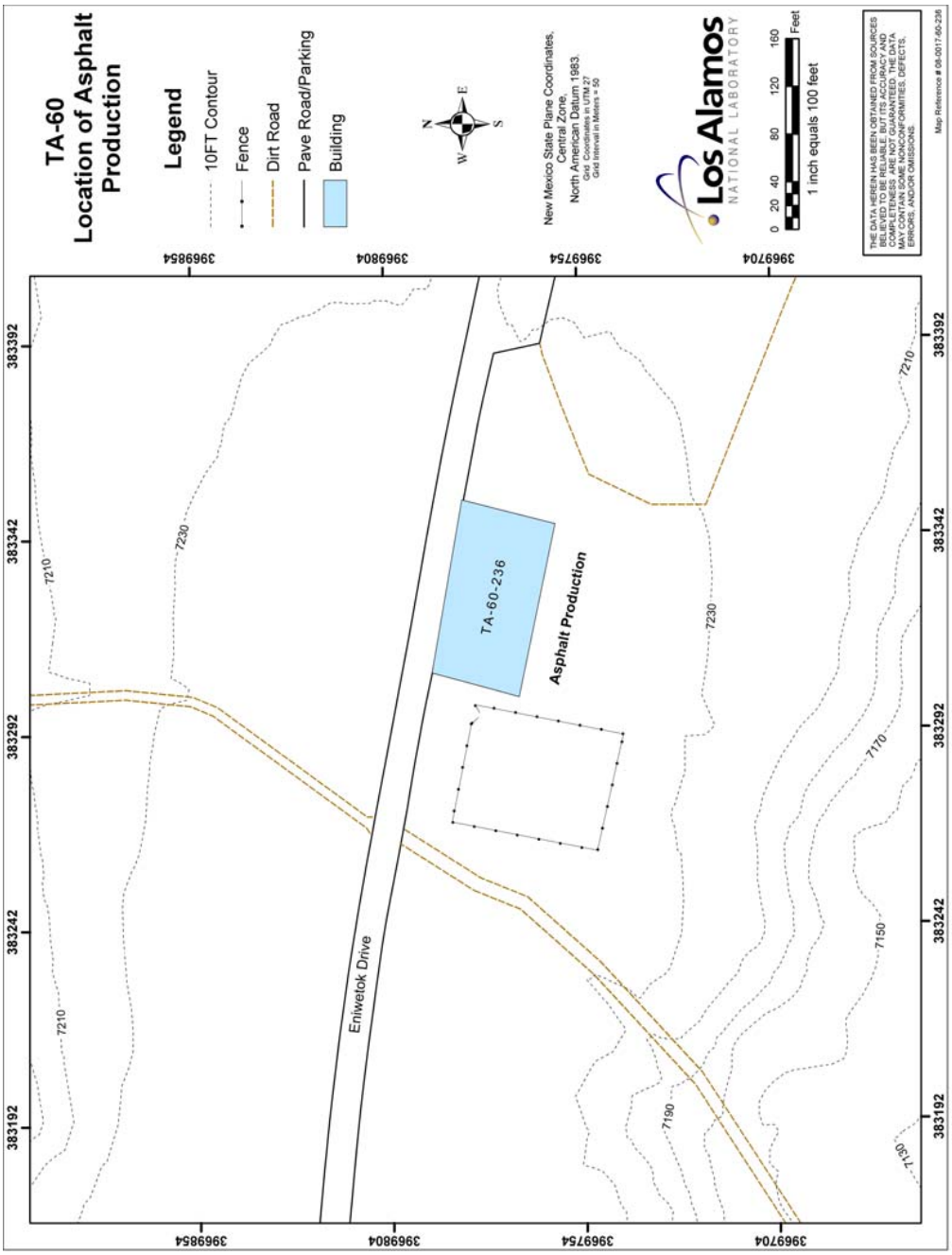
<table>
<tr><th>Existing P100M2 Permit Conditions – Asphalt Production</th><th>Proposed Changes</th></tr>
<tr><td>2.1 Asphalt Production
All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):
<table>
<tr><th>Emission Unit No.</th><th>Location/Building</th><th>Make/Model</th><th>Type of Control</th><th>Design Capacity (tons per hour)</th></tr>
<tr><td>TA-60-BDM</td><td>TA-60</td><td>BDM Engineering TM2000</td><td>Cyclone Baghouse</td><td>80</td></tr>
</table></td><td>Change Design Capacity from 80 ton/hr to 60 ton/hr.</td></tr>
<tr><td>2.1.1 Applicable Requirements
2.1.1.1 The following requirements apply to this emission unit: 20.2.11 NMAC; 40 CFR Part 60, Subpart I, and NSR Permit Number GCP3-2195G.</td><td>No Change</td></tr>
<tr><td>2.1.2 Emission Limits
<table>
<tr><th rowspan="2">Emission Unit</th><th colspan="5">Allowable Emission Limits</th></tr>
<tr><th>NO_x</th><th>SO_2</th><th>PM</th><th>CO</th><th>VOC</th></tr>
<tr><td>TA-60-BDM</td><td>1.0 tpy</td><td>1.0 tpy</td><td>0.04 gr/dscf
35.4 lbs/hr</td><td>2.6 tpy</td><td>1.0 tpy</td></tr>
</table></td><td>Request PM Emission Limit of 33.8 lbs/hr based on interpolation of allowable emission rates found in 20.2.11.108 NMAC.</td></tr>
<tr><td>2.1.2.1 Visible emissions shall not exhibit an opacity of 20% or greater.
This condition is pursuant to 40 CFR 50 and Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>No Change</td></tr>
<tr><td>2.1.3 Operational Requirements
2.1.3.1 Production shall not exceed 13,000 tpy, 12-month rolling total.</td><td>No Change</td></tr>
<tr><td>2.1.3.2 The asphalt process equipment shall not operate without a fugitive dust control system to limit particulate emissions to the stack outlet.</td><td>No Change</td></tr>
<tr><td>2.1.3.3 Equip and operate all screens, conveyor belts, and transfer points with dust collection and control systems sufficient to prevent opacity from exceeding 20%.</td><td>No Change</td></tr>
<tr><td>2.1.3.4 The baghouse shall be equipped with a device to continuously monitor differential pressure across the baghouse.</td><td>No Change</td></tr>
<tr><td>2.1.3.5 Total sulfur content shall be no more than 0.75 percent by volume for any natural gas used.</td><td>Request the change from natural gas to propane. Only propane is used at the plant.</td></tr>
<tr><td>2.1.3.6 Total sulfur content shall be no greater than 0.5 percent by weight for any propane used.</td><td>Request deletion of this condition – Propane is a</td></tr>
</table>

Existing P100M2 Permit Conditions – Asphalt Production	Proposed Changes
	gaseous fuel and falls under 2.1.3.5. (0.75%)
2.1.3.7 Hours of operation are limited to one-half hour following sunrise, one-half hour before sunset, and those daylight hours in between.	No Change
2.1.3.8 Hours of operation are limited to 4,380 hours per year.	No Change
2.1.3.9 All unpaved haul roads shall be watered to prevent visible emissions.	Request deletion of this condition as all haul roads are paved (change to sweeping).
2.1.3.10 LANL plant operations shall be in accordance with NSR permit GCP3-2195G, section III, D, E, F, H, I, and K. The conditions of 2.1.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.	No Change
2.1.4 Emissions Monitoring Requirements 2.1.4.1 Perform monthly six (6) minute opacity readings for each emission point having opacity greater than zero as determined by EPA Method 22.	No Change
2.1.4.2 Monitor the differential pressure (inches of water) across the baghouse by the use of a differential pressure gauge, in accordance with condition IV.C.2 of NSR permit number GCP-3-2195G.	No Change
2.1.4.3 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation. The conditions of Section 2.1.4 are pursuant to 20.2.70.302.C NMAC.	No Change
2.1.5 Recordkeeping 2.1.5.1 The permittee shall comply with all applicable recordkeeping requirements in NSR permit number GCP-3-2195G, section IV.D, keeping records of actual hours of operation, production rates, number of haul truck trips daily, fuel sulfur content, tickets of fuel purchased, quantity and frequency of water applied to haul roads, frequency of haul road sweeping, and copies of proposed and performed maintenance.	Request deletion of water application as all roads are paved.
2.1.5.2 Keep compliance test results for particulate matter and opacity performed within 60 days of initial startup.	No Change
2.1.5.3 Maintain results of the monthly six (6) minute opacity readings.	No Change
2.1.5.4 Maintain records of the monitoring of the differential pressure across the baghouse. The conditions of 2.1.5 are pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.	No Change
2.1.6 Reporting 2.1.6.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2. This condition is pursuant to 20.2.70.302.E NMAC.	No Change



Location of Asphalt Production at TA-60.

Figure 2.1-2. Location of Asphalt Production at TA-60.



Emission Unit: TA-60-236, Asphalt Production

Figure 2.1-3. Location of Emission Unit TA-60-236.

2.2 Beryllium Activities

2.2.1 General Description of Source Category

The Laboratory uses beryllium in numerous R&D activities because of its unique metallurgic properties. Several of these activities are applicable air emission sources subject to the NESHAP for beryllium, regulated under 40 CFR 61 Subpart C and adopted by reference in 20.2.78 NMAC. Applicable sources and requirements are described in the LANL operating permit (P100M2). One of the registered beryllium activities, TA-3-29, has been discontinued and the Laboratory surrendered its registration through an Administrative Amendment (P100M2) on July 16, 2007. Following is a general description of the activities performed within each permitted and registered source.

Permitted Sources

TA-3-141, Beryllium Test Facility. This source is dedicated to beryllium R&D. Beryllium activities include beryllium machining and foundry operations. Beryllium metal and beryllium formed from powders and shaped during consolidation operations are machined. Foundry operations include melting scrap beryllium into ingots in furnaces. Other activities involving beryllium conducted at this facility include powder operations, consolidation operations, joining and coating operations, inspection operations, etching, atomizing, coating/plating, pressing, welding, non-destructive measurements, near net shape processes, and other processes to support formation of parts.

TA-35-213, Target Fabrication Facility. Activities include machining of small quantities of classified beryllium parts and associated cleanup activities.

TA-55-PF4, Plutonium Facility. Beryllium machining activities include weld cutting, weld bead dressing, and metallography. Metallographic specimen preparation includes surface cutting along with grinding. Cutting and grinding operations are conducted in a lubricant bath. Foundry operations include use of a furnace to melt beryllium. Neither the original furnace nor the replacement unit has gone into operation at the time of this application. Non-regulated activities, such as beryllium welding/brazing, compatibility studies, and impact testing, are also conducted in PF4.

Registered Sources

TA-3-66, Sigma Facility. Two registered activities are conducted in this facility: beryllium electroplating/chemical milling and polishing of metallographic specimens. An

additional permitted machining and arc melting/casting operation is also located in the facility. The electroplating/milling activity typically involves the removal of the surface from mechanical test specimens using acids. Final polishing of metallographic specimens is performed using a wheel covered with an abrasive cloth treated with propylene glycol and water, which prevents beryllium particles from becoming airborne. Ion beam sputtering operations are also used to remove fine layers of surface material. Machining operations are used to prepare small samples for metallographic observation using cutting and grinding methods. Melting and casting operations process small batch quantities of metal to form ingots for further mechanical and heat testing. These ingots may also undergo metallographic specimen preparation and other testing and quantification techniques. This activity was relocated to TA-3-66 from TA-3-141 in 1996.

TA-16-207. Beryllium is used in two applications: mounting blocks for instrumentation diagnostics and integral parts in special nuclear components. In both applications, only incidental wet sanding is used to prepare the samples. This activity is not exhausted through a stack.

TA-35-87. Beryllium foil is cut and punched to make filters used during laser experimentation. Small filters are cut or punched out of beryllium foil using standard scissors, metal snips, or punches. This activity is not exhausted through a stack

2.2.2 Operating Schedule

Each source has a different operating schedule, based on the needs of the particular activities conducted within the source. These operating schedules are summarized in Table 2.2-1.

Table 2.2-1. Operating Schedule for Beryllium Activities

Source	Operating Schedule
TA-3-141	The source is permitted to operate 24 hr/day, 7 day/wk, and 52 wk/yr for a total of 8,760 hr/yr.
TA-35-213	The source has a maximum operating schedule of 8 hr/day, 5 day/wk, 4 wk/mo, and 12 mo/yr. The source has a normal operating schedule of 4 hr/day, 3 day/wk, 4 wk/mo, and 12 mo/yr.
TA-55-PF4	The source is permitted to operate 24 hr/day, 7 day/wk, and 52 wk/yr for a total of 8,760 hr/yr.
TA-3-66	Operating schedules vary among these registered sources. These sources are not subject to any permit requirements and so may operate up to 8,760 hr/yr. Historically, they have operated much less during the year.
TA-16-207	
TA-35-87	

2.2.3 Process Flow Diagram

Process flow diagrams for each of the permitted sources are provided (Figures 2.2-1 to 2.2-6). These diagrams emphasize the pollution control equipment in place for each source.

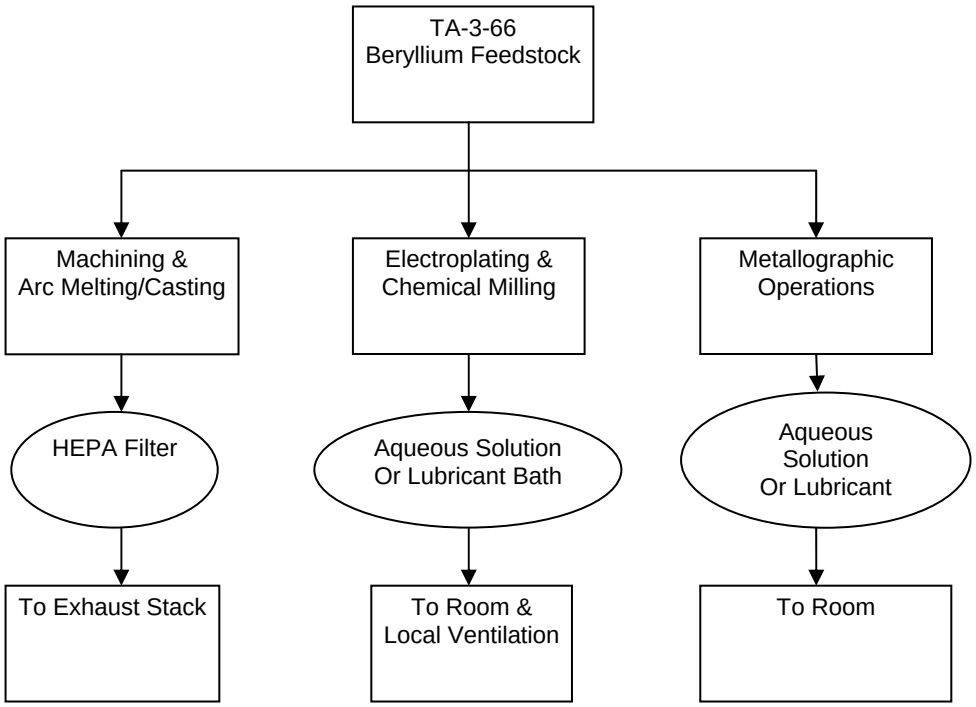


Figure 2.2-1. Process Flow Diagram for Beryllium Activities (TA-3-66). (HEPA is high-efficiency particulate air.)

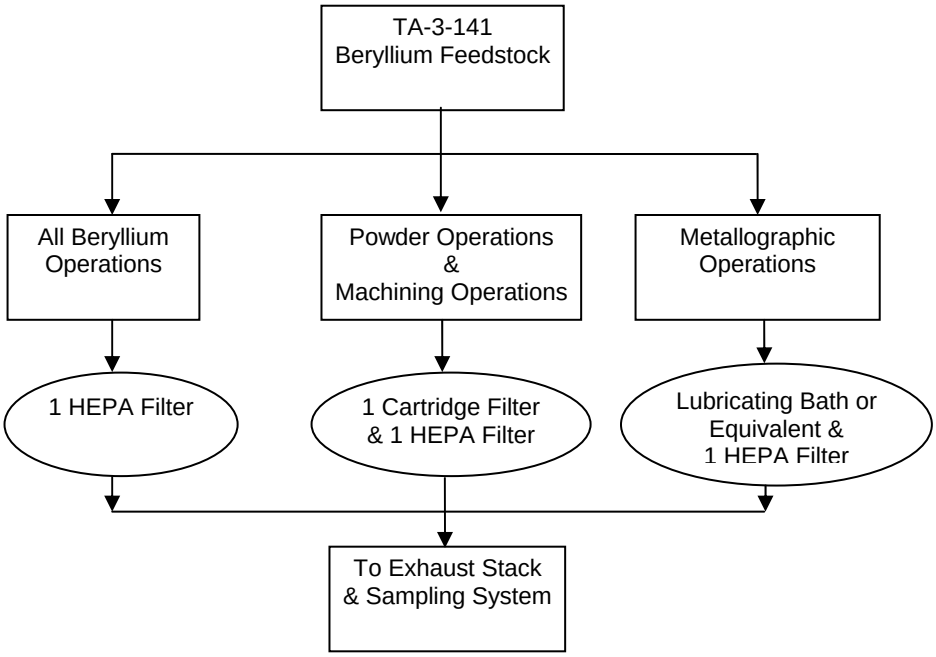


Figure 2.2-2. Process Flow Diagram for Beryllium Activities (TA-3-141).

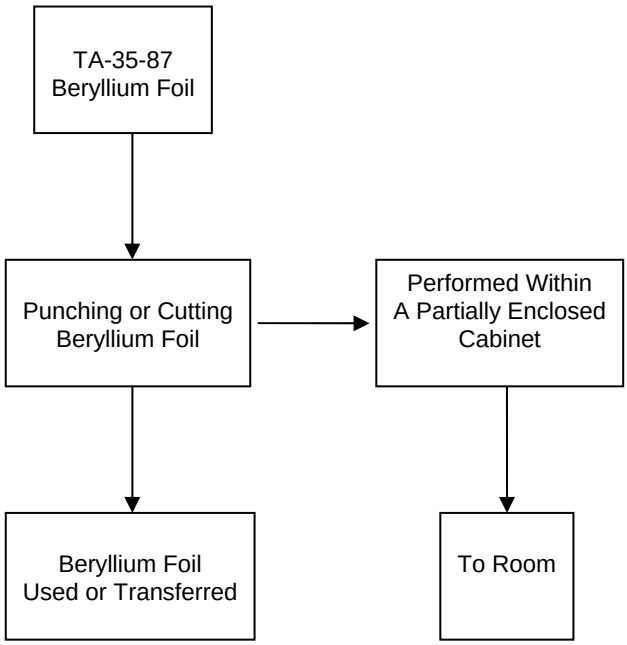


Figure 2.2-3. Process Flow Diagram for Beryllium Activities (TA-35-87).

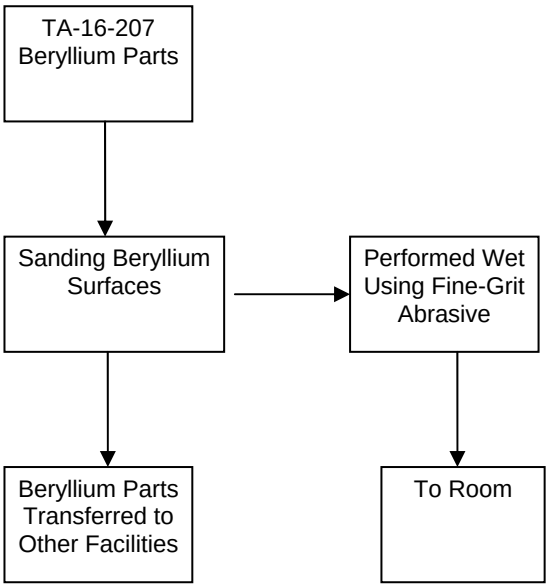


Figure 2.2-4. Process Flow Diagram for Beryllium Activities (TA-16-207).

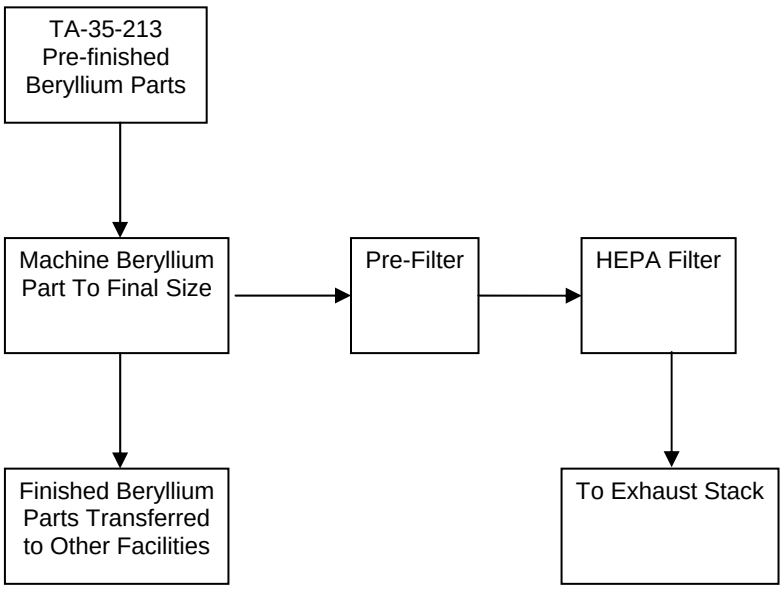


Figure 2.2-5. Process Flow Diagram for Beryllium Activities (TA-35-213).

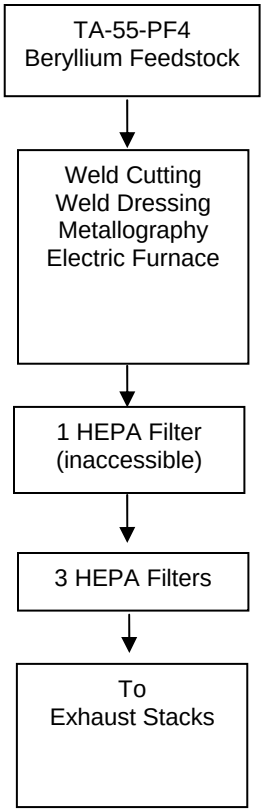


Figure 2.2-6. Process Flow Diagram for Beryllium Activities (TA-55-PF4).

2.2.4 Emissions

Allowable emissions for permitted sources are shown in Table 2.2-2. Registered sources emission estimates are the emission standard provided in 40 CFR 61 Subpart C and Permit P100M2. However, because of the relative small quantities of actual beryllium emissions, LANL-registered beryllium sources have a negligible contribution toward facility HAP emissions.

Table 2.2-2. Emissions Estimates for Beryllium Activities

Source	Allowable Beryllium Emissions Limits	
	Beryllium	Aluminum
TA-3-66	10 gm/24 hour[1]	Not Applicable
TA-3-141[2]	0.35 gm/24hr 3.5 gm/yr	Not Applicable
TA-16-207	10 gm/24 hour[1]	Not Applicable
TA-35-87	10 gm/24 hour[1]	Not Applicable
TA-35-213[3]	1.8E-04 gm/hr 0.36 gm/yr	Not Applicable

TA-55-PF4[4] Machining Foundry	 0.12 gm/24 hr 2.99 gm/yr 3.49×10^{-5} gm/24 hr 8.73×10^{-4} gm/yr	 0.12 gm/24 hr 2.99 gm/yr 3.49×10^{-5} gm/24 hr 8.73×10^{-4} gm/yr

[1] Actual emission from registered beryllium sources are significantly lower than the standard.

[2] NSR Permit 634-M2

[3] NSR Permit 632

[4] NSR Permit 1081-M1-R5

2.2.5 Emissions Control Equipment

Emissions from all permitted and registered sources are mitigated through the use of one or more pollution control devices as shown in Table 2.2-3.

Table 2.2-3. Emissions Control Equipment

Source	Emissions Control Equipment
TA-3-66	Emissions from machining and arc melting/casting operations are exhausted through a HEPA filtration system before entering the atmosphere. Polishing and electroplating/chemical milling operations are conducted in aqueous solution or lubricant bath.
TA-3-141	All processes are exhausted through a HEPA filtration system before entering the atmosphere. Powder operations, other than closed glovebox operations, and machining operations, other than the processes used in metallographic preparation, are exhausted through a cartridge filtration system then through the HEPA filtration system. Metallographic preparation activities are conducted in lubricating baths or equivalent.
TA-16-207	Sanding of beryllium surfaces is performed wet using a fine-grit abrasive.
TA-35-87	All cutting and punching of beryllium foil occurs within a partially enclosed cabinet.
TA-35-213	All processes shall be exhausted through a HEPA filtration system before entering the atmosphere.
TA-55-PF4	Weld cutting, weld dressing, metallography, and electric melt furnace operations are exhausted through four HEPA filters in series, each with 99.95% control efficiency.

2.2.6 Operational Plan

Emissions from beryllium operations during startup and shutdown are not expected to differ from those during normal operations. The only malfunction that might result in excess emissions would be a HEPA filter failure. Monitoring conditions are in place where appropriate to track HEPA filter status.

2.2.7 Applicable Requirements

Several facilities at LANL are subject to the NESHAP for beryllium, regulated under 40 CFR 61 Subpart C and adopted by reference in 20.2.78 NMAC. Applicable requirements are identified in the current LANL Operating Permit (P100M2). One source, TA-3-29, was discontinued and was removed as a registered source (P100M2). NMED issued a technical revision to NSR Permit 1081 on May 12, 2006 which allowed LANL to replace a permitted vacuum induction furnace with an electric furnace at TA-55-PF4. No emission limits were revised, but revised operating, monitoring, and record keeping conditions were placed in NSR Permit 1081-M1-R6 which must now be incorporated into the operating permit. Table 2.2-4 summarizes the applicable requirements currently identified in the Operating Permit (P100M2) for beryllium activities and recommends changes based on changed operations.

2.2.8 Location of Beryllium Activities

The location of Beryllium Activities can be found in Figures 2.2-7 – 2.2-14.

Table 2.2-4. Applicable Requirements for the Beryllium Activities and Proposed Changes to the LANL Operating Permit (P100M2)

<table>
<tr><th>Existing P100M2 Permit Conditions – Beryllium Activities</th><th>Proposed Changes</th></tr>
<tr><td>

2.2 Beryllium Activities

All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):

<table>
<tr><th>Emission Unit No.</th><th>Location/Building</th><th>Process</th><th>Type of Control</th></tr>
<tr><td>TA-3-29</td><td>TA-3-29</td><td>Chemistry and Metallurgy Research Facility</td><td>HEPA Filter</td></tr>
<tr><td>TA-3-66</td><td>TA-3-66</td><td>Sigma Facility</td><td>HEPA Filter
Lubricating Bath</td></tr>
<tr><td>TA-3-141</td><td>TA-3-141</td><td>Beryllium Test Facility</td><td>Lubricating Bath
Cartridge Filtration System
HEPA Filter</td></tr>
<tr><td>TA-16-207</td><td>TA-16-207</td><td>Structural Testing</td><td>Wet Sanding</td></tr>
<tr><td>TA-35-87</td><td>TA-35-87</td><td>Laser Facility</td><td>Enclosed Glovebox</td></tr>
<tr><td>TA-35-213</td><td>TA-35-213</td><td>Target Fabrication Facility</td><td>Pre-Filter
HEPA Filter</td></tr>
<tr><td>TA-55-PF4</td><td>TA-55-PF4</td><td>Plutonium Facility</td><td>HEPA Filter</td></tr>
</table>

</td><td>Request to show removal of TA-3-29 Emission Unit in renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2).

Request changing TA-35-87 Control Type from “Enclosed Glovebox” to “Partially Enclosed Cabinet”</td></tr>
<tr><td>

2.2.1 Applicable Requirements

2.2.1.1 The following requirements apply to these emission units: 40 CFR Part 61, Subpart C, and NSR Permits Numbers 632, 634, and 1081.

</td><td>No Change</td></tr>
</table>

Existing P100M2 Permit Conditions – Beryllium Activities	Proposed Changes
2.2.2 Emission Limits	Request to show removal of TA-3-29 Emission Unit in renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2).

Source	Allowable Emission Limits	
	Beryllium	**Aluminum**
Chemistry and Metallurgy Research Facility TA-3-29	10 gm/24 hr	Not Applicable
Sigma Facility TA-3-66	10 gm/24 hr	Not Applicable
Beryllium Test Facility TA-3-141	0.35 gm/24 hr 3.5 gm/yr	Not Applicable
TA-16-207	10 gm/24 hr	Not Applicable
TA-35-87	10 gm/24 hr	Not Applicable
Target Fabrication Facility TA-35-213	1.8×10^{-4} gm/hr 0.36 gm/yr	Not Applicable
Plutonium Facility TA-55-PF4		
Machining Operation	0.12 gm/24 hr 2.99 gm/yr	0.12 gm/24 hr 2.99 gm/yr
Foundry Operation	3.49×10^{-5} gm/24 hr 8.73×10^{-4} gm/yr	3.49×10^{-5} gm/24 hr 8.73×10^{-4} gm/yr

This condition is pursuant to 20.2.70.302.A NMAC.

Existing P100M2 Permit Conditions – Beryllium Activities	Proposed Changes
2.2.3 Operational Requirements	Request to show removal of TA-3-29 Emission Unit in renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2). For TA-3-66 Operating requirement, request changing "electroplating /chemical milling, machining, and …" to electroplating /chemical milling, and relocated machining, and …."

Source	Operating Requirement	Process Limit	Control Equipment Requirement
Chemistry and Metallurgy Research Facility TA-3-29	Beryllium operations will consist of registered sources in Wing 2.	None	Hood exhaust from melting operations shall be exhausted through a HEPA filtration system prior to entering the atmosphere.
Sigma Facility TA-3-66	Beryllium operations will consist of registered polishing, electroplating/chemical milling, machining, and arc melting/casting sources.	None	Emissions from machining and arc melting/casting operations shall be exhausted through a HEPA filtration system prior to entering the atmosphere. Polishing and electroplating/chemical milling operations shall be conducted in aqueous solution or lubricant bath.
Beryllium Test Facility TA-3-141	The continuous emission monitor will be maintained in accordance with the Laboratory's quality program.	Beryllium processed by the facility will not exceed 10,000 pounds per calendar year. Beryllium processed by the facility will not exceed 1,000 pounds per day.	All processes shall be exhausted through a HEPA filtration system prior to entering the atmosphere. Powder operations, other than closed glovebox operations, and machining operations, other than the processes used in metallographic preparation, shall be exhausted through a cartridge filtration system then through the HEPA filtration system. Metallographic preparation activities shall be conducted in lubricating baths or equivalent.

Existing P100M2 Permit Conditions – Beryllium Activities				Proposed Changes
TA-16-207	Beryllium operations consist of wet sanding beryllium material.	None	Sanding of beryllium surfaces is performed wet using a fine-grit abrasive.	For TA-35-87 Control Equipment requirement, request changing "an enclosed glovebox" to read "a partially enclosed cabinet." For clarity, suggest adding to TA-55-PF4 Control Equipment requirement the sentence "The non-accessible filters are the first of the four HEPA filters, and are located at or near the gloveboxes." Request adding for TA-55-PF4 under Operating Requirement: The electric furnace shall be enclosed in a glove box, have a maximum operating temperature of 1600 degrees centigrade, and an inside volume space less than 1.1 cubic feet. (Condition 1.d of 1081-M1-R6) Request replacing for TA-55-PF4 under Control Equipment Requirement "vacuum furnace" with "electric furnace" (Condition 3 of 1081-M1-R6)
TA-35-87	Beryllium operations consist of punching or cutting beryllium foil.	None	All cutting and punching of beryllium foil occurs within an enclosed glovebox.	
Target Fabrication Facility TA-35-213	Beryllium operations will consist of only beryllium machining and associated cleanup activities.	None	All processes shall be exhausted through a HEPA filtration system prior to entering the atmosphere.	
Plutonium Facility TA-55-PF4	Regulated beryllium activities will be ducted through the pollution control equipment and out the north or south stack of PF-4.	44 pounds of beryllium (20 kg) in any 24 hour period; 1,100 pounds/year (500 kg/year) using a rolling total.	Weld cutting, weld dressing, metallography, and vacuum furnace operations shall be controlled with four HEPA filters with a control efficiency of 99.95% each. The non-accessible filters shall be replaced when the pressure drop across the filter either falls to levels indicating filter breakthrough or increases to levels indicative of excessive loading.	
The conditions of Section 2.2.3 are pursuant to 20.2.70.302.A NMAC.				

Existing P100M2 Permit Conditions – Beryllium Activities	Proposed Changes
2.2.4 Emissions Monitoring Requirements	Request to show removal of TA-3-29 Emission Unit in the renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2). Request changing TA-3-66 monitoring required from "polishing operation and the weight of Be …." to "polishing operation and the weight or volume of Be …." Request changing TA-35-87 from "….beryllium filters cut" to "….beryllium filters cut or punched" Request changing TA-16-207 monitoring required from "Project files shall be …" to "A log shall be maintained which shows the number of beryllium components that were wet sanded." Request adding for TA-55-PF4: The furnace temperature shall be continuously monitored and the flow rate from the glove box containing the furnace shall be measured once during each metal melt operation. (Condition 11 of Permit 1081-M1-R6)

Source	Monitoring Required
Chemistry and Metallurgy Research Facility TA-3-29	A log shall be maintained during operations which indicates the number of beryllium samples processed.
Sigma Facility TA-3-66	A log shall be maintained during operations which shows the number of metallographic specimens used in the polishing operation and the weight of Be samples processed in the electroplating/chemical milling, machining, and arc melting/casting operations.
Beryllium Test Facility TA-3-141	Facility exhaust stack will be equipped with a continuous emission monitor used to measure beryllium emissions. Cartridge and HEPA filters will be equipped with differential pressure gauges that measure the differential pressure across the cartridge and HEPA filters while the exhaust fans are in operation.
TA-16-207	Project files shall be maintained of components prepared for testing.
TA-35-87	A log shall be maintained during operations that shows the number of beryllium filters cut.
Target Fabrication Facility TA-35-213	Records of the stack emission test results (see Condition 2 of NSR Permit No. 632) and other data needed to determine total emissions shall be retained at the source and made available for inspection by the Department.
Plutonium Facility TA-55-PF4	The HEPA filtration systems shall be equipped with a differential pressure gauge that measures the differential pressure (inches of water) across the HEPA filters while the exhaust fans are in operation. Control efficiency shall be verified by daily HEPA filter pressure drop tests and annual HEPA filter challenge tests of accessible filters.

The conditions of Section 2.2.4 are pursuant to 20.2.70.302.C NMAC.

Existing P100M2 Permit Conditions – Beryllium Activities	Proposed Changes
2.2.5 Recordkeeping	Request to show removal of TA-3-29 Emission Unit in renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2).

Source	Recordkeeping Required
Chemistry and Metallurgy Research Facility TA-3-29	Recordkeeping for this source is specified in Condition 2.2.4.
Sigma Facility TA-3-66	Recordkeeping for this source is specified in Condition 2.2.4.
Beryllium Test Facility TA-3-141	Generate and maintain beryllium inventory records to demonstrate compliance with the 10,000 pounds of beryllium per calendar year and the 1000 pounds of beryllium per day processing limit. Record pressure drop across the cartridge and HEPA filters once per day that the exhaust fans are in operation and the facility is occupied. Record control equipment maintenance and repair activities.
TA-16-207	Recordkeeping for this source is specified in Condition 2.2.4.
TA-35-87	Recordkeeping for this source is specified in Condition 2.2.4.
Target Fabrication Facility TA-35-213	Recordkeeping for this source is specified in Condition 2.2.4.
Plutonium Facility TA-55-PF4	Stack emission test results and facility operating parameters including a daily record of the pressure drop measured across each appropriate HEPA plenum filtration stage, when the exhaust fans are operating. A copy of the annual HEPA test, a log of the daily pressure drop readings and a control equipment maintenance log shall be kept. This documentation shall be provided upon request. A log of the filter replacement shall be kept and shall be made available to the Department personnel upon request. The permittee shall keep records of the number and weight of classified parts processed during a 24-hour period and year using a rolling total. Records shall be made available to properly cleared Department personnel upon request.

The conditions of Section 2.2.5 are pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.

Request to add for TA-55-PF4: The permittee shall for each use of the furnace record the following operating parameters: metal type, theoretical melting point of the metal, metal melt duration once melting is commenced, maximum furnace temperature and glove box flow rate. (Condition 9 of Permit 1081-M1-R6)

Request to add for TA-55-PF4: A record of the furnace's internal volume shall be maintained at the facility. (Condition 9 of Permit 1081-M1-R6)

Existing P100M2 Permit Conditions – Beryllium Activities	Proposed Changes
2.2.6 Reporting	Request to show removal of TA-3-29 Emission Unit in renewed permit. This unit removed from the permit on July 16, 2007 (PM100M2).

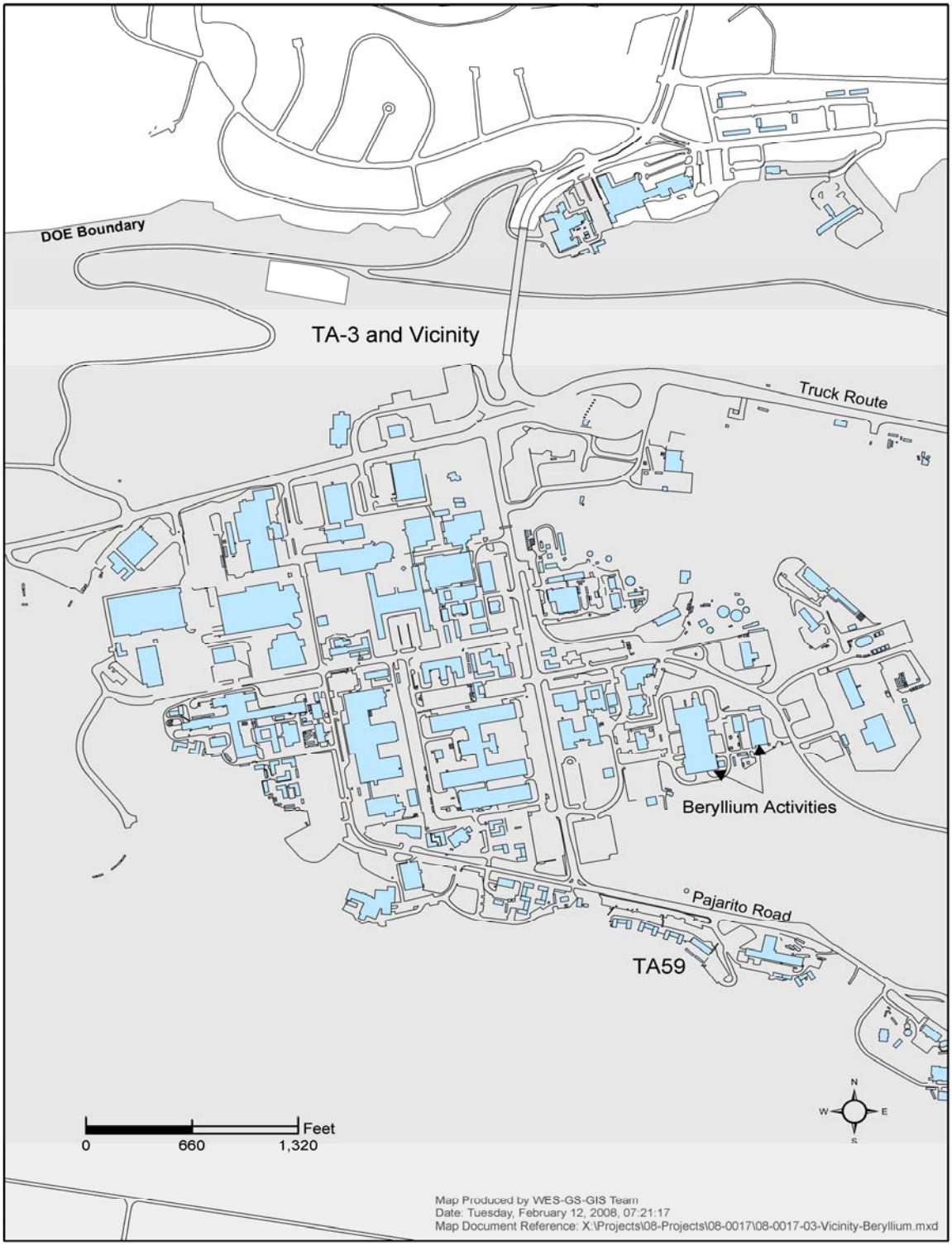
Source	Reporting Required
Chemistry and Metallurgy Research Facility TA-3-29	See condition 4.2.
Sigma Facility TA-3-66	See condition 4.2.
Beryllium Test Facility TA-3-141	Anticipated date of initial startup of each new or modified source not less than thirty (30) days prior to the date. Actual date of initial startup of each new or modified source within fifteen (15) days after the startup date. Provide 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. Notify the Department within 60 days after each calendar quarter of the facility's compliance status with the permitted emission rate from the continuous monitoring system. Provide any data generated by activities described in the Quality Assurance Plan (QAP) that will assist the Air Quality Bureau's Enforcement Section in determining the reliability of the methodology used for demonstrating compliance with the permitted emission rate within 45 days of such a request.
TA-16-207	See condition 4.2.
TA-35-87	See condition 4.2.
Target Fabrication Facility TA-35-213	See conditions 4.1 and 4.2.
Plutonium Facility TA-55-PF4	Stack emission test results and facility operating parameters will be made available to Department personnel upon request. Reports may be required to be submitted to the Department if inspections of the source indicate noncompliance with this permit or as a means of determining compliance.

The conditions of Section 2.2.6 are pursuant to 20.2.70.302.E NMAC.

Request correction to TA-3-141reporting required. Quality Assurance Plan (QAP) should be Quality Assurance Project Plan (QAPP).

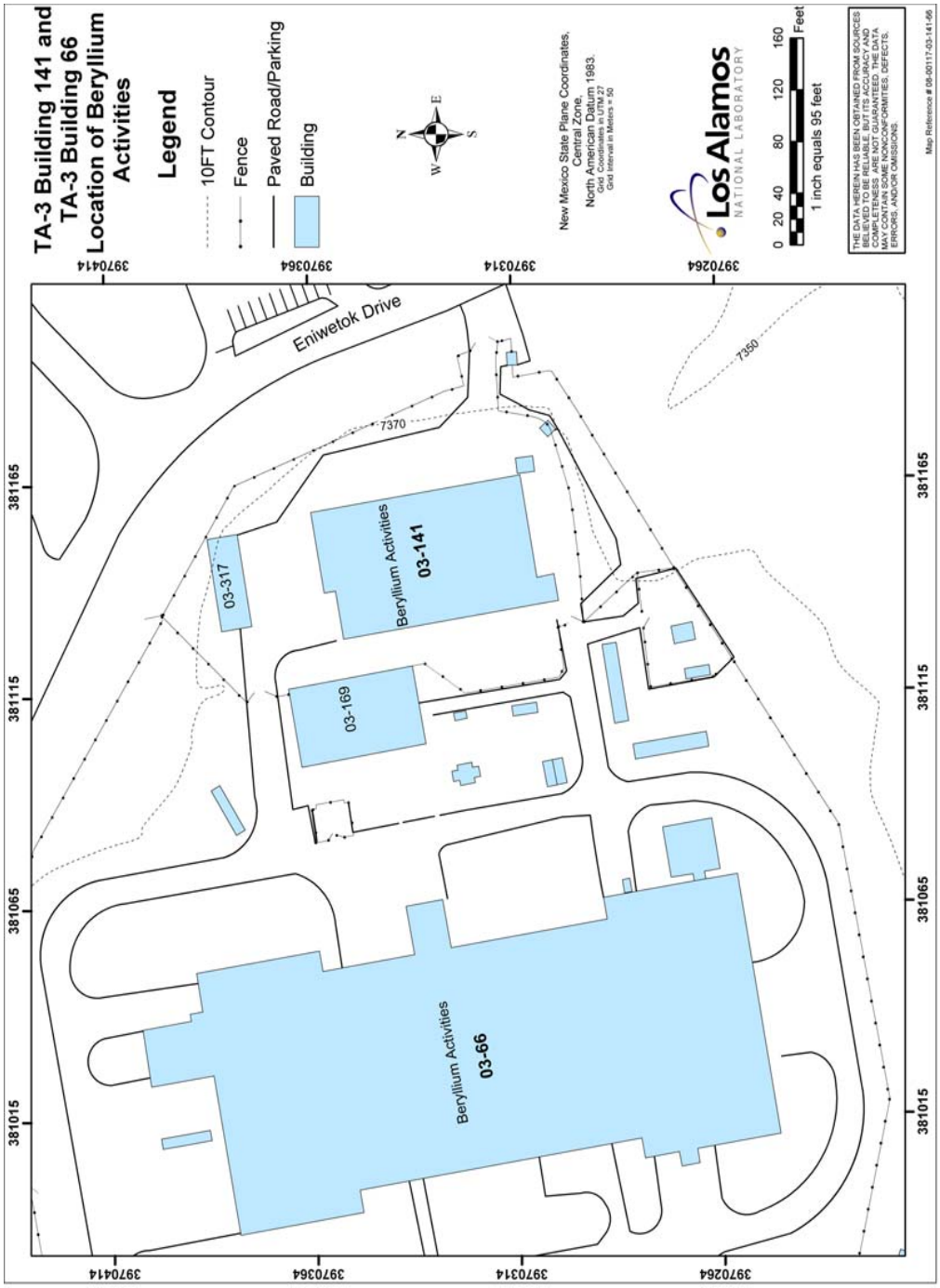
Request to add for TA-3-141: See conditions 4.1 and 4.2

Request to add for TA-55-PF4: See conditions 4.1 and 4.2



Location of Beryllium Activity at TA-3.

Figure 2.2-7. Location of Beryllium Activities at TA-3.

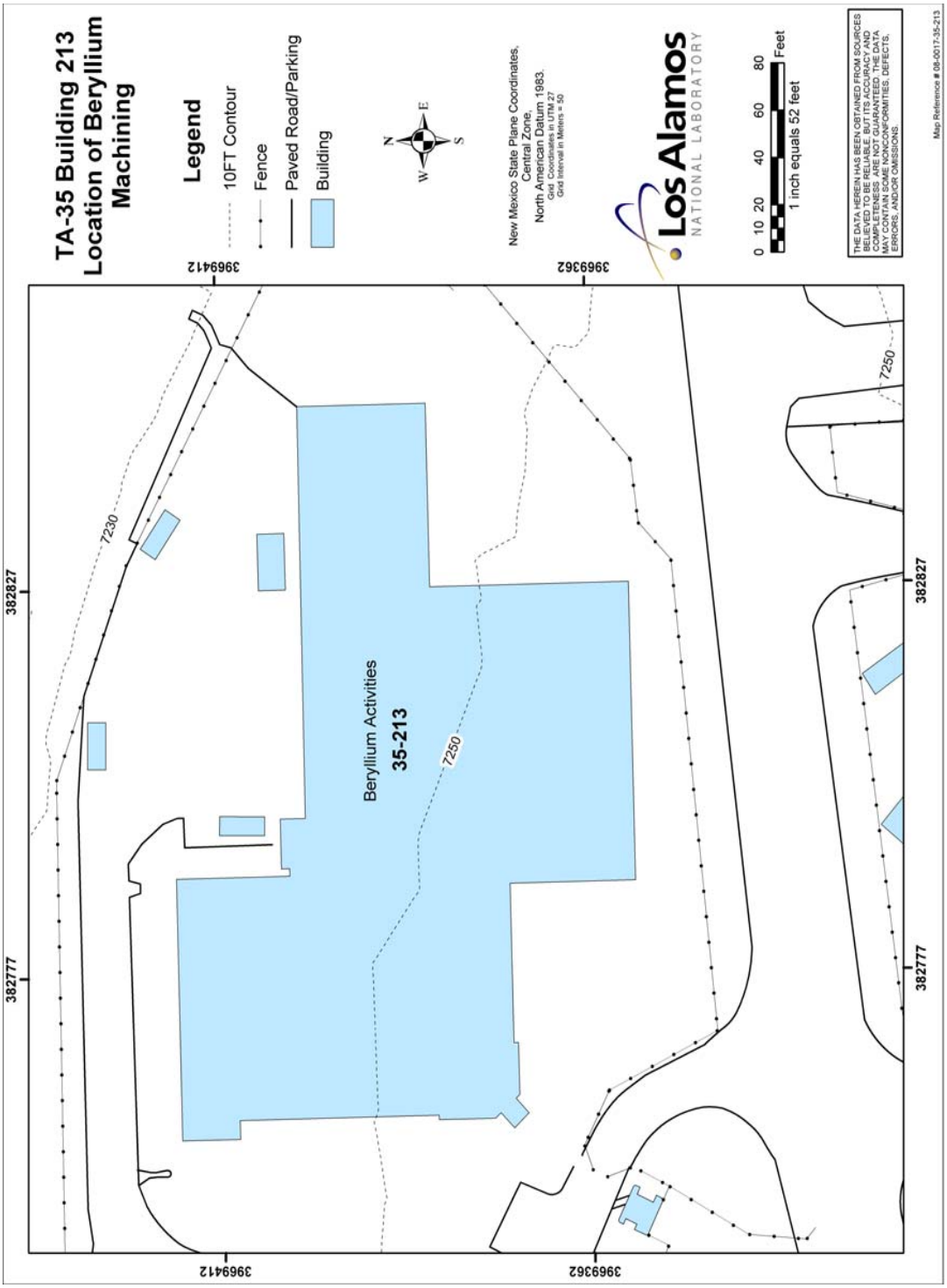


Emission Units: TA-3-141 and TA-3-66, Beryllium Activities.

Figure 2.2-8. Location of Emission Units TA-3-141 and TA-3-66, Beryllium Activities.

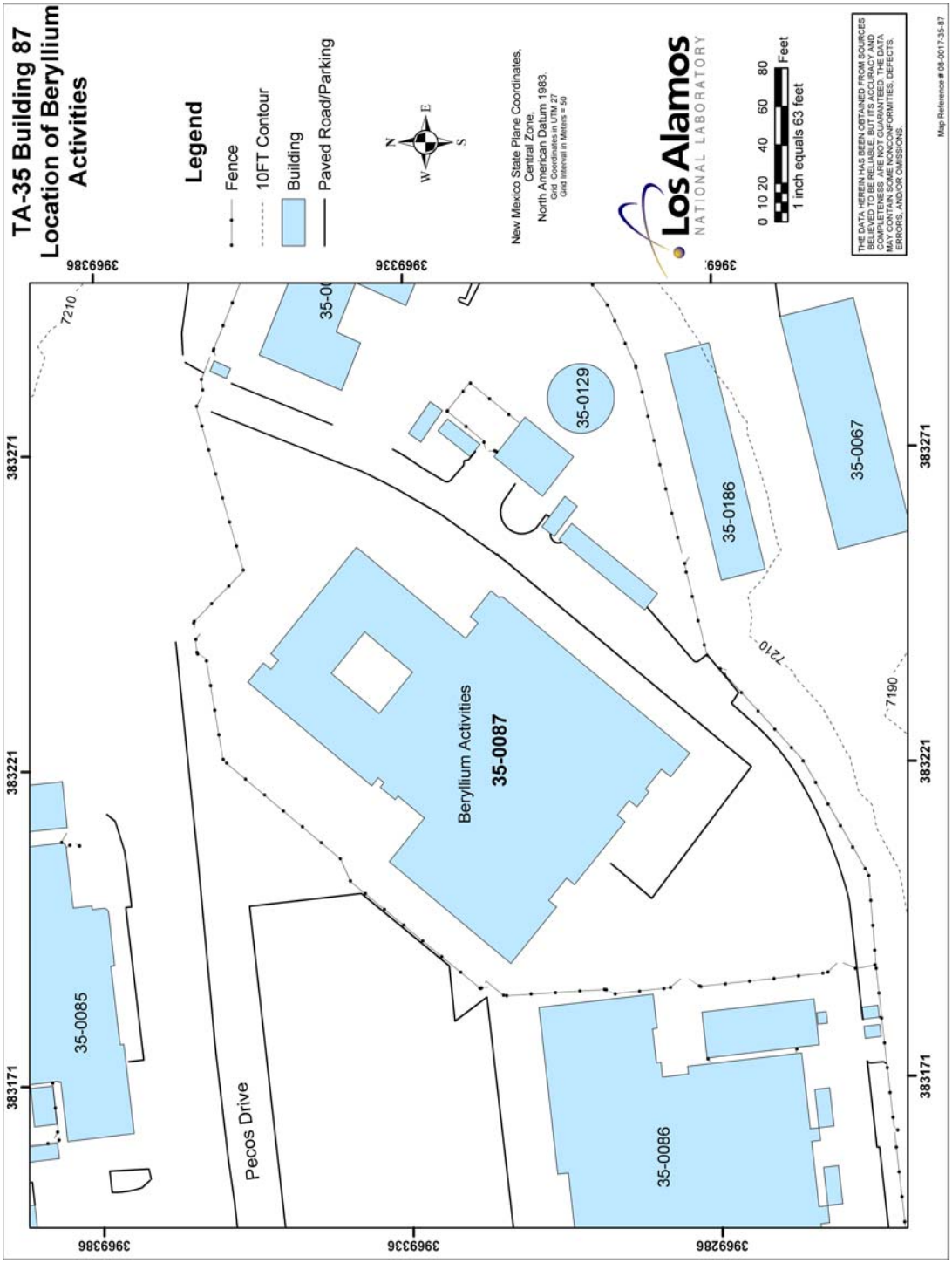
Location of Beryllium Activities at TA-55 and TA-35.

Figure 2.2-9. Location of Beryllium Activities at TA-55 and TA-35.



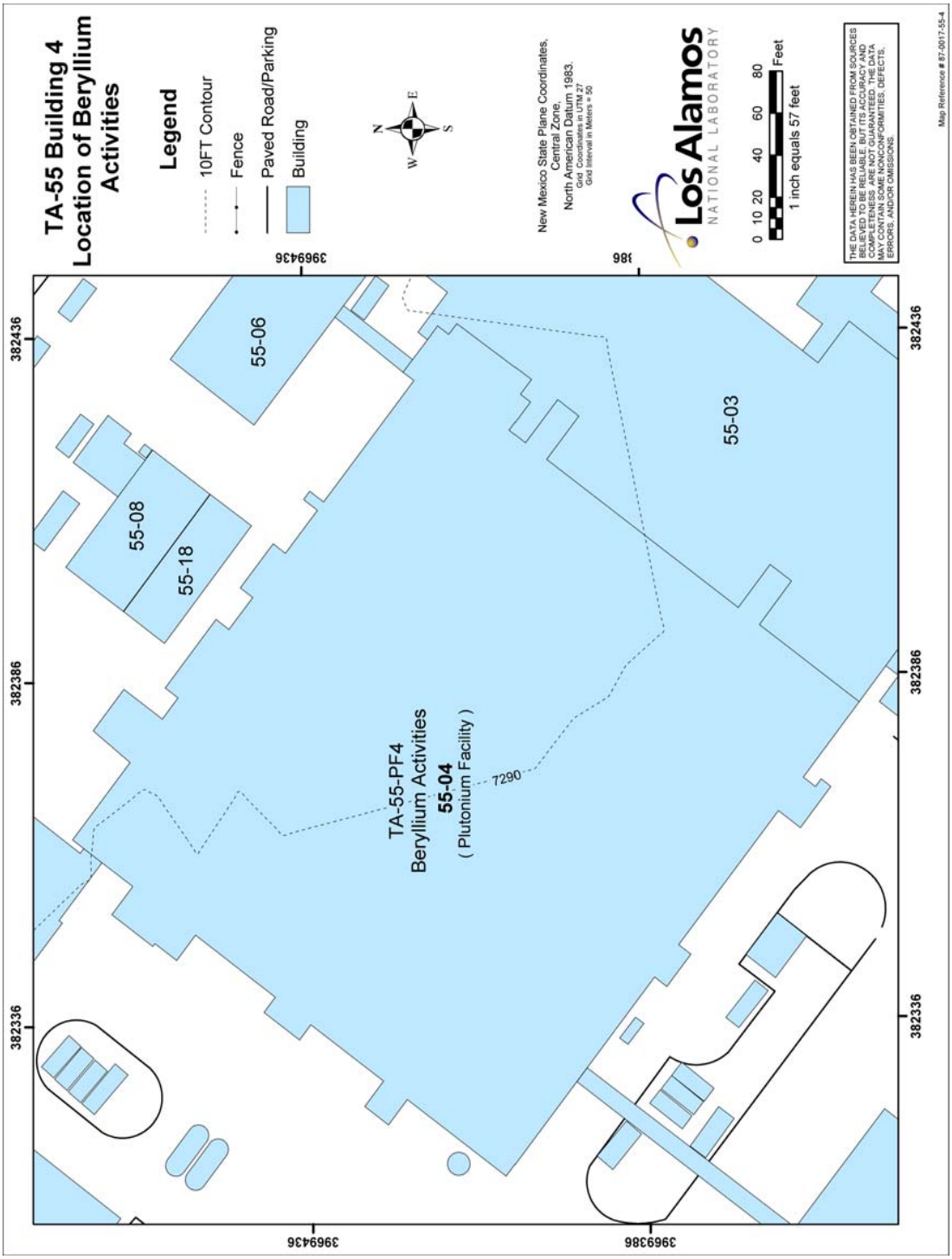
Emission Units: TA-35-213, Beryllium Activities.

Figure 2.2 10. Location of Emission Unit TA-35-213, Beryllium Activities.



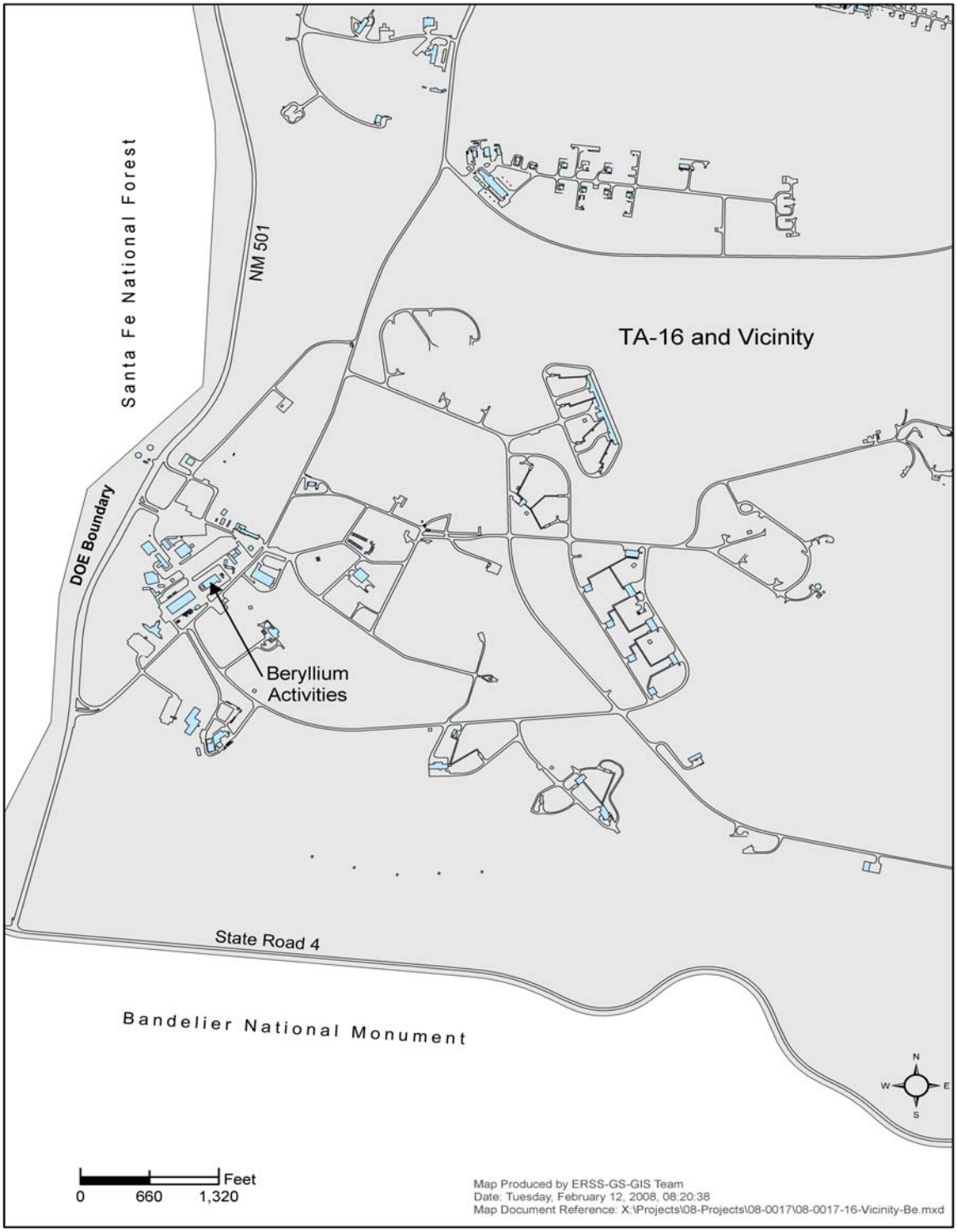
Emission Unit: TA-35-87, Beryllium Activities.

Figure 2.2.11. Location of Emission Unit TA-35-87, Beryllium Activities.



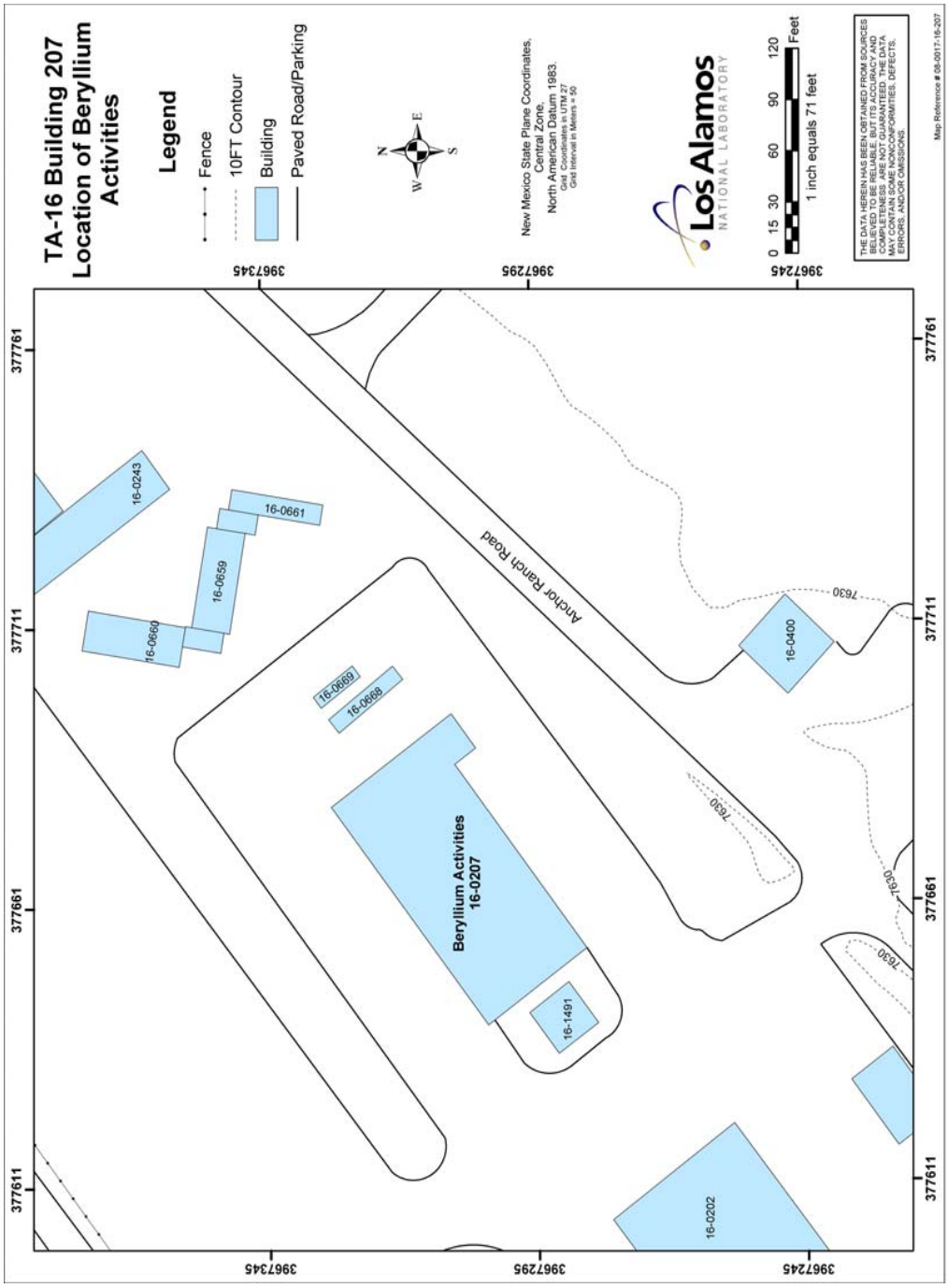
Emission Unit: TA-55-PF4, Beryllium Activites.

Figure 2.2.12. Location of Emission Unit TA-55-PF4, Beryllium Activities.



Location of Beryllium Activities at TA-16.

Figure 2.2-13. Location of Beryllium Activities at TA-16.



Emission Units: TA-16-207, Beryllium Activities.

Figure 2.2-14. Location of Emission Unit TA-16-207, Beryllium Activities.

2.3 Boilers and Heaters

2.3.1 General Description of Source Category

LANL maintains and operates many small natural-gas-fired boilers, personal comfort heaters and furnaces, personal use water heaters, and combined comfort heating, ventilation, and air conditioning (HVAC) units with small gas heaters. There are approximately 170 small boilers that range in size from 0.075 MMBtu/hr to 14.6 MMBtu/hr for the maximum nameplate heat input capacity. There are numerous small furnaces, heaters, and HVAC units in addition to the boilers with an average size range of less than 0.5 MMBtu/hr. The majority of boilers, and all furnaces and heaters, are used solely to provide comfort heating and hot water for personal use. Larger boilers that are not included here are located at the TA-3 Power Plant and are discussed in Section 2.9. The three larger boilers at the TA-21 Steam Plant (Emission Units TA-21-357-1, -2, and -3) are permanently shutdown and are not included in this application.

Because LANL is located at a high elevation, the boilers do not operate at nameplate capacity. The maximum heat input capacity, derated for altitude, is referred to as the design rate. For atmospheric boilers, the design rate reflects a 30% decrease in input rating consistent with the LANL Engineering Standards Manual (Chapter 6) specification for this altitude (derate 4% for each 1,000 feet above sea level at an average elevation of 7,500 feet). For forced draft boilers, the design rate reflects a 15% decrease in input rating.

More than 80% of the LANL boilers operate on a seasonal basis. The boilers that operate seasonally are mainly those used to provide comfort space heat and to keep water tanks and cooling towers from freezing. The majority of boilers at LANL are less than 5 MMBtu/hr in size, with only three boilers greater than 10 MMBtu/hr heat input.

A summary description of boiler size ranges and functions are provided in Table 2.3-1. As shown in Table 2.3-1, most of the boilers qualify as insignificant emissions units under NMED Title V operating permit requirements.

There are 12 gas-fired boilers that do not meet the insignificant emission unit criteria established by NMED. Each of the 12 boilers is currently within Permit P100M2. These boilers are listed in Table 2.3-2.

Heaters and furnaces are used solely to provide either hot water for personal use or building heat for personal comfort. All heaters and furnaces have a design rate less than or equal to 5 MMBtu/hr and qualify for insignificant activity #3 in the NMED insignificant activity list.

Table 2.3-1. Miscellaneous Boiler Summary Description

Percentage of Boilers Within Category	Approximate Sum of Design Ratings for Category (MMBtu/hr)	Functional Category	Design Rate Range (MMBtu/hr)	Status[(a)]
75.7	220.4	Comfort Heat	≤5	NMED Insignificant Activity #3
9.8	20.2	Comfort and Process Heat	<2.3	NMED Insignificant Activity #1
7.5	42.5	Comfort and Process Heat, Low NO_x	<6.3	NMED Insignificant Activity #1
6.9	90.9	Comfort and/or Process Heat	>5.3 and <12.4	Non-Exempt

(a)NMED List of Insignificant Activities, March 24, 2005.

Table 2.3-2. List of Non-Exempt Boilers

Location (Technical Area-Building)	Emission Unit No.	Equipment ID (Manufacturer/ Model No.)	Maximum and Design Input Rating (MMBtu/hr)	Air Pollution Control System
TA-16-1484	TA-16-1484-BS-1	Sellers/183H.P.-SH-LN390	7.47/6.35	Low-NO_x
TA-16-1484	TA-16-1484-BS-2	Sellers/183H.P.-SH-LN390	7.476.35	Low-NO_x
TA-48-1	TA-48-1-BS-1	Sellers/15 Seniors-150	6.28/5.34	None
TA-48-1	TA-48-1-BS-2	Cleaver Brooks/CB-700-150	6.28/5.34	None
TA-48-1	TA-48-1-BS-6	Cleaver Brooks/CB-700-200	8.40/7.14	None
TA-53-365	TA-53-365-BHW-1	Sellers/15 Seniors-2-200-w	8.37/7.11	None
TA-53-365	TA-53-365-BHW-2	Sellers/15 Seniors-2-200-w	8.37/7.11	None
TA-55-6	TA-55-6-BHW-1	Sellers/350H.P.-W-LN490	14.6/12.4	Low-NO_x
TA-55-6	TA-55-6-BHW-2	Sellers/350H.P.-W-LN490	14.6/12.4	Low-NO_x
TA-59-1	TA-59-1-BHW-1	Cleaver Brooks/CB-700-150	6.28/5.34	None
TA-59-1	TA-59-1-BHW-2	Cleaver Brooks/ CB-700-150	6.285.34	None
TA-50-2	TA-50-2-BS-1	Superior/M56-5-1500-S260	12.6/10.7	None

2.3.2 Operating Schedule

The majority of the boilers, furnaces, and heaters at LANL operate seasonally. The typical heating season starts at the beginning of October and ends mid-May. During the heating season, the units can operate continuously. The process boilers operate as needed.

2.3.3 Process Flow Diagram

A general process flow diagram for an external combustion unit is provided in Figure 2.3-1.

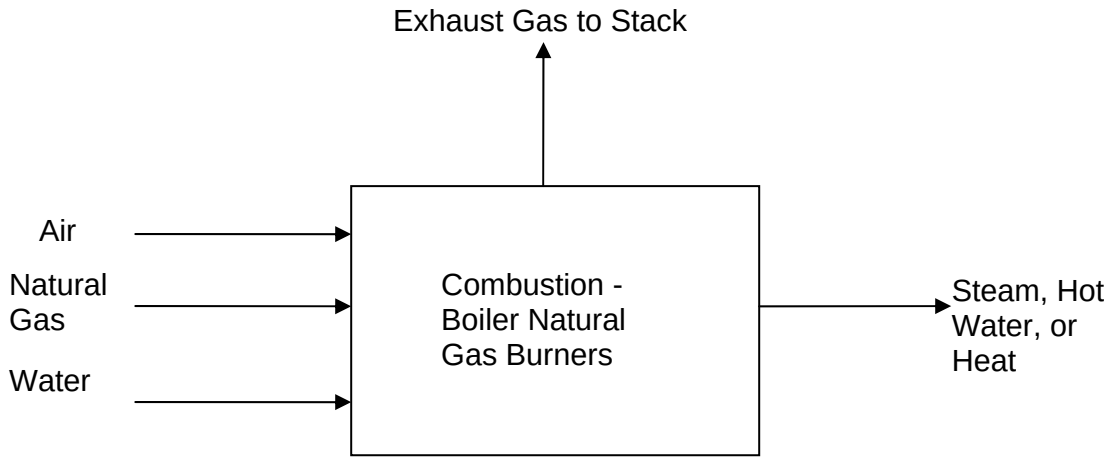


Figure 2.3-1. Process Flow Diagram for Boilers and Heaters.

2.3.4 Emissions

Combustion of natural gas in boilers and heaters generates emissions of criteria pollutants (NO_x, CO, SO_2, PM, VOCs) and small quantities of HAPs. Emission factors used to estimate emissions are shown in Table 2.3-3. Natural gas emission factors were taken from AP-42, 7/98, Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2 for criteria pollutants and Tables 1.4-3 and 1.4-4 for HAPs.

Table 2.3-3. Emission Factors for Miscellaneous Boilers and Heaters

Criteria Pollutant	Emission Factors[(a)] for Natural Gas Uncontrolled Boilers ($lb/10^6ft^3$)
NO_x	100
CO	84
SO_x	0.6
PM, PM_{10}, or $PM_{2.5}$[(b)]	7.6[(c)]
VOC	5.5
HAP	1.89

(a) Emission factors, unless otherwise indicated, AP-42, 7/98, Section 1.4, Natural Gas Combustion, Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4.
(b) $PM_{2.5}$ is particulate matter with diameter less than 2.5 microns.
(c) For natural gas combustion, factors for $PM_{2.5}$ and PM_{10} are equivalent to the PM factor.

Maximum annual criteria pollutant and HAP emission rates were calculated using the following general formula:

$$Emission\,Rate(\frac{lb}{yr}) = [Emission\,Factor(\frac{lb}{MMCF\ gas})]\ [Gas\,Input\,Rate(\frac{MMCF\ gas}{yr})]$$

Annual emissions for each pollutant were calculated by multiplying the annual natural gas input by the appropriate emission factor for each pollutant. The annual fuel limit used in calculating annual emissions is 870 MMscf per year for all units combined. This value is the current annual fuel limit in Permit P100M2. Emission estimates are shown in Table 2.3-4. The emission estimates do not take credit for any reduction in NO_x emissions due to low-NO_x burners, which are present on some boilers.

Table 2.3-4. Emissions Estimates for Miscellaneous Boilers and Heaters

Criteria Pollutant	Total (tpy)
NO_x	43.5
CO	36.5
SO_x	0.3
PM, PM_{10}, or $PM_{2.5}$	3.3
VOC	2.4
HAP	0.8

2.3.5 Emissions Control Equipment

More than 20% of the boilers at LANL are equipped with low-NO_x burners. Low-NO_x burners reduce NO_x emissions by staging the combustion process, which partially delays combustion. This results in reduced flame temperatures and suppressed NO_x formation.

2.3.6 Operational Plan

The majority of boilers and heaters at LANL operate seasonally during cold weather months. During this operational period, the units start up and shut down automatically in response to heating demand. Typically, the systems are always operating at some level during the heating season until they are shut down in the spring. Startups and shutdowns are minimal and emissions at those times are not expected to differ

substantially from steady-state emissions. The units are checked periodically during the heating season to ensure proper operation. Routine and preventive maintenance are performed during the warm weather months.

2.3.7 Applicable Requirements

Unit-specific applicable requirements, which apply to the miscellaneous boilers and heaters, are listed in Table 2.3-5 followed by a citation of the basis for the requirement.

2.3.8 Location of Boilers and Heaters

The location of applicable boilers can be found in Figures 2.3-2 through 2.3-11.

Table 2.3-5. Applicable Requirements for Boilers and Heaters and Proposed Changes to the LANL Operating Permit (P100M2)

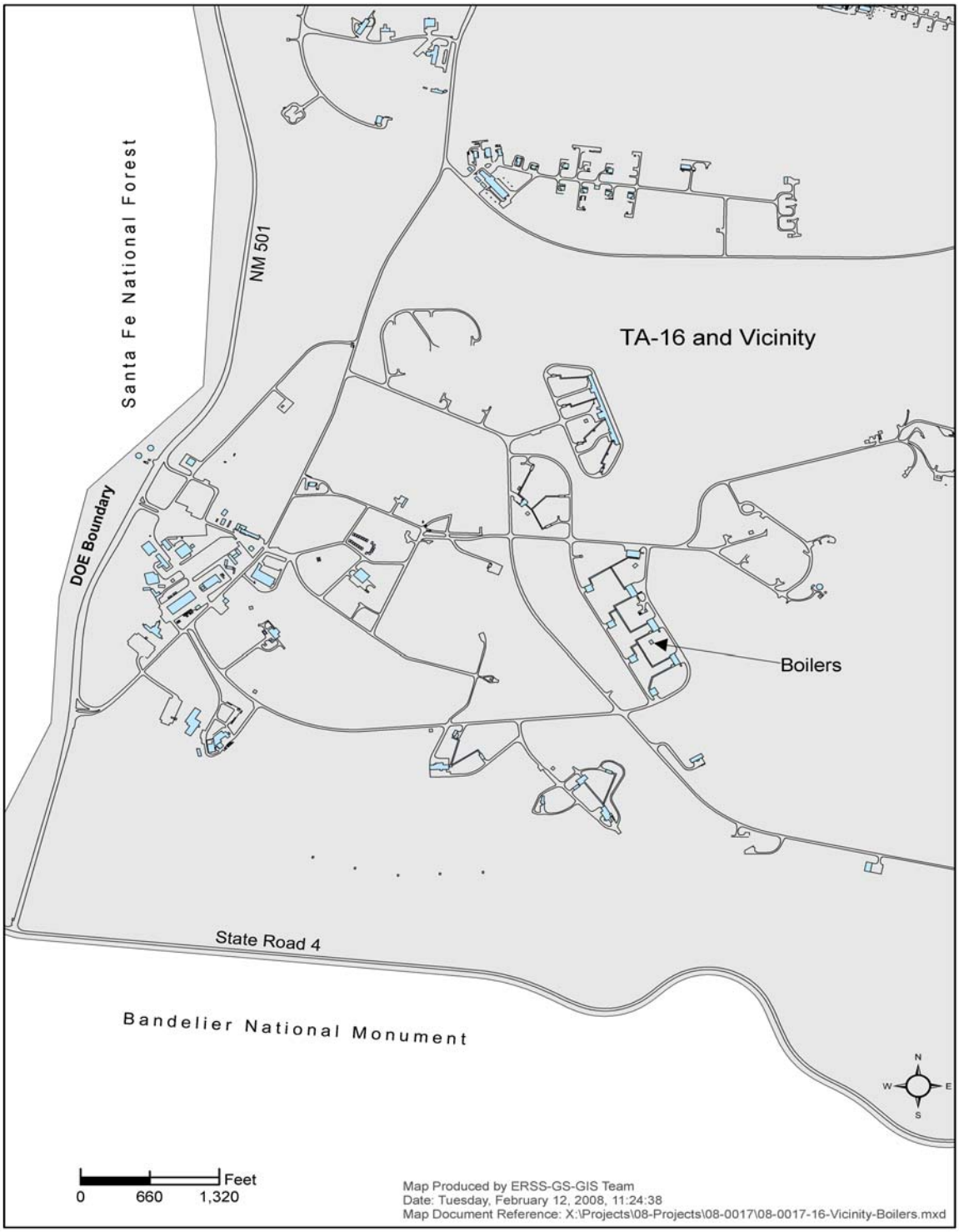
Existing P100M2 Permit Conditions – Boilers and Heaters	Proposed Changes
2.3 Boilers and Heaters All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):	1) Emission Units TA-55-6-BHW-1 and TA-55-6 BHW-2 have Low-NO_x Controls 2) Emission Unit at TA-50-2 is designated as TA-50-2-BS-1 and the correct model # is M56-5-1-1500-S260 3) Request removal of Emission Units TA-21-351-1 TA-21-357-2 TA-21-357-3 These Units have been decommissioned.

Emission Unit No.	Location/Building	Manufacturer/Model	Maximum Heat Input (nameplate)[1] MMBtu/hr	Type of Control
TA-16-1484-BS-1	TA-16-1484	Sellers/183H.P.-SH-LN390	7.47	Low-NO_x
TA-16-1484-BS-2	TA-16-1484	Sellers/183H.P.-SH-LN390	7.47	Low-NO_x
TA-48-1-BS-1	TA-48-1	Sellers/15 Seniors-150	6.28	None
TA-48-1-BS-2	TA-48-1	Cleaver Brooks/CB-700-150	6.28	None
TA-48-1-BS-6	TA-48-1	Cleaver Brooks/CB-700-200 1558	8.40	None
TA-53-365-BHW-1	TA-53-365	Sellers/15 Seniors-2-200-w	8.37	None
TA-53-365-BHW-2	TA-53-365	Sellers/15 Seniors-2-200-w	8.37	None
TA-55-6-BHW-1	TA-55-6	Sellers/350 H.P. W-LN490	14.6	None
TA-55-6-BHW-2	TA-55-6	Sellers/350 H.P. W-LN490	14.6	None
TA-59-1-BHW-1	TA-59-1	Cleaver Brooks/CB-700-150	6.28	None
TA-59-1-BHW-2	TA-59-1	Cleaver Brooks/CB-700-150	6.28	None
TA-50-2	TA-50-2	Superior/MS6-5-1500-S260-M	12.6	None
TA-21-357-1	TA-21-357	Industrial Boiler/3WB350HCG0	12.1	None
TA-21-357-2	TA-21-357	Industrial Boiler/3WB350HCG0	12.1	None
TA-21-357-3	TA-21-357	Industrial Boiler/3WB350HCG0	12.1	None

[1]Emission estimates from these units shall be based on the maximum heat input rating derated for altitude.

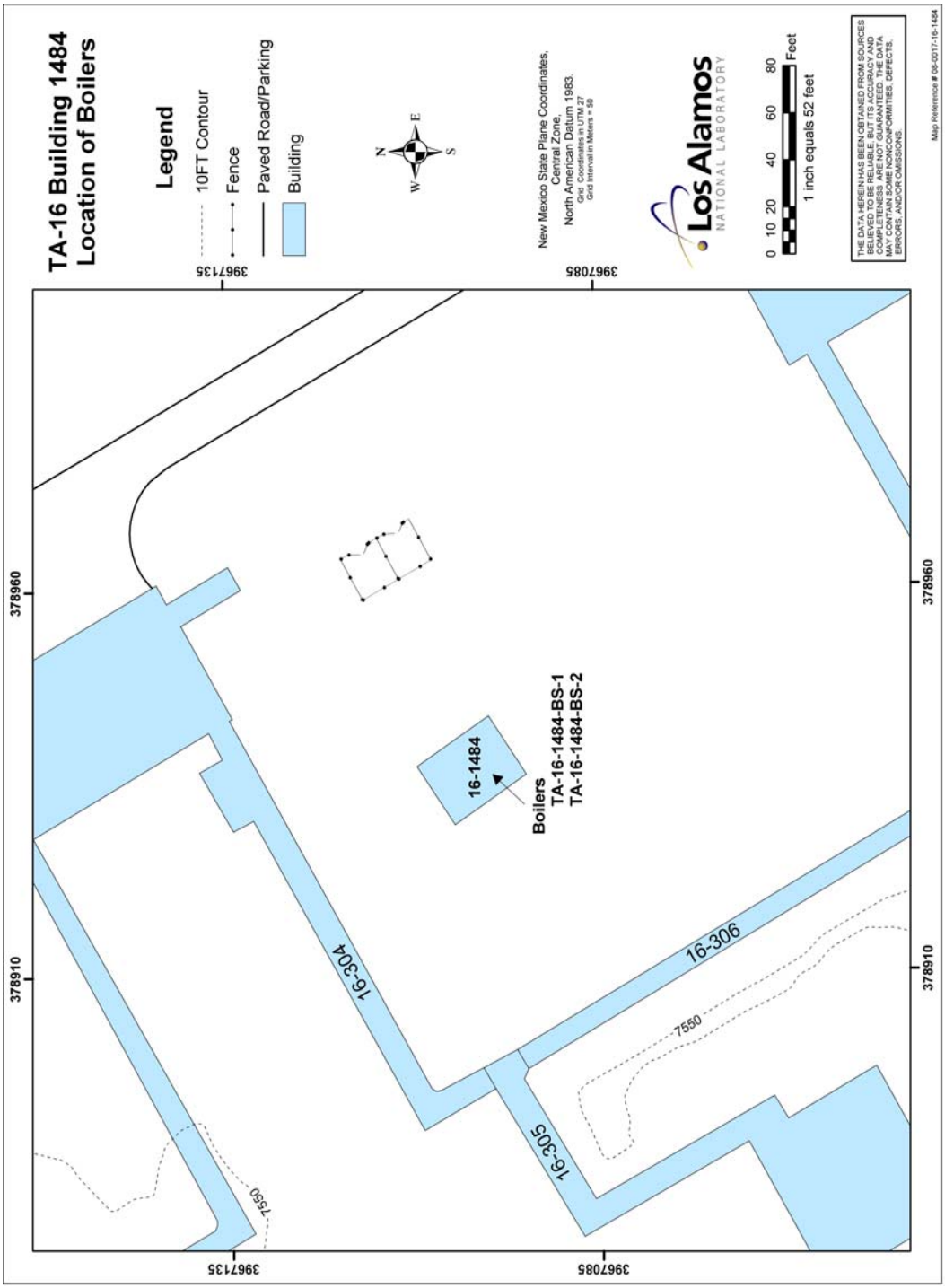
2.3.1 Applicable Requirements 2.3.1.1 The following requirements apply to these emission units: 40 CFR Part 60, Subpart Dc (Units TA-55-6-BHW-1 and TA-55-6-BHW-2 only) and 20.2.61 NMAC.	No Change

Existing P100M2 Permit Conditions – Boilers and Heaters	Proposed Changes
2.3.2 Emission Limits **Source** / **Allowable Emission Limits** **NO_x (tpy)** / **CO (tpy)** / **PM or PM_{10} (tpy)** / **SO_2 (tpy)** / **VOC (tpy)** All Boilers and Heaters[1] / 80 / 80 / 50 / 50 / 50 [1] Excludes TA-3-22 Power Plant addressed in Condition 2.9.	No Change
2.3.2.1 Visible emissions shall not equal or exceed an opacity of 20%. The conditions of Section 2.3.2 are pursuant to 40 CFR 50 Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.	No Change
2.3.3 Operational Requirements 2.3.3.1 Natural gas usage is limited to 870 MMscf/yr, 12-month rolling total, for all boilers listed in Section 2.3 and all other boilers and heaters at LANL that qualify as insignificant activities, except Emission Units TA-21-357-1, TA-21-357-2, and TA-21-357-3.	Emission Units at TA-21 have been decommissioned.
2.3.3.2 For Emission Units TA-21-357-1, TA-21-357-2, and TA-21-357-3, natural gas usage is limited to 60 MMscf/yr and fuel oil usage to 10,000 gal/yr, 12-month rolling total. The conditions of Section 2.3.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.	Delete Condition: Emission units at TA-21 have been decommissioned.
2.3.4 Emissions Monitoring Requirements 2.3.4.1 Emission Units TA-21-357-1, TA-21-357-2, and TA-21-357-3: A volumetric flow meter shall be utilized to measure the total amount of natural gas being used on a monthly basis.	Emission units at TA-21 have been decommissioned.
2.3.4.2 Emission Units TA-55-6-BHW-1 and TA-55-6-BHW-2: A volumetric flow meter shall be utilized to measure the total amount of natural gas being used on a monthly basis.	No Change
2.3.4.3 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation. The conditions of Section 2.3.4 are pursuant to 20.2.70.302.C NMAC.	No Change
2.3.5 Recordkeeping 2.3.5.1 All boilers and heaters, including insignificant emission units: Records of total natural gas and fuel oil usage shall be kept on a monthly basis. This condition is pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.	The TA-21 boilers were the only boilers to have the potential to use fuel oil. Recommend deletion of fuel oil records requirement.
2.3.6 Reporting 2.3.6.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2. This condition is pursuant to 20.2.70.302.E NMAC.	No Change



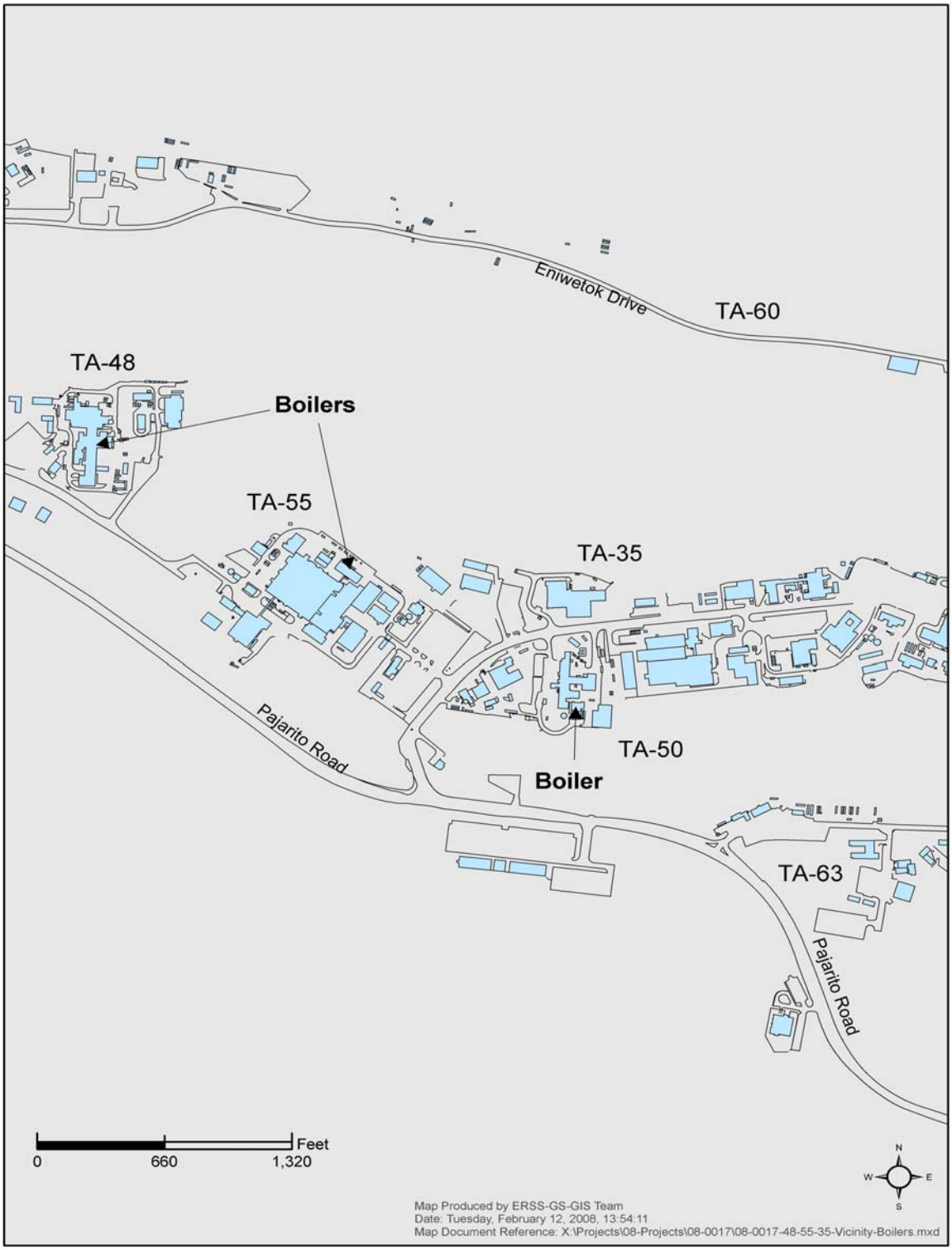
Location of Boilers at TA-16.

Figure 2.3-2. Location of Boilers at TA-16.



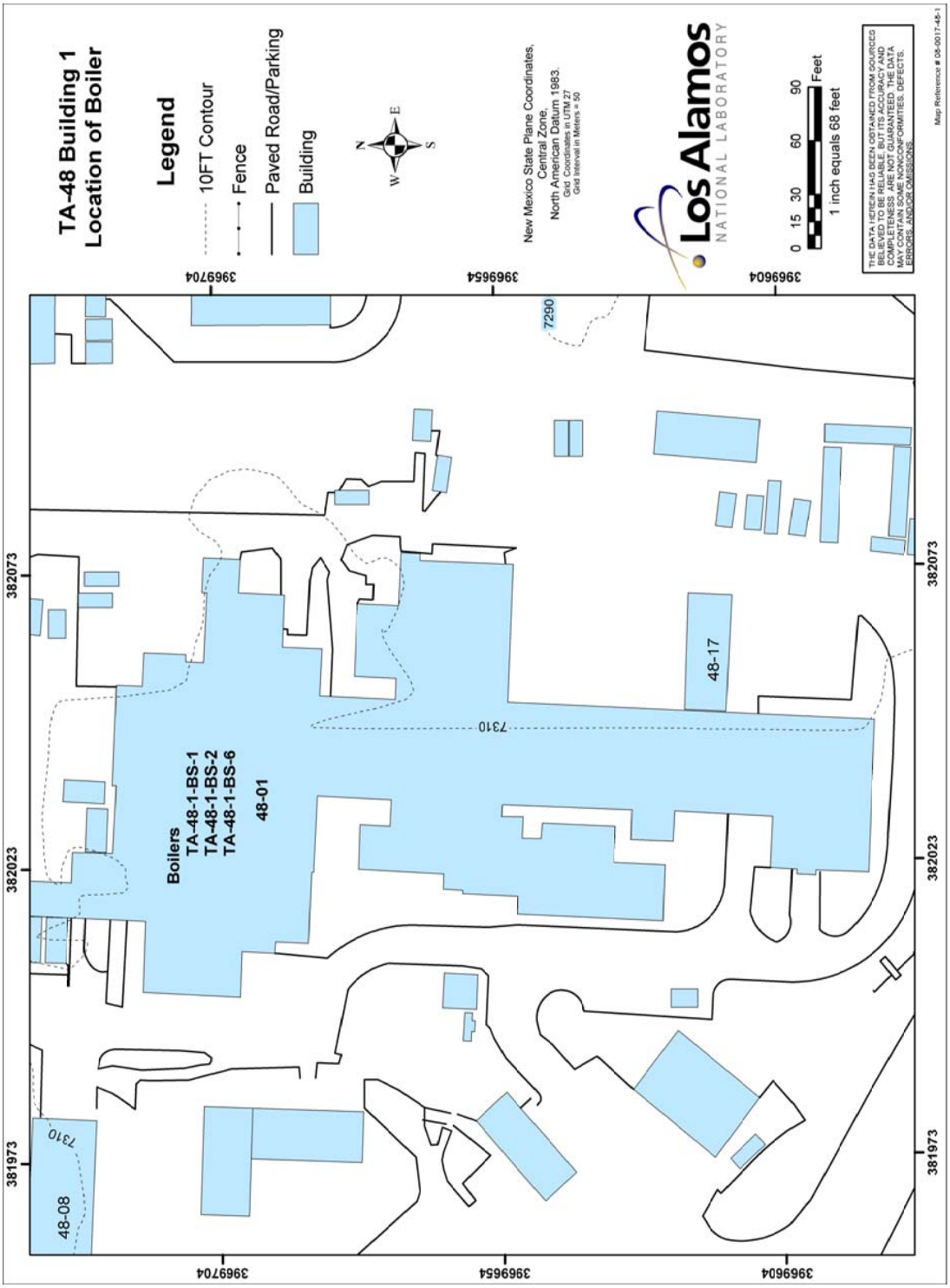
Emission Units: TA-16-1484-BS-1 and BS-2, Boilers.

Figure 2.3-3. Location of Emission Units TA-16-1484-BS-1 and TA-16-1484-BS-2, Boilers.



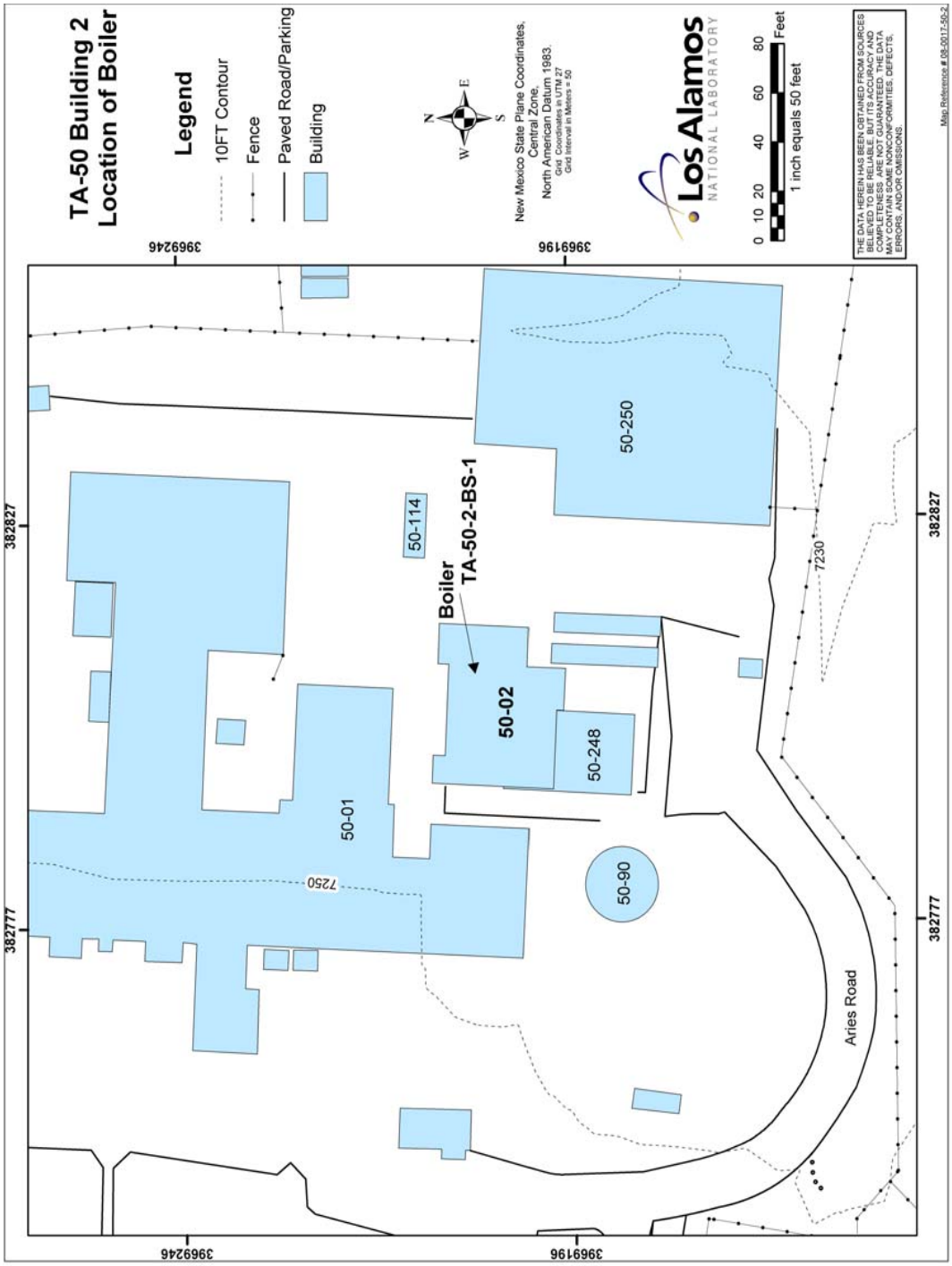
Location of Boilers at TA-48, TA-55, and TA-50.

Figure 2.3-4. Location of Boilers at TA-48, TA-55, and TA-50.



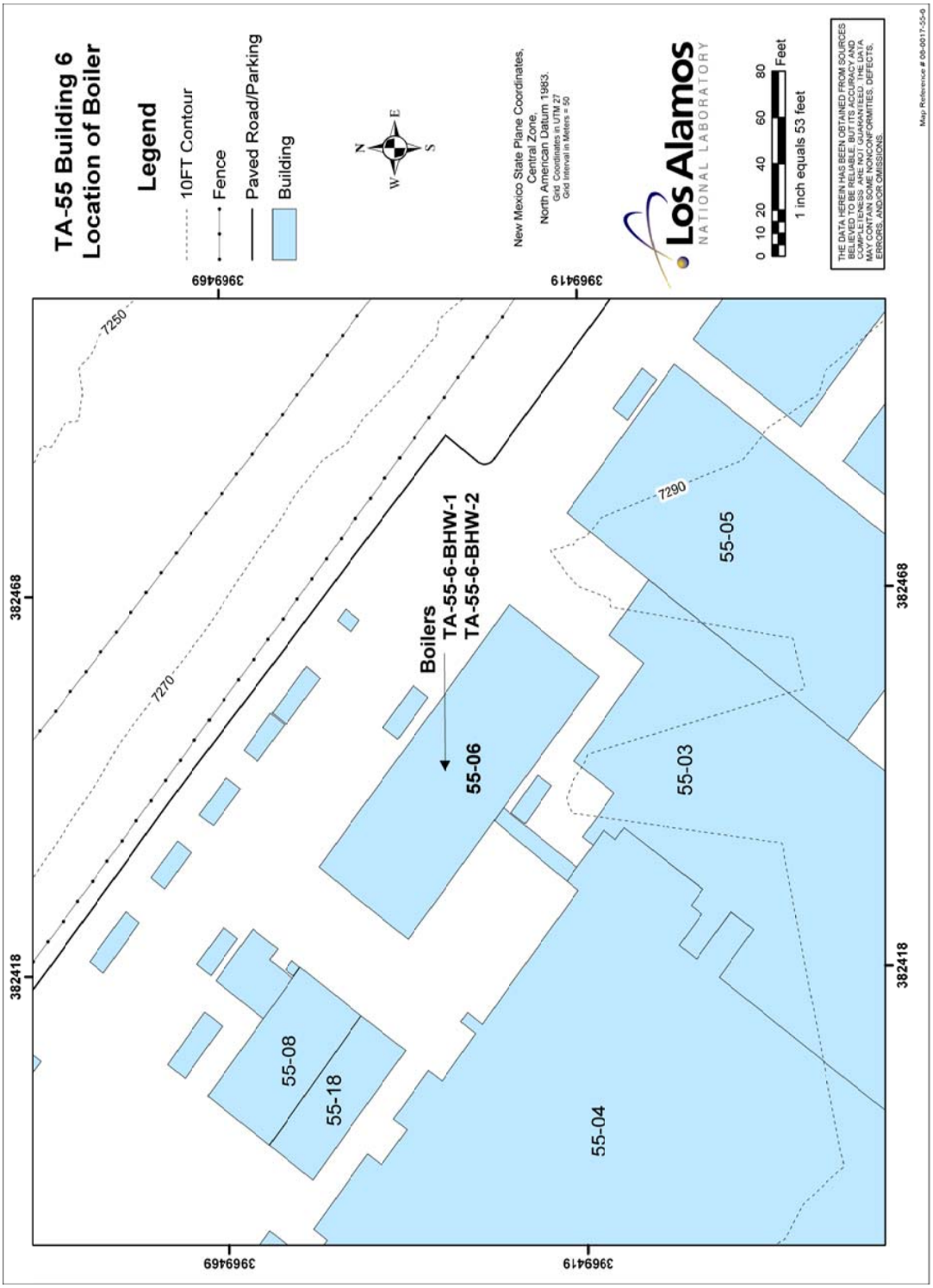
Emission Units: TA-48-1-BS-1, BS-2, BS-6, Boilers.

Figure 2.3-5. Location of Emission Units TA-48-1-BS-1, TA-48-1-BS-2, and TA-48-1-BS-6, Boilers.



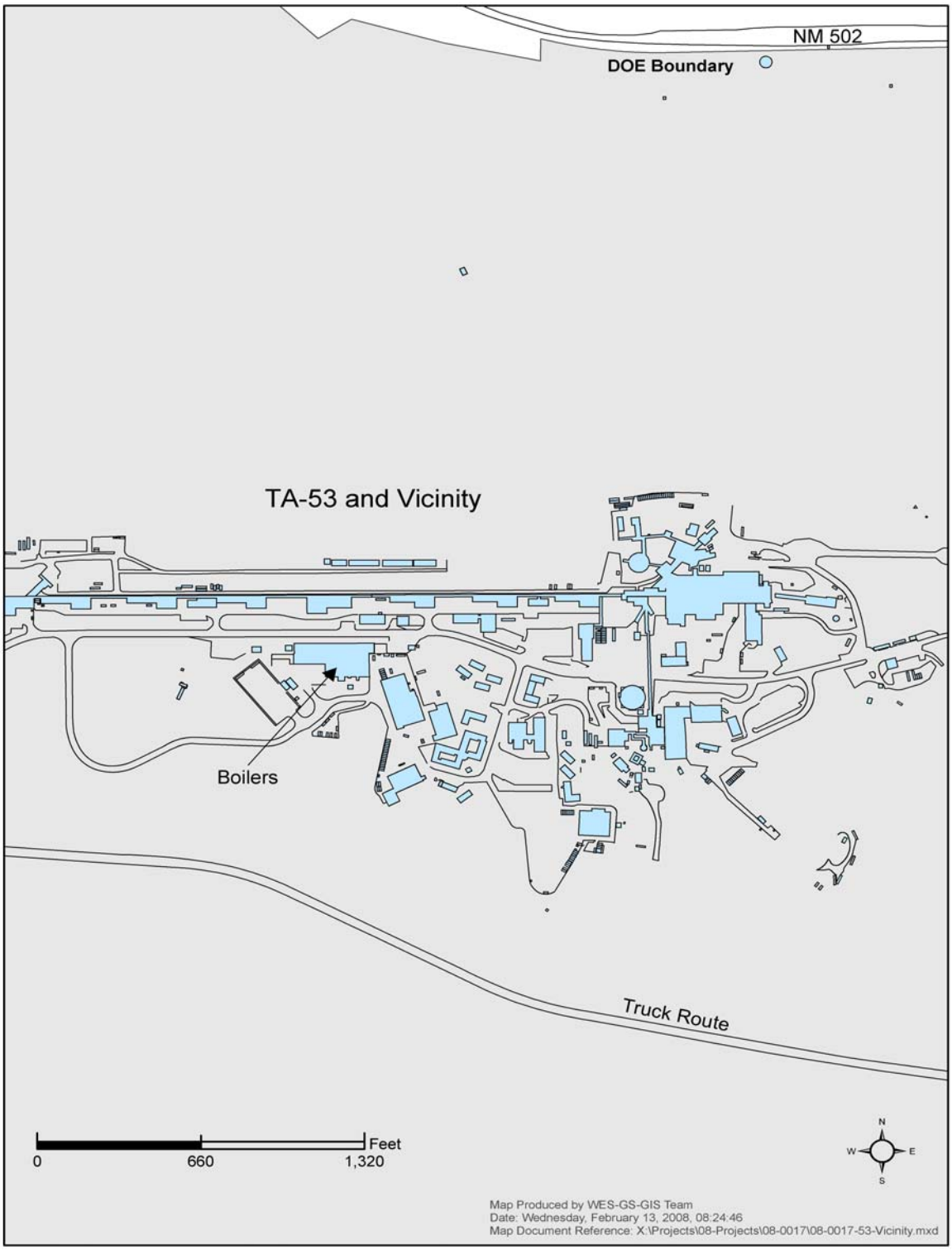
Emission Unit: TA-50-2-BS-1, Boiler.

Figure 2.3-6. Location of Emission Unit TA-50-2-BS-1, Boiler.



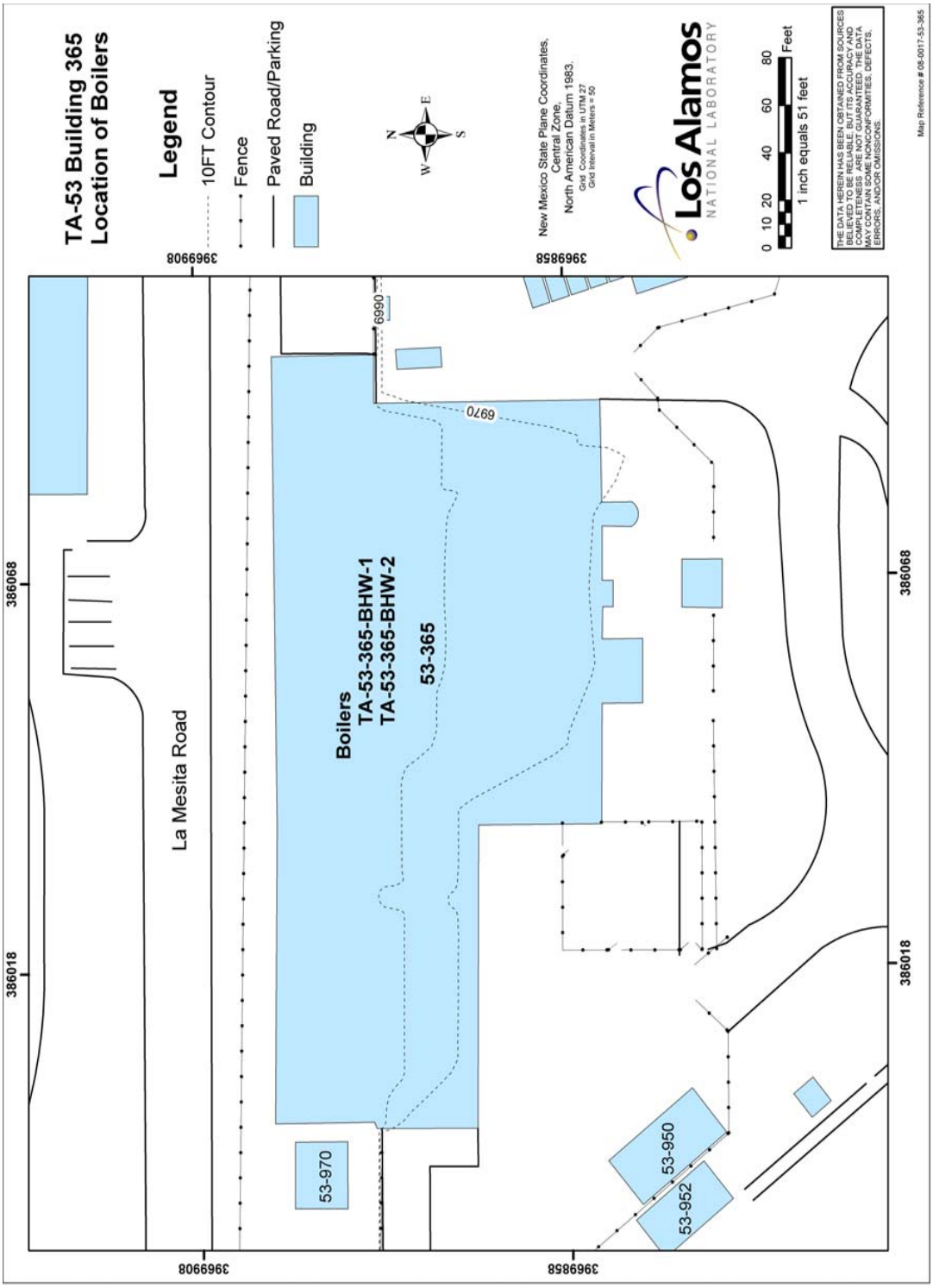
Emission Units: TA-55-6-BHW-1 and BHW-2, Boilers.

Figure 2.3-7. Location of Emission Units TA-55-6-BHW-1 and TA-55-6-BHW-2, Boilers.



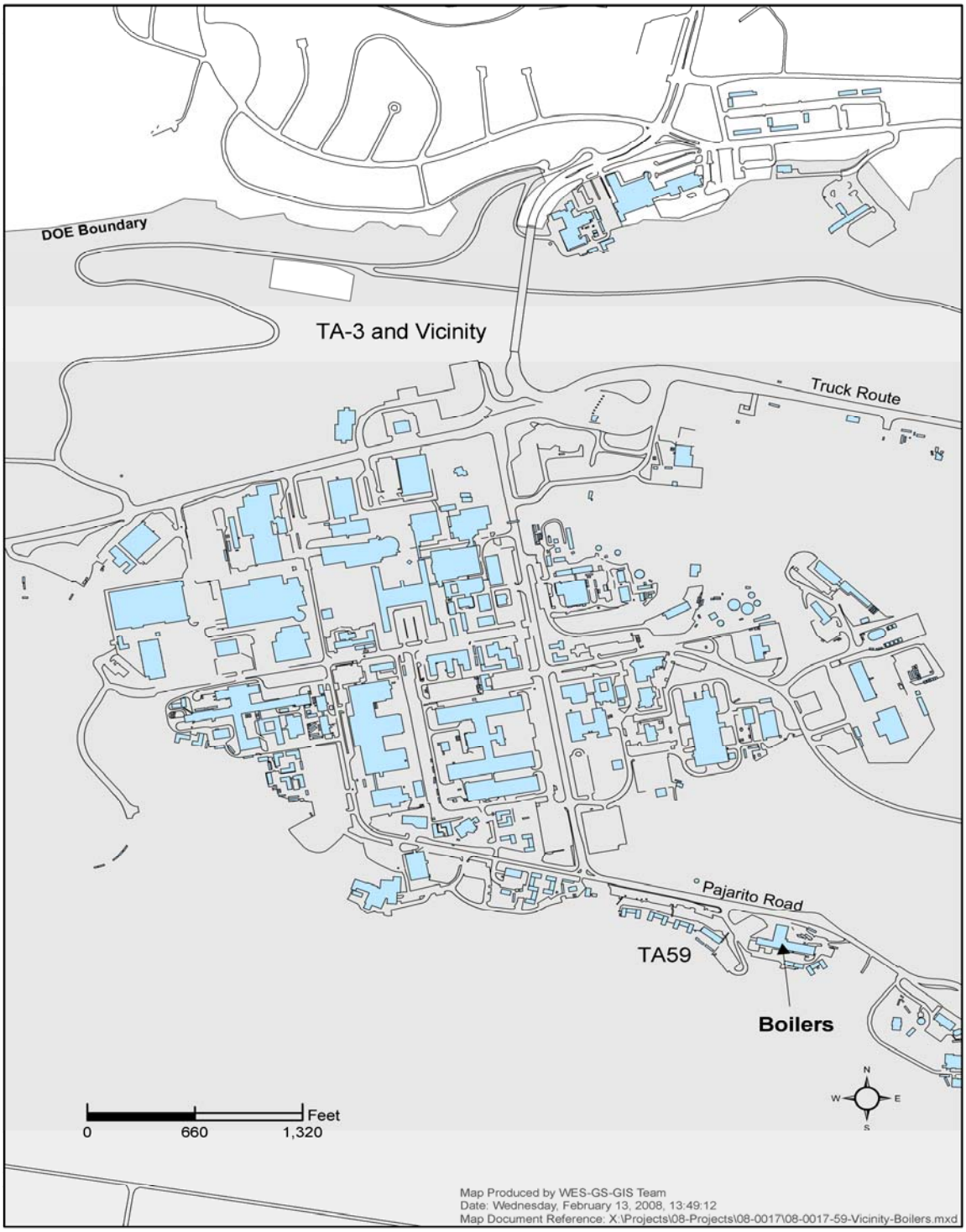
Location of boilers at TA-53.

Figure 2.3-8. Location of Boilers at TA-53.



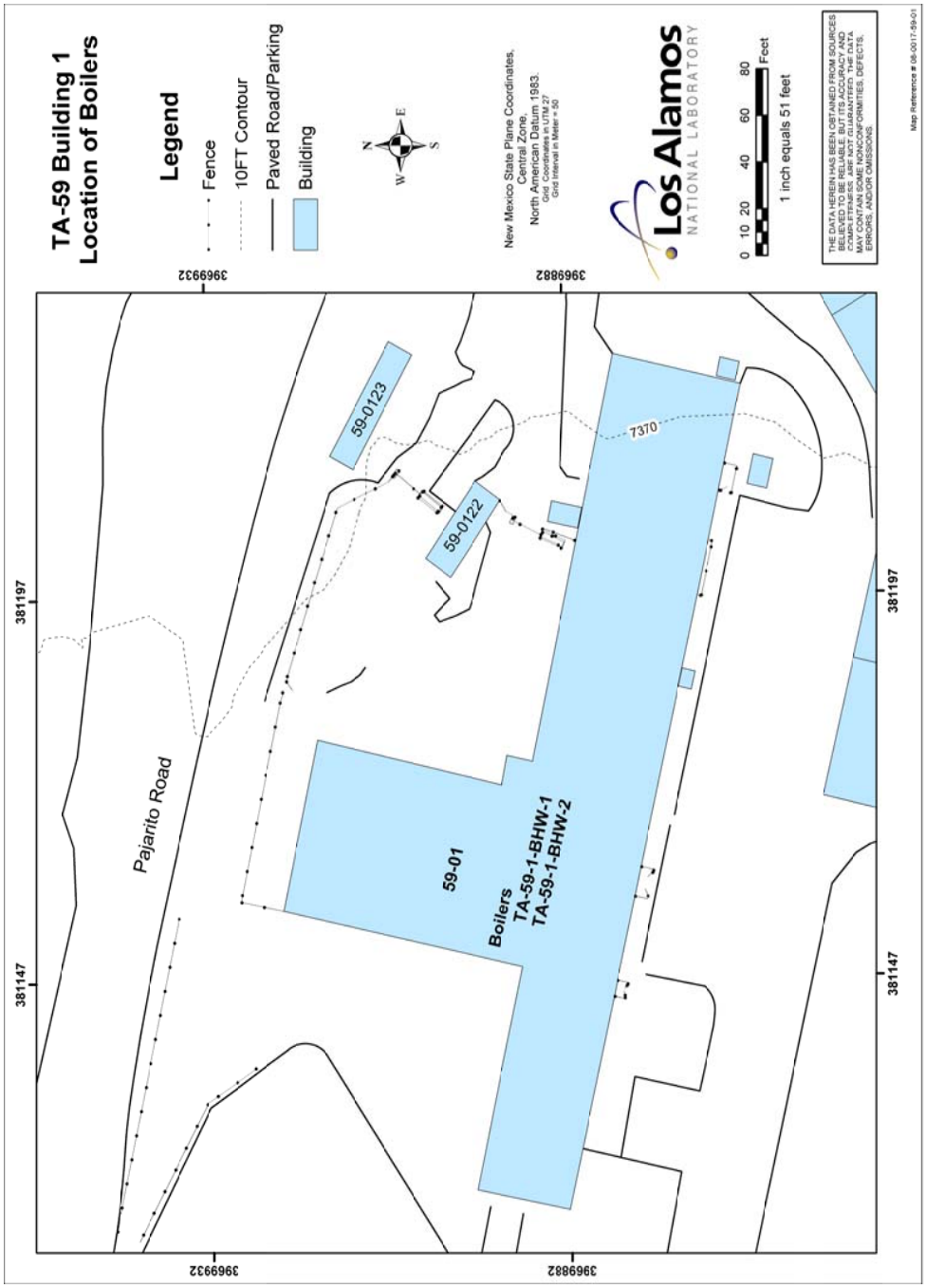
Emission Units: TA-53-365-BHW-1 and BHW-2, Boilers.

Figure 2.3-9. Location of Emission Units TA-53-365-BHW-1 and TA-53-365-BHW-2, Boilers.



Location of boilers at TA-59.

Figure 2.3-10. Location of Boilers at TA-59.



Emission Units: TA-59-1-BHW-1 and BHW-2, Boilers.

Figure 2.3-11. Location of Emission Units TA-59-1-BHW-1 and TA-59-1-BHW-2, Boilers.

2.4 Carpenter Shops

2.4.1 General Description of Source Category

LANL operates two carpenter shops located at TA-15-563 and TA-3-38 that are applicable sources under 20.2.70 NMAC. The carpenter shop, located at TA-15-563, consists of various saws (band, radial, table, panel), drills, and sanding and shaping equipment. Small wooden structures made in this shop are used to support materials that undergo explosives testing. During the explosives testing the wooden structures are destroyed along with the materials being tested. This shop does not include any equipment for painting, varnishing, staining, or otherwise coating or finishing the wooden structures. Routine operations involve processing soft wood (>90% pine) and, on occasion, other materials such as cardboard, lexan, foam, plastics, and pressure-treated wood. No hardwood is processed in this carpenter shop.

A local exhaust ventilation system removes sawdust from TA-15-563. The exhaust system vents to a simple cyclone to capture large wood particles. This exhaust system was designed to meet Occupational Safety and Health Administration standards and the American Conference of Governmental Industrial Hygienists Threshold Limit Values for worker exposure to wood dust. It is industry practice to collect wood dust and shavings from new woodworking operations as a standard worker safety and housekeeping practice. For safety and housekeeping reasons, a cyclone or equivalent material collection device would be installed for any new shop regardless of any air quality requirements. For this reason, it was determined that the cyclone is an integral part of the process for woodworking and not pollution control equipment.

The carpenter shop, located at TA-3-38, built before 1960, consists of various saws, drill presses, grinders, and sanders. Activities involve some maintenance activities as well as the fabrication of shipping crates, cabinets and furniture, preparation of framing and plywood for construction sites, preparation of timbers for road crews, and, on occasion, assistance to outside agencies such as the Forest Service on request. The dust generated from these operations is vented through separate exhaust systems to one of two cyclones. Equipment that receives routine use or generates significant dust is vented through the exhaust system. There are no coating operations performed in this shop.

In addition to the two carpenter shops previously mentioned, LANL has several carpenter shops, for example, TA-3-142, TA-3-253, and TA-54-52, which are dedicated to maintenance work. The woodworking jobs include repairs and changes to doors, window frames, cabinets, desks and tables, trim work, gloveboxes, and trailer skirting. Equipment in these shops includes saws, grinders, sanders, shapers, drills, and planers. Carpenter shops that are dedicated to facility

maintenance activities qualify as a Trivial Activity #2.

In addition, LANL has a number of small pieces of woodworking equipment located in various Laboratory areas. Some are carried in the trucks of the craftsmen for use at the job site. Woodworking is performed outside and inside buildings. None of this equipment is ducted to exhaust systems. Individually, these pieces of equipment have potential emissions below 1 tpy of PM and are therefore insignificant. See Insignificant Activity #1.a. Insignificant and trivial activities are not discussed further in this section.

2.4.2 Operating Schedule

The TA-15-563 carpenter shop operates one shift per day. The wood must be staged, transported into the shop area, measured before being cut, and transported out of the shop area after being cut. The shop only makes wooden structures in support of explosives testing. Jobs are done as requested as researchers prepare for each test shot.

For TA-15-563, the estimate of the maximum capacity for the saws, drills, and sanding and shaping equipment is based on maximum operation of four hours per eight-hour shift. Maximum emissions estimates assume three shifts per day, four hours of operation per shift, seven days per week, and 52 weeks per year, for a maximum physical limitation on the hours of operation of 4,368 hours per year. It is estimated that the maximum process rate is 60 tons of wood per year with the maximum production rate of 5,000 structures per year. Actual hours are closer to eight hours per week and 50 weeks per year for approximately 400 hours per year. The typical process rate is approximately 20 tons of wood for a production rate of 1,000 structures per year.

Similar to the TA-15-563 carpenter shop, the TA-3-38 shop emissions are estimated based on a maximum physical limitation on the hours of operation of 4,368 hours per year. Maximum emissions estimates assume that the exhaust system is operating at a maximum rate. Actual hours are closer to 10 hours per week and 50 weeks per year for approximately 500 hours per year. Typically, only one exhaust system will be operating at any given time for a total exhaust flow rate no greater than 2,700 cubic feet per minute.

2.4.3 Process Flow Diagram

The process flow diagram is presented in Figure 2.4-1. It shows the process equipment and the air emissions release point.

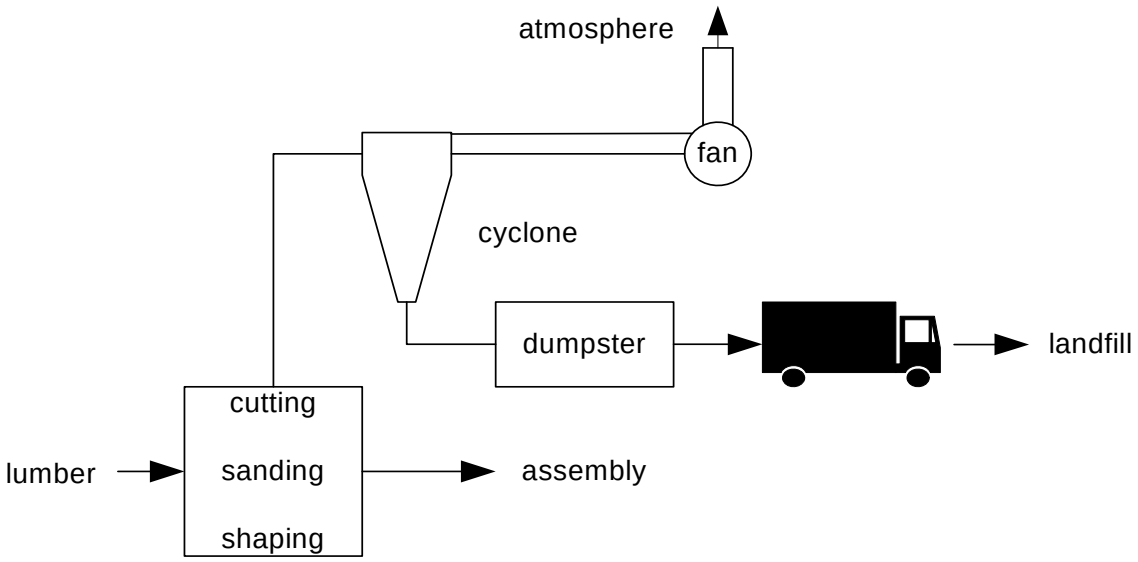


Figure 2.4-1. Process Flow Diagram for Carpenter Shops.

2.4.4 Emissions

Emissions of total suspended particulate (TSP) and PM_{10} were estimated using an emission factor from AP-42, 2/80, Section 10.4, Woodworking Waste Collection Operations, Table 10.4.1. The EPA archived this section on Woodworking Waste Collection Operations, but these old emissions factors are used below because no new emissions factors have been published. It is assumed that the PM_{10} emissions are the same as the TSP emissions. According to paragraph 10.4.2 on woodworking emissions, a cyclone will effectively collect all particulates with a diameter greater than 40 micrometers. To be conservative in calculating emissions, all of the remaining particulate emissions are classified as PM_{10}. The particulate emission factor for large-diameter cyclones in woodworking waste collection systems handling waste from all operations other than sanding is 0.03 grains per standard cubic foot.

Maximum TSP and PM_{10} emissions are shown in Table 2.4-1. With a total exhaust rate of 5,000 cubic feet per minute for TA-15-563 and 5,471 cubic feet per minute for TA-3-38 and 4,368 hours of operation per year for each shop, post cyclone emissions are estimated as follows:

$$Emission\ Rate\left(\frac{lb}{hr}\right) = Exhaust\ Rate\left(\frac{ft^3}{min}\right) * 0.03\left(\frac{gr}{ft^3}\right) * 60\left(\frac{min}{hr}\right) * \left(\frac{1\,lb}{7000\,gr}\right)$$

$$Emission\ Rate\left(\frac{ton}{yr}\right) = Emission\ Rate\left(\frac{lb}{hr}\right) * 4368\left(\frac{hr}{yr}\right) * \left(\frac{1\,ton}{2000\,lb}\right)$$

Table 2.4-1. Particulate Emissions from the Carpenter Shops

Pollutant	Emissions (tpy)		
	TA-15-563	**TA-3-38**	**Total**
TSP	2.81	3.07	**5.88**
PM_{10}	2.81	3.07	**5.88**

2.4.5 Emissions Control Equipment

These shops do not have any emissions control equipment.

2.4.6 Operational Plan

Emissions from the carpenter shops during startup and shutdown are not expected to differ from those during normal operations. Woodworking equipment start and shutdown switches are interlocked with the cyclones.

2.4.7 Applicable Requirements

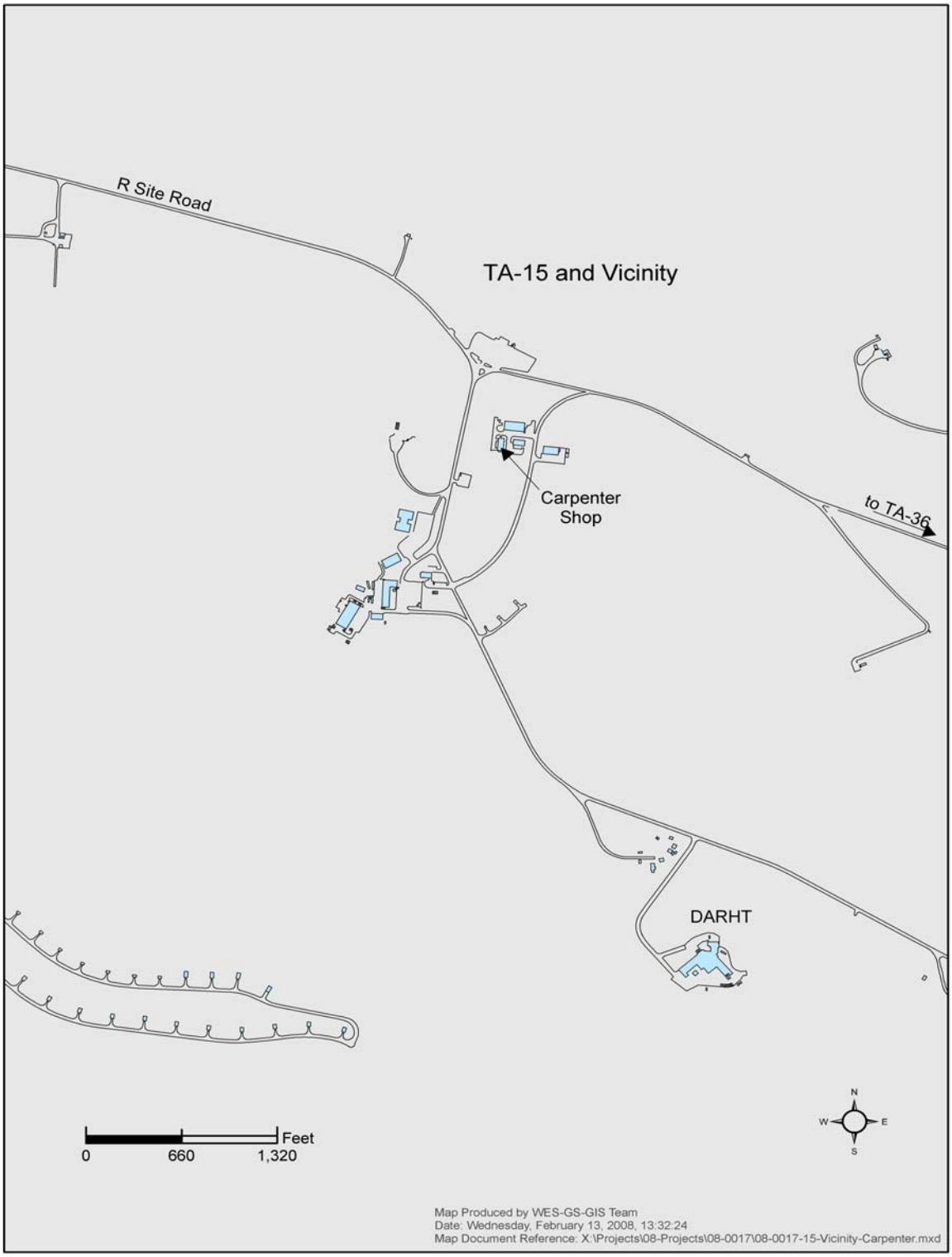
There are no applicable requirements for the carpenter shops.

2.4.8 Location of Carpenter Shops

The location of the Carpenter Shops can be found in Figures 2.4-2 through 2.4-5.

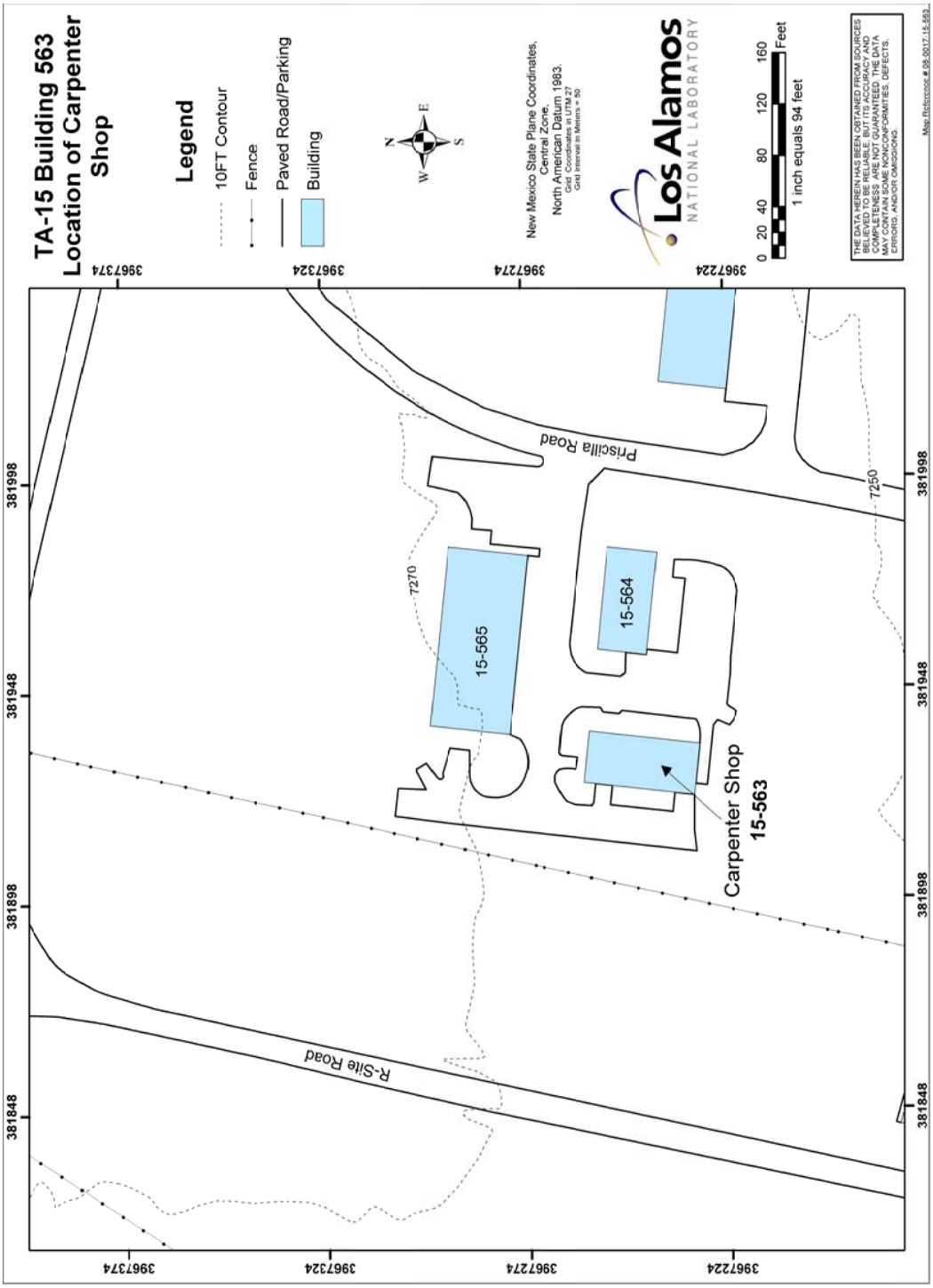
Table 2.4-2. Applicable Requirements for Carpenter Shops and Proposed Changes to the LANL Operating Permit (P100M2)

<table>
<tr><th>Existing P100M2 Permit Conditions – Carpenter Shops</th><th>Proposed Changes</th></tr>
<tr><td>2.4 Carpenter Shops
All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):
<table>
<tr><th>Emission Unit No.</th><th>Location</th><th>Total Exhaust Rate Cubic feet per minute</th><th>Type of Control</th></tr>
<tr><td>TA-15-563</td><td>TA-15-563</td><td>5,000</td><td>None</td></tr>
<tr><td>TA-3-38</td><td>TA-3-38</td><td>5,471</td><td>None</td></tr>
</table></td><td>No Change</td></tr>
<tr><td>2.4.1 Applicable Requirements
2.4.1.1 None</td><td>No Change</td></tr>
<tr><td>2.4.2 Emission Limits
<table>
<tr><th rowspan="2">Source</th><th>Allowable Emission Limits</th></tr>
<tr><th>PM_{10} (tpy)</th></tr>
<tr><td>TA-15-563</td><td>2.81</td></tr>
<tr><td>TA-3-38</td><td>3.07</td></tr>
</table>
This condition is pursuant to 40 CFR 50, 20.1.3 NMAC, Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>No Change</td></tr>
<tr><td>2.4.3 Operational Requirements
2.4.3.1 Saws, drills, shaping and sanding equipment shall operate at a maximum of 4,368 hours per year.</td><td>No Change</td></tr>
<tr><td>2.4.3.2 Process cyclones shall operate during shop operations that are vented to the cyclone.
The conditions of Section 2.4.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>No Change</td></tr>
<tr><td>2.4.4 Emissions Monitoring
2.4.4.1 The permittee shall maintain logs of the hours the carpenter shops are in operation.
This condition is pursuant to 20.2.70.302.C NMAC.</td><td>No Change</td></tr>
<tr><td>2.4.5 Recordkeeping
2.4.5.1 Record the hours of operation for each shop monthly.
This condition is pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.</td><td>No Change</td></tr>
<tr><td>2.4.6 Reporting
2.4.6.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2.
This condition is pursuant to 20.2.70.302.E NMAC.</td><td>No Change</td></tr>
</table>



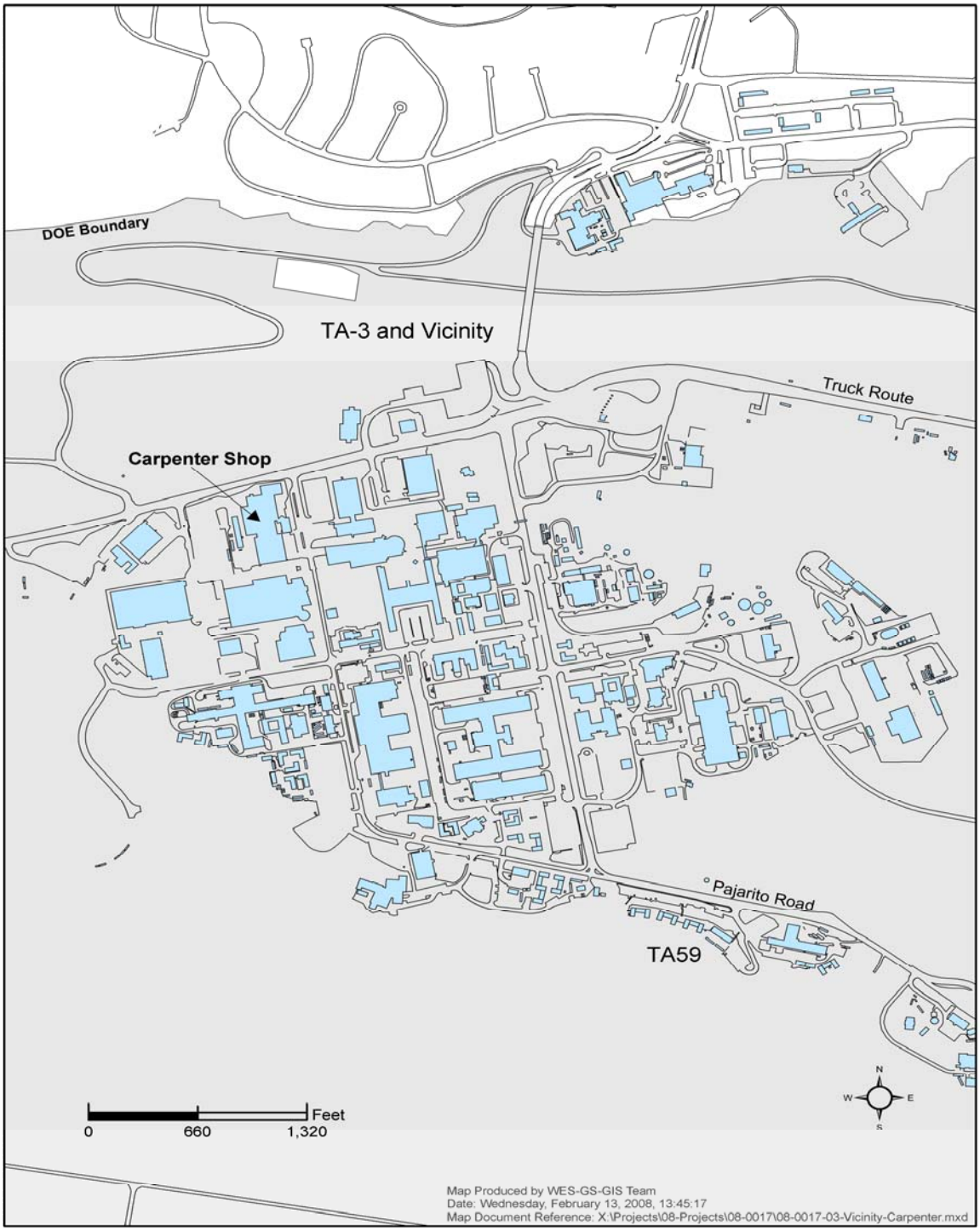
Location of Carpenter Shop at TA-15.

Figure 2.4-2. Location of Carpenter Shop at TA-15.



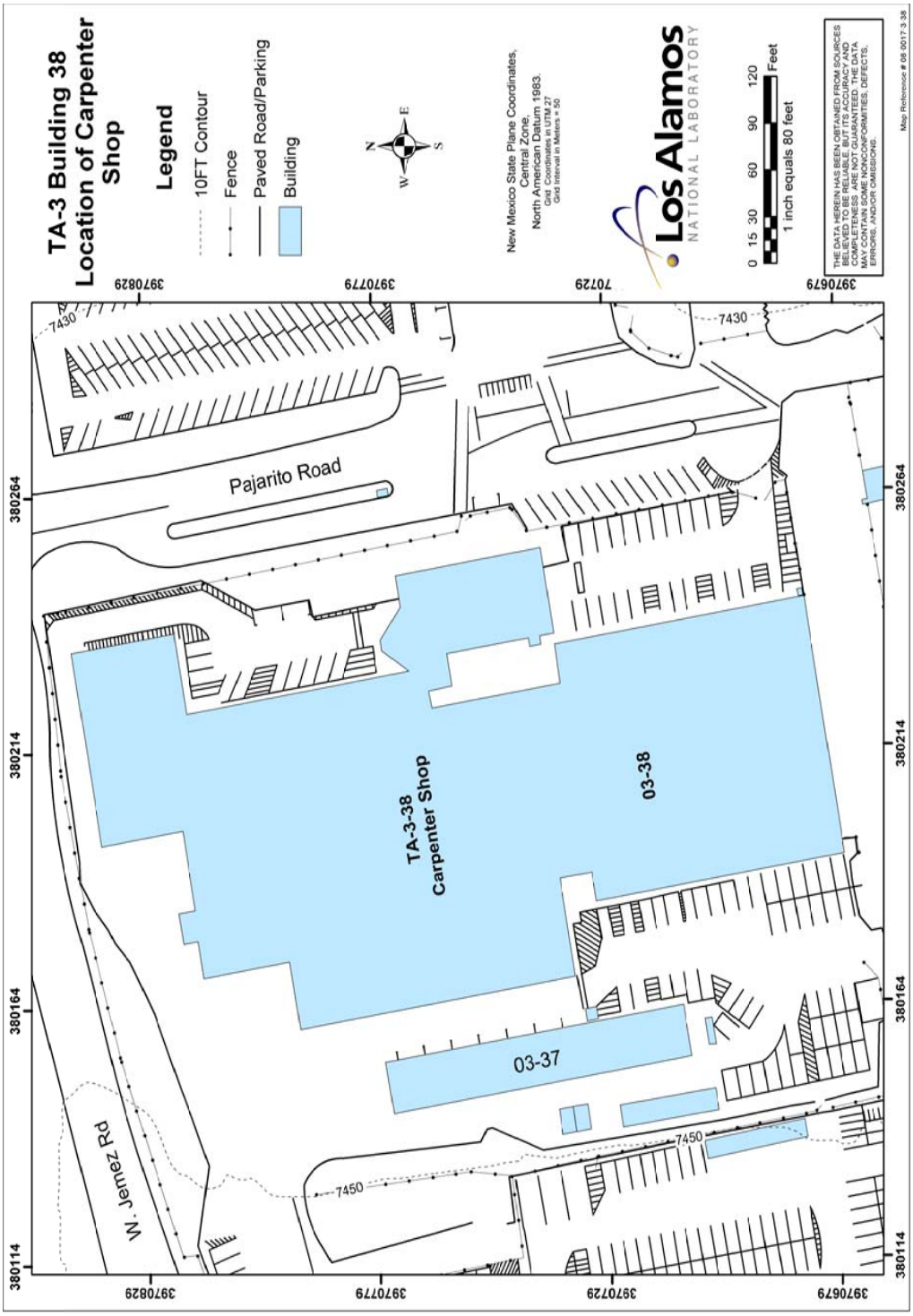
Emission Unit: TA-15-563, Carpenter Shop.

Figure 2.4-3. Location of Emission Unit TA-15-563, Carpenter Shop.



Location of Carpenter Shop at TA-3.

Figure 2.4-4. Location of Carpenter Shop at TA-3.



Emission Unit: TA-3-38, Carpenter Shop.

Figure 2.4-5. Location of Emission Unit TA-3-38, Carpenter Shop.

2.5 Chemical Usage

2.5.1 General Description of Source Category

LANL scientists conduct a wide variety of R&D activities. The R&D activities often involve the use of small quantities of various chemicals, many of which are Clean Air Act (CAA) -regulated pollutants. Emissions from these activities cannot be permitted or estimated in conventional ways because the activities and chemicals being used are constantly changing. LANL is proposing to continue to limit emissions from R&D chemical use to ensure the Laboratory remains below Prevention of Significant Deterioration (PSD) major source status and below major source thresholds for HAP emissions.

Chemicals are used in hundreds of different areas of the Laboratory. For safety reasons, many activities occur under lab hoods with forced ventilation out a stack or into general building exhaust systems. However, other activities occur in open areas of buildings, outdoors, or in other research locations. There are no defined stacks or point sources where emissions from chemical use can be easily quantified.

Chemical use throughout the Laboratory is tracked diligently through a chemical inventory tracking system. Purchases of regulated chemicals go through a central purchasing system before they are brought on-site. When chemicals are brought on-site, they are bar-coded and entered into a facility-wide chemical tracking database. Based on the past five years' analysis, approximately 50,000 separate chemical purchase line items are entered into the database each year.

2.5.2 Operating Schedule

There are no set operating schedules for R&D activities. Chemical use can occur at any time. For the purpose of this application, the operating schedule is 8,760 hours per year.

2.5.3 Process Flow Diagram

Figure 2.5-1 shows a simplified process flow diagram of emissions from chemical use.

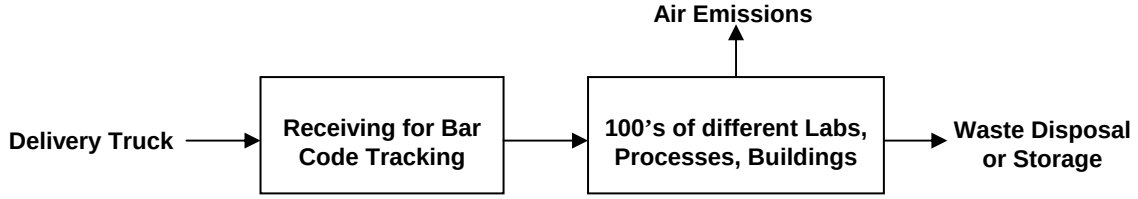


Figure 2.5-1. Process Flow Diagram for R&D Chemical Usage.

2.5.4 Emissions

As required under 20.2.73 NMAC, LANL submits estimates of VOC and HAP emissions from Laboratory-wide chemical use in the annual emission inventory report. For each year, the emission estimates for chemical usage as reported in the annual emission inventory report are a sum of the emission estimates for chemical usage from the two Title V semiannual emissions reports. For the most part, the emission estimates reported are based on a very conservative assumption that the total amount of regulated chemicals purchased is equivalent to total emissions. This is a very conservative approach because it assumes all chemicals purchased are used and evaporate as air emissions. It does not take into account chemicals that are purchased and remain in a process, or the amount of chemicals that are disposed of as waste. Occasionally, process knowledge is used to refine the emission estimates. Chemicals used for activities that qualify as trivial or exempt activities are deleted from the analysis (e.g., grounds and building maintenance, calibration of laboratory equipment, etc.). Table 2.5-1 summarizes the actual VOC and HAP emissions from chemical use for the past five years, as reported in the 20.2.73 NMAC emissions inventory submittal for LANL. For the past five years, the highest individual HAP as reported on the annual emission inventory report has been hydrochloric acid. Table 2.5-2 provides a summary of the estimated amount of hydrochloric acid emitted at LANL for the past five years.

Table 2.5-1. Past Actual VOC and HAP Emissions from Chemical Use as Reported in LANL's Annual Emissions Inventory

Year	VOC (tons)	Total HAPs (tons)
2002	14.9	7.7
2003	11.2	7.3
2004	8.0	5.7
2005	11.2	5.4
2006	10.1	4.8

Table 2.5-2. Past Actual Hydrochloric Acid Emissions from Chemical Use as Reported in LANL's Annual Emissions Inventory

Year	Estimated Emissions (tpy)
2002	1.5
2003	2.1
2004	1.5
2005	1.0
2006	0.9

2.5.5 Emissions Control Equipment

There are no air pollution controls for chemical usage for R&D activities.

2.5.6 Operational Plan

Since there is no specific equipment associated with miscellaneous chemical use, there are no startup, shutdown, or emergency emissions to be addressed.

2.5.7 Applicable Requirements

There are currently no applicable regulatory requirements for emissions from chemical use other than the existing emission limits in Permit P100M2. LANL is proposing in this application to maintain the current permit conditions for this activity. Table 2.5-3 lists existing applicable requirements for chemical use.

Table 2.5-3. Applicable Requirements for Chemical Usage and Proposed Changes to the LANL Operating Permit (P100M2)

Existing P100M2 Permit Conditions – Chemical Usage	Proposed Changes
2.5 Chemical Usage All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included): **Emission Unit No.** — **Location** LANL-FW-CHEM — Facility-wide	No Change
2.5.1 Applicable Requirements 2.5.1.1 None	No Change
2.5.2 Operational Requirements 2.5.2.1 None	No Change
2.5.3 Emission Limits 2.5.3.1 The contribution of VOC and/or HAPs emissions from chemical usage shall not cause the exceedence of the corresponding facility-wide limit listed below: 200 tons per year of facility-wide VOCs 8 tons per year of individual facility-wide HAPs 24 tons per year of total facility-wide HAPs This condition is pursuant to 40CFR50 Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.	No Change
2.5.4 Emissions Monitoring/Recordkeeping Requirements 2.5.4.1 Maintain records of chemical purchasing through facility-wide chemical tracking system, and use the data to calculate the emissions on a semiannual basis in accordance with Condition 4.1. This condition is pursuant to 20.2.70.302.C NMAC.	No Change
2.5.5 Reporting 2.5.5.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2. This condition is pursuant to 20.2.70.302.E NMAC.	No Change

2.6 Degreasers

2.6.1 General Description of Source Category

There is one solvent cleaning machine, or degreaser, at LANL that uses a regulated halogenated solvent. There were two previously permitted degreasers (TA-55-DG-2 and TA-55-DG-3) that are no longer operational, and therefore not included as emission sources in this permit application. The active degreaser, TA-55-DG-1, is located within a fully enclosed glovebox that is vented from the top through a three-stage HEPA filtration system. It is used for parts cleaning and has a capacity of 20 liters. The degreaser is an ultrasonic cold batch type cleaning machine and uses trichloroethylene (CAS No. 79-01-6) as the solvent. Trichloroethylene is both a VOC and HAP. The solvent is not heated or boiled.

Parts in an ultrasonic degreaser are cleaned by agitation created with sound waves of alternating frequency. The alternating sound waves generate high- and low-pressure waves that cause tiny bubbles to form and collapse. The agitation from the formation and collapse of the bubbles is effective in removing residue and leaves the surface clean and undamaged.

Additional degreasers are used at LANL. None of these additional degreasers use halogenated solvents. They qualify as insignificant emission units under Insignificant Activity #1. In addition, a few of the degreasers containing non-halogenated solvents are used in shops that are dedicated to facility maintenance activities and qualify as Trivial Activity #2. Trivial activities are not discussed further in this section.

2.6.2 Operating Schedule

The degreaser is used sporadically for short periods of time, depending on the amount of parts that are cleaned. From 2005 to 2007, the average amount of new solvent that was added to the degreaser averaged to approximately 50 liters. When the degreaser is not being used, the lid is kept closed or the solvent is removed. LANL is not proposing to limit solvent use, hours of operation, or emissions specifically from the degreasers.

2.6.3 Process Flow Diagram

A general process flow diagram is presented in Figure 2.6-1.

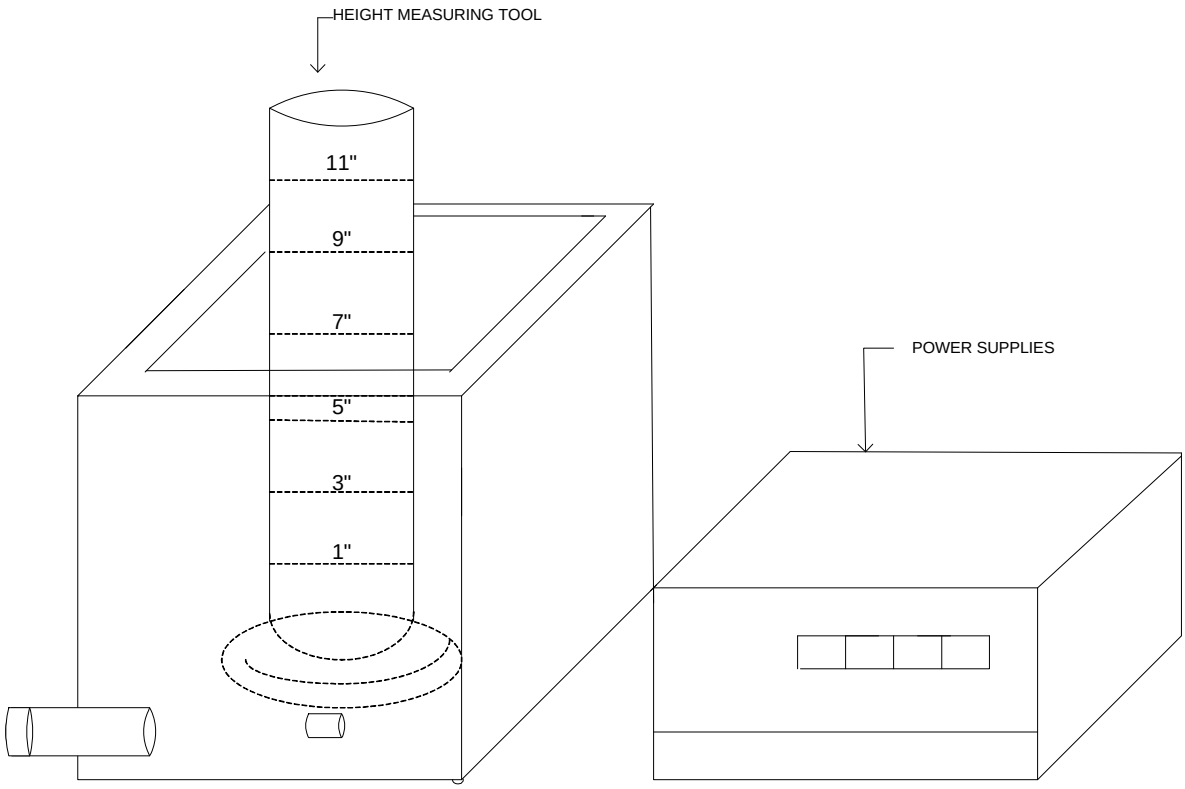


Figure 2.6-1. Process Flow Diagram for the Degreaser.

2.6.4 Emissions

Emissions are estimated on a mass balance approach. Before a degreaser is used, the amount of solvent present in the degreaser is recorded (i.e., initial amount). The addition or removal of any solvent is also recorded. Based on the amounts added or removed, the new amount of solvent is recorded (i.e., final amount). Air emissions are calculated as the difference between the final amount of solvent from the previous use and the initial amount of solvent for the next use.

Based on the dimensions of the degreaser tanks, the tank depth corresponds to a volume. The tank contents are monitored with a graduated dipstick. Each addition or removal of solvent is recorded in depth and corresponding volume.

For informational purposes emissions estimates based on actual records of use are presented in Table 2.6-1. Allowable emissions of HAPs are limited on a facility-wide basis and are discussed in Chapter 1.

Table 2.6-1. Emissions Estimates from Degreaser TA-55-DG-1

Pollutant	Average Actual Emissions[(a)] with Three Years Data (tpy)
HAP	0.01
Trichloroethylene (CAS No. 79-01-6)	0.01
VOC	0.01

(a) Based on operations in 2005, 2006, and 2007.

2.6.5 Emissions Control Equipment

The degreaser is located within a fully enclosed glovebox that is vented from the top through a three-stage HEPA filtration system. This system does not remove solvent vapors. Other than being totally enclosed in the glovebox, there are currently no physical controls on the degreaser to reduce or eliminate emissions. Work practice standards are in place to minimize air emissions.

2.6.6 Operational Plan

Emissions from the cold batch type degreaser during startup and shutdown are not expected to differ from those during normal operations. The only malfunction that might result in excess emissions would be a solvent spill or equipment leak. Since the degreaser is located inside a glovebox, the glovebox would serve as secondary containment should spills or leaks occur. LANL personnel routinely check for spills and leaks and correct such situations immediately upon discovery.

2.6.7 Applicable Requirements

Applicable requirements are shown in Table 2.6-2. They represent work practice standards required under 20.2.82 NMAC and 40 CFR 63 Subpart T for cold batch degreasers using halogenated solvents.

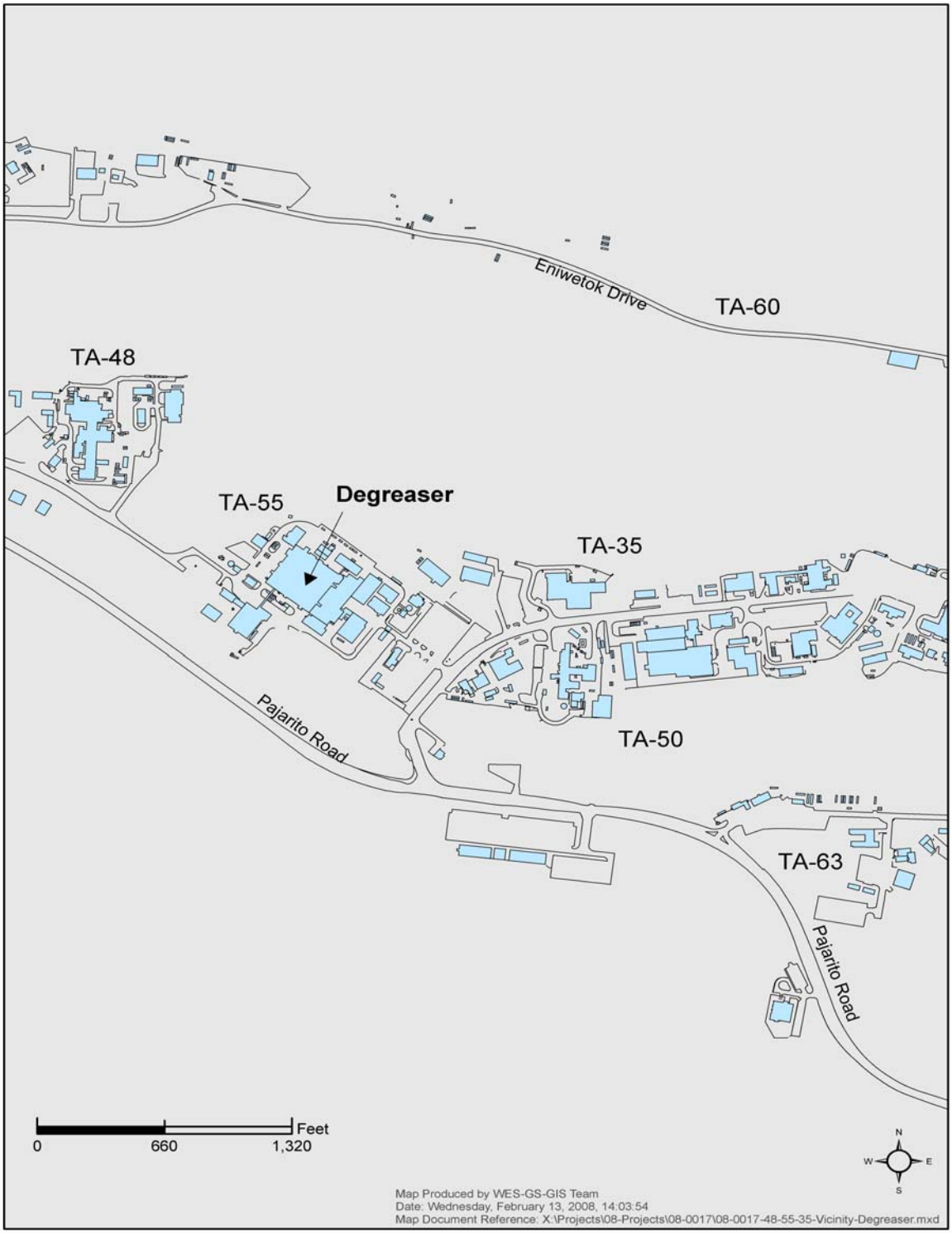
2.6.8 Location of Degreaser

The location of the Degreaser can be found in Figures 2.6-2 and 2.6-3.

Table 2.6-2. Applicable Requirements for the Degreaser and Proposed Changes to the LANL Operating Permit (P100M2)

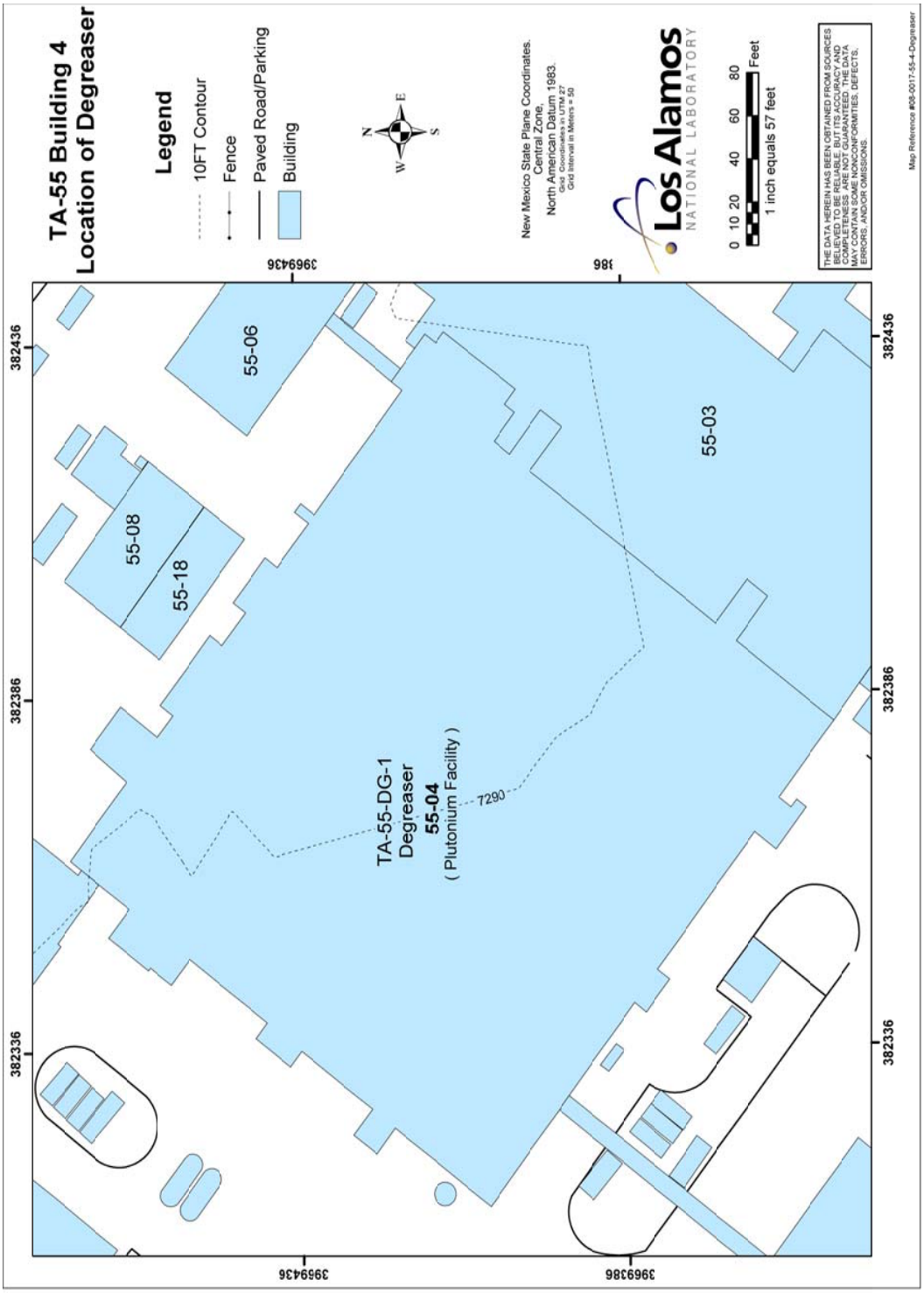
<table>
<tr><th>Existing P100M2 Permit Conditions - Degreaser</th><th>Proposed Changes</th></tr>
<tr><td>2.6 Degreasers
All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):
<table>
<tr><th>Emission Unit No.</th><th>Location/Building</th><th>Type of Degreaser</th></tr>
<tr><td>TA-55-DG-1</td><td>TA-55</td><td>Ultrasonic Cold Batch</td></tr>
<tr><td>TA-55-DG-2</td><td>TA-55</td><td>Ultrasonic Cold Batch</td></tr>
<tr><td>TA-55-DG-3</td><td>TA-55</td><td>Spray Cold Batch</td></tr>
</table></td><td>Request deleting TA-55 DG-2 and DG-3. Operations at both units have been suspended.</td></tr>
<tr><td>2.6.1 Applicable Requirements
2.6.1.1 The following requirement applies to these emission units: 40 CFR Part 63, Subpart T.</td><td>No Change</td></tr>
<tr><td>2.6.2 Emission Limits
2.6.2.1 The contribution of VOC and/or HAP emissions from chemical usage shall not cause the exceedence of the corresponding facility-wide limit listed below:
200 tons per year of facility-wide VOCs
8 tons per year of an individual facility-wide HAP
24 tons per year of total facility-wide HAPs
This condition is pursuant to 40CFR50 Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>No Change</td></tr>
<tr><td>2.6.3 Operational Requirements
2.6.3.1 The facility shall comply with the applicable requirements of 40 CFR Part 63, Subpart T including:
2.6.3.1.1 Keep degreaser closed with a tight-fitting cover.
2.6.3.1.2 Maintain a freeboard ratio of 0.75 or greater.
2.6.3.1.3 Collect and store all waste solvent and wipe rags in closed containers.
2.6.3.1.4 Perform flushing within the freeboard area only.
2.6.3.1.5 Allow cleaned parts to drip for 15 seconds or until dripping stops.
2.6.3.1.6 Do not exceed the fill line on the solvent level.
2.6.3.1.7 Wipe up spills immediately.
2.6.3.1.8 Do not create observable splashing with agitation device.
2.6.3.1.9 Keep the degreaser from being exposed to drafts greater than 40 m/sec.
2.6.3.1.10 Do not clean sponges, fabric, wood, or paper.
The conditions of Section 2.6.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>Request typo error correction on 2.6.3.1.9 - should read “drafts greater than 40 m/min.” as per 40 CFR Part 63, Subpart T.</td></tr>
</table>

Existing P100M2 Permit Conditions - Degreaser	Proposed Changes
2.6.4 Emissions Monitoring Requirements 2.6.4.1 Record the amount of solvent added to the degreaser and calculate the emissions on a semiannual basis in accordance with Condition 4.1.	No Change
2.6.4.2 Complete checklist for work practice standards. The conditions of Section 2.6.4 are pursuant to 20.2.70.302.C NMAC.	No Change
2.6.5 Recordkeeping 2.6.5.1 Maintain records of solvent content and work practice checklists. This condition is pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.	No Change
2.6.6 Reporting 2.6.6.1 Submit notification of initial startup.	Request deleting as this condition was met for DG-1.
2.6.6.2 Submit a compliance report 150 days after initial startup.	Request deleting as this condition was met for DG-1
2.6.6.3 Reports shall be submitted in accordance with conditions 4.1 and 4.2. The conditions of 2.6.6 are pursuant to 20.2.70.302.E NMAC.	No Change



Location of Degreaser at TA-55.

Figure 2.6-2. Location of Degreaser at TA-55.



Emission Unit: TA-55-DG-1, Degreaser.

Figure 2.6-3. Location of Emission Unit TA-55-DG-1, Degreaser.

2.7 Internal Combustion Sources

2.7.1 General Description of Source Category

LANL maintains and operates approximately 200 stationary and portable electrical generators with design capacities ranging from less than 1 kW to 1,600 kW. Stationary generators are used on standby (emergency) status to provide power to critical systems at LANL during power outages. The stationary generators are fueled by natural gas or diesel. Portable generators are used for temporary operations requiring remote power or to provide emergency backup power during power outages at various sites. The portable generators are fueled by gasoline and diesel. LANL also owns two drill rigs with diesel-fired engines which conduct environmental sampling. Finally, LANL operates one stationary generator that supports process-related activities. This generator was permitted under 20.2.72 NMAC. Table 2.7-1 summarizes the categories of internal combustion equipment at LANL.

As is common throughout air regulatory agencies, NMED has two EPA-approved lists which exempt small emission sources with minor air emissions from Title V permit requirements. One list contains activities referenced as trivial (NMED List of Trivial Activities, January 10, 1996) and the second list contains activities termed insignificant (NMED List of Insignificant Activities, March 24, 2005). Trivial activities are not required to be included in permit applications and are exempt from permitting. Categories of insignificant sources are required to be listed in permit applications, but the activities themselves are also exempt from permitting. References in the paragraphs below are to the numbered activities in these NMED lists.

Stationary Standby Generators. LANL maintains a pool of approximately 40 stationary standby generators at various locations throughout the Laboratory. All of these generators meet the definition of standby equipment under 20.2.70 NMAC and are used solely to provide emergency backup power for less than 500 hours annually. Therefore they are defined as insignificant sources and are exempt from the Title V operating permit program (Insignificant Activity #7). Even though these stationary generators are exempt from permitting, LANL proposes, as was done in the 2002 LANL Title V permit application, to track and report emissions from these sources in the semiannual emissions reports required by Permit P100M2.

Stationary Process Generator. LANL operates one stationary generator that is used for process-related activities at TA-33. The unit is a 1,600 kW diesel-fired unit (1,500 kW derated for altitude) which is used periodically to support experimental research projects. This generator was permitted under 20.2.72 NMAC and is identified in Permit P100M2 as Emission Unit TA-33-G-1.

Table 2.7-1. Types of Internal Combustion Sources at LANL

Equipment Description	Approximate Total of design Rating for category (kW)	Fuel	Operational Status	Permitting Status
Stationary Standby Generators	15,491[(a)]	Natural Gas Diesel	Standby, Emergency	Exempt-IEU[(b)] #7
TA-33 Stationary Process Generator	1,500 [(c)]	Diesel	Periodic for experimental research	20.2.72 NMAC Permit 2195-F
TA-33 Portable Generators	265	Diesel	Periodic for experimental research	20.2.72 NMAC Permit 2195-N
Portable Generators	3,500	Gasoline Diesel	Emergency, Portable, Temporary	Exempt -Trivial Activity #21, and IEU #6 and 7

(a) This is design rating of the generator engines (kW_m) assuming 80% efficiency.
(b) IEU = Insignificant Emission Unit
(c) Derated for altitude

Portable Generators. LANL maintains a pool of approximately 135 portable generators used for temporary power at remote locations and to provide emergency back-up power. Many of these portable generators qualify as trivial activities based on size. Trivial Activity #21 exempts small portable generators that can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device from one location to another.

Some of the portable generators do not qualify as trivial activities, but are considered insignificant emission units based on rated capacity and fuel type. Insignificant Activity #6 is for portable engines with design capacity less than or equal to 200 horsepower if fueled by diesel or natural gas, and less than 500 horsepower if fueled by gasoline. Insignificant Activity #7 exempts emergency generators used less than 500 hours per year.

These portable generators meet the EPA definition of nonroad engine at 40 CFR Parts 85 and 89. Specifically, the generators do not remain in any one location for more than 12 consecutive months. The definition of stationary source at Section 302 (z) of the 1990 Clean Air Act Amendments (CAAA) excludes nonroad engines. Therefore, nonroad engines are not regulated under the federal NSR program, which includes the PSD permit requirements. Under the New Mexico Air Quality Control Act, the state PSD regulation cannot be more stringent than the federal program or include sources that are not subject to federal PSD. Thus, even though nonroad engines may be permitted by NMED under minor source construction or NSR permitting,

they cannot be regulated for PSD purposes by the NMED. Therefore, as proposed in the 2002 Title V application and approved by NMED in Permit P100M2, LANL does not include emissions from these units in semiannual Title V emission reports. This application proposes the same approach for the portable generators which are trivial or insignificant.

LANL received NSR Permit No. 2195-P in August 2007 from NMED for three new diesel-fired portable generators. All three generators are used to provide power in remote areas for electrical equipment. Because each generator engine has applicable requirements from Permit No.2195-P, these units cannot qualify as trivial or insignificant activities and must be included in Permit P100M2 as permitted equipment. These units and their Title V source numbers in this application are as follows:

TA-33-G-2: Kohler 20 kW generator

TA-33-G-3: Kohler 20 kW generator

TA-33-G-4: Caterpillar 225 kW generator

Drill Rig Engines. The two diesel-fired drill rigs are used to drill sample cores for site characterization throughout the Laboratory. Equipment used to withdraw materials for analysis are classified as a trivial activity and are exempt from permitting (Trivial Activity #31). No action is required for the exempt drill rig engines and other exempt engines, and they are not discussed further in this section.

2.7.2 Operating Schedule

Stationary Standby Generators. The stationary standby generators operate whenever commercially available power is not available. These engines are run periodically for testing and maintenance. Normally each generator is tested for approximately one hour per month. LANL is proposing to continue the current limit in Permit P100M2 for this pool of generators of 168 hours per year per generator. Past actual hours of operation for this pool of generators have typically been 15 to 30 hours per year. For the purpose of this application, the generators can operate at any time during the year.

TA-33 Stationary Process Generator. The stationary process generator is permitted under 20.2.72 NMAC. The operating limits in the permit allow for operating a maximum of 12,000 kilowatt hours/day (kWh/day) and 1,350,000 kilowatt hours/year (kWh/year). The generator is also limited to operate at full capacity for eight hours a day between the hours of 7:00 am and 5:00 pm.

TA-33 Portable Generators. These three generators are also permitted under 20.2.72 NMAC. Each generator is limited to 500 operating hours per year.

2.7.3 Process Flow Diagram

A general process flow diagram for an internal combustion unit is provided in Figure 2.7-1.

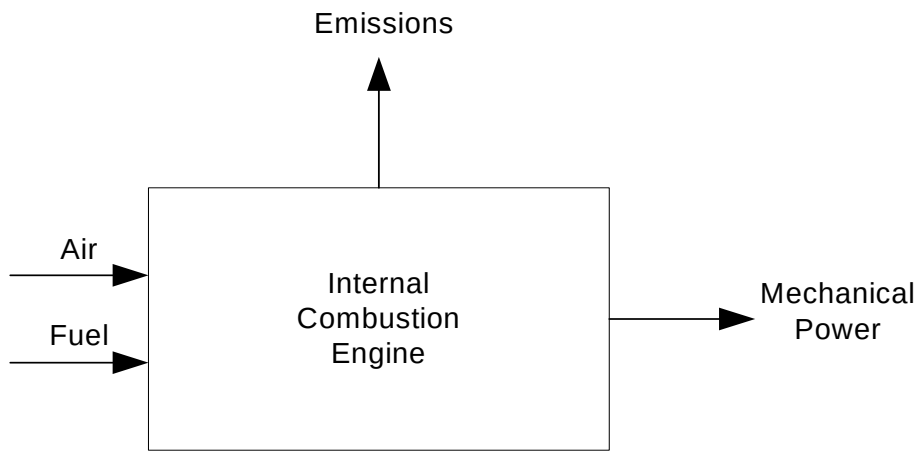


Figure 2.7-1. Process Flow Diagram for Internal Combustion Sources.

2.7.4 Emissions

Emissions from internal combustion systems include the criteria pollutants (NO_x, CO, SO_2, PM, and VOCs) and trace amounts of HAPs. The emission factors used to calculate criteria and HAP emissions from generators are summarized in Table 2.7-2. The criteria pollutant and HAP emission factors for the engines were obtained primarily from AP-42, but in some cases were also taken from the manufacturer or the applicable nonroad engine emission limit. Emission factors for generators permitted under 20.2.72 NMAC are the same factors used and approved in those permit applications.

The total estimated generator engine kilowatts for the pool of stationary standby generators in each emission factor size range is as follows:

- natural gas-fired generators = 534 kW,
- diesel-fired generators <447 kW = 5,113 kW, and
- diesel-fired generators >447 kW = 12,250 kW.

These total engine power outputs were applied in conjunction with the proposed limit on annual hours of operation and the emission factors to estimate emissions for each generator type. For this generator pool, an efficiency of 80% was assumed in estimating engine ratings from generator design ratings.

For the four permitted generators at TA-33 the allowable emissions are based on 20.2.72 NMAC permit conditions and are shown in Table 2.7-4.

Table 2.7-2. Internal Combustion Emission Factors For Stationary Generators

Air Pollutant	Natural Gas[(a)] Emission Factors (lb/kW-hr)	Diesel Engines <447 kW[(b)] Emission Factors (lb/kW-hr)	Diesel Engines >447 kW[(c)] Emission Factors (lb/kW-hr)	TA-33 Process Generator[(d)] Emission Factors (g/kW-hr)	TA-33 Portable Generators[(e)] Emission Factors (g/kW-hr)
NO_x	0.008	0.042	0.032	12.2	18.85
CO	0.013	0.009	0.007	10.2	5.5 11.4
SO_x[(f)]	2.0E-06	0.003	5.4E-04	0.25	1.25
PM	3.4E-05	0.003	0.001	0.43	1.34
PM_{10} $PM_{2.5}$	3.2E-05	0.003	0.001	0.43	1.34
VOC	1.0E-04	0.003	0.001	0.21	1.52
HAPs[(g)]	1.11E-04	1.35E-05	5.82E-06	2.64E-03	6.13E-03

(a) AP-42 Section 3.2: Natural Gas Fired Reciprocating Engines, July 2000. Table 3.2-1.
(b) AP-42 Section 3.3: Gasoline and Diesel Industrial Engines, October 1996. Tables 3.3-1 and 3.3-2.
(c) AP-42 Section 3.4: Large Stationary Diesel and All Stationary Dual Fuel Engines, October 1996. Tables 3.4-1, 3.4-3, and 3.4-4.
(d) Emission Factors for NO_x, CO, and VOC were obtained from the manufacturer. Emission factors for SO_x, PM, and HAPs are from AP-42, Section 3.4.
(e) Emission factors from AP-42 Section 3.3: Gasoline and Diesel Industrial Engines, October 1996. Tables 3.3-1 and 3.3-2 except CO factors are Tier 1 nonroad engine standards.
(f) The diesel fuel is assumed to have a 0.05% sulfur content.
(g) The total HAP emission factors are the sum of all the individual HAP emission factors listed in each applicable table of AP-42. Units were converted from lb/MMBtu to g/kW-hr.

The emission calculations for the stationary standby generators follow the general format shown below:

$$ER\left(\frac{ton}{yr}\right) = EF\left(\frac{g}{kW-hr}\right) * Total\ \ Design\ \ Capacity\ \ (kW) * 168\left(\frac{hr}{yr}\right) * \left(\frac{ton}{9.07x10^{5}\ g}\right)$$

Where:

ER = Emission Rate
EF = Emission Factor

The calculated emissions are shown in Table 2.7-3.

Table 2.7-3. Emissions Estimates for Internal Combustion Engines (tpy)

	Natural Gas Fired Generators	Diesel Fired Generators < 447kW	Diesel Fired Generators > 447kW	TA-33 Process Generator	TA-33 Portable Generators	Total
NO_x	0.2	14.6	29.6	18.1	2.7	65.3
SO_x	0.0001	1.0	0.5	0.4	0.22	2.1
PM	0.001	1.0	0.9	0.6	0.22	2.8
CO	0.4	3.1	6.5	15.2	1.6	26.7
VOC	0.003	1.0	0.9	0.3	0.24	2.5
HAPs	0.003	0.005	0.005	3.93E-03	8.95E-04	0.02

2.7.5 Emissions Control Equipment

There are no air pollution controls on the internal combustion engines.

2.7.6 Operational Plan

Diesel and gasoline engines may have increased particulate emissions at startup until the engine is warmed up. This is a normal condition for older engines in this category. LANL is required to conduct opacity readings on recently permitted engines during cold startups and take corrective action if an opacity limit is exceeded. Increased emissions during shutdowns or malfunctions are not anticipated from this type of equipment.

2.7.7 Applicable Requirements

Three new generator emission units are being added to the Title V renewal application. The applicable requirements for LANL's internal combustion units are shown below in Table 2.7-4.

Table 2.7-4. Applicable Requirements for Internal Combustion Units

Source	Applicable Requirements
Stationary Standby Generators	• Operation of the stationary standby generator pool is limited to an average of 168 hr/year. (Condition 2.7.3.1 of Permit P100M2)
TA-33-G-1 TA-33-G-2 TA-33-G-3 TA-33-G-4	***Operating Requirements:*** • TA-33-G-1 is limited to 12,000 kWh/day and 1,350,000 kWh/year. (Condition 2.7.3.2 of Permit P100M2) • TA-33-G-1 is limited at full capacity to eight hours a day between the hours of 7:00 am and 5:00 pm. (Condition 2.7.3.3 of Permit P100M2) • TA-33-G-2, TA-33-G-3, and TA-33-G-4 are each limited to 500 hours of operation per calendar year. (Condition 1.b of NSR Permit 2195-P) • TA-33-G-2, TA-33-G-3, and TA-33-G-4 generator engines shall be certified to compliance with applicable nonroad engine emission standards at 40 CFR Part 89. (Condition 1.c of NSR Permit 2195-P) • Visible emissions shall not equal or exceed an opacity of 20%. (Condition 2.7.2.1 of Permit P100M2, Condition 2.a of NSR Permit 2195-P, and 20.2.61 NMAC. ***Emission Limits:*** • Limit emissions as shown below (Condition 2 of Permit 2195-P and Condition 2.7.2 of Permit P100M2)

	PM/PM_{10}		NO_x		CO		VOC		SO_x	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
TA-33-G-1	1.4	0.6	40.3	18.1	33.7	15.2	0.7	0.3	5.5	2.5
TA-33-G-2	N/A	N/A	0.83	0.21	0.2	0.1	0.1	N/A	N/A	N/A
TA-33-G-3	N/A	N/A	0.83	0.21	0.2	0.1	0.1	N/A	N/A	N/A
TA-33-G-4	N/A	N/A	9.33	2.33	5.7	1.4	0.75	0.2	0.62	0.16

[(a)] N/A indicates NMED chose to not set an emission limit in NSR Permit 2195-P for emissions deemed

negligible.

2.7.7.1 Proposed Monitoring, Recordkeeping, and Reporting

Recordkeeping, and for some units opacity measurements, is proposed as adequate monitoring to ensure that emissions from the generators stay below the proposed limits. Table 2.7-5 presents the proposed monitoring, recordkeeping, and reporting.

Table 2.7-5. Proposed Monitoring, Recordkeeping, and Reporting for Internal Combustion Engines

Source	Monitoring, Recordkeeping, and Reporting
Stationary standby generators	***Monitoring/Recordkeeping:*** • Track and record hours of operation for stationary standby generators on a semiannual basis. (Condition 2.7.4 of Permit P100M2) ***Reporting:*** • Report criteria pollutant and HAP emissions on a semiannual basis. (20.2.73.300 NMAC for criteria pollutants and Condition 4.1 of Permit P100M2) • Submit semiannual report of any required monitoring within 45 days from the end of each reporting period. The reporting periods are January to June and July to December. (20.2.70.302(E)(1) NMAC and Condition 4.2 of Permit P100M2)
TA-33-G-1	***Monitoring/Recordkeeping:*** • Track hourly kWh and 12-month rolling total kWh. (Condition 2.7.4 of Permit P100M2) • Record hours of operation and the time operation begins and ends each day. (Condition 2.7.4 of Permit P100M2) ***Reporting:*** • Report criteria pollutant and HAP emissions on a semiannual basis. (20.2.73.300 NMAC for criteria pollutants and Condition 4.1 of Permit P100M2) • Submit semiannual report of any required monitoring within 45 days from the end of each reporting period. The reporting periods are January to June and July to December. (20.2.70.302(E)(1) NMAC and Condition 4.2 of Permit P100M2)

Source	Monitoring, Recordkeeping, and Reporting
TA-33-G-2 TA-33-G-3 TA-33-G-4	***Monitoring/Recordkeeping*** • Once per year, the permittee shall determine opacity during initial daily cold startup of each generator engine. Opacity shall be determined using EPA Method 9 for a minimum of 10 minutes. (Condition 3.a of NSR Permit 2195-P) • Corrective action shall be taken if an opacity measurement equals or exceeds 20%. (Condition 3.a of NSR Permit 2195-P) • Record total hours of operation for each generator per calendar year. (Condition 4.a of NSR Permit 2195-P) • Record opacity readings for each generator engine during cold startup and corrective action to address visible emission exceedances. (Condition 4.b of NSR Permit 2195-P) • For each generator engine, maintain a copy of the engine certification to the applicable nonroad emission standards in 40 CFR Part 89. (Condition 4.c of NSR Permit 2195-P) ***Reporting*** • Report criteria pollutant and HAP emissions on a semiannual basis. (20.2.73.300 NMAC for criteria pollutants and Condition 4.1 of Permit P100M2) • Submit semiannual report of any required monitoring within 45 days from the end of each reporting period. The reporting periods are January to June and July to December. (20.2.70.302(E)(1) NMAC and Condition 4.2 of Permit P100M2)

2.7.7.2 Proposed Changes to Existing Operating Permit

Table 2.7-6 summarizes the proposed changes to the existing P100M2 Permit.

2.7.8 Location of Internal Combustion Sources

The location of applicable Internal Combustion Sources at LANL can be found in Figures 2.7-2 and 2.7-3.

Table 2.7-6. Applicable Requirements for Internal Combustion Sources and Proposed Changes to the LANL Operating Permit (P100M2)

<table>
<tr><th>Existing P100M2 Permit Conditions – Internal Combustion Sources</th><th>Proposed Changes</th></tr>
<tr><td>

2.7 Internal Combustion Sources

All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):

<table>
<tr><th>Emission Unit No.</th><th>Location/ Building</th><th>Equipment Type</th><th>Manufacturer/ Model</th><th>Serial No.</th><th>Nameplate Capacity</th><th>Fuel Type</th></tr>
<tr><td>TA-33-G-1</td><td>TA-33</td><td>Diesel-Fired Generator</td><td>Kohler/1600 ROZD71</td><td>375801</td><td>1,600 kW</td><td>Diesel</td></tr>
<tr><td>Standby Generators (see Note 1)</td><td>Scattered</td><td>Natural Gas, Diesel, Propane, and Gasoline Fired Generators</td><td>Various</td><td>Various</td><td>See Note 1</td><td>Natural Gas, Diesel, Propane, and Gasoline</td></tr>
</table>

[1]Note 1: See pages 3-50 through 3-54 of the 2002 application.

</td><td>Add Emission Units
TA-33-G-2
TA-33-G-3
TA-33-G-4</td></tr>
<tr><td>

2.7.1 Applicable Requirements

2.7.1.1 The following requirements apply to emission unit TA-33-G-1: 20.2.61 NMAC and NSR Permit Number 2195F.

</td><td>Add Emission Units
TA-33-G-2
TA-33-G-3
TA-33-G-4</td></tr>
<tr><td>

2.7.2 Emission Limits

<table>
<tr><th rowspan="3">Source</th><th colspan="12">Allowable Emission Limits</th></tr>
<tr><th colspan="2">TSP</th><th colspan="2">PM_{10}</th><th colspan="2">NO_x</th><th colspan="2">CO</th><th colspan="2">VOC</th><th colspan="2">SO_x</th></tr>
<tr><th>pph</th><th>tpy</th><th>pph</th><th>tpy</th><th>pph</th><th>tpy</th><th>pph</th><th>tpy</th><th>pph</th><th>tpy</th><th>pph</th><th>tpy</th></tr>
<tr><td>TA-33-G-1</td><td>1.4</td><td>0.6</td><td>1.4</td><td>0.6</td><td>40.3</td><td>18.1</td><td>33.7</td><td>15.2</td><td>0.7</td><td>0.3</td><td>5.5</td><td>2.5</td></tr>
</table>

</td><td>Add Condition 2 of Permit 2195-P for
TA-33-G-2
TA-33-G-3
TA-33-G-4</td></tr>
<tr><td>

2.7.2.1 Visible emissions shall not equal or exceed opacity of 20%.
The conditions of Section 2.7.2 are pursuant to 40CFR50 Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.

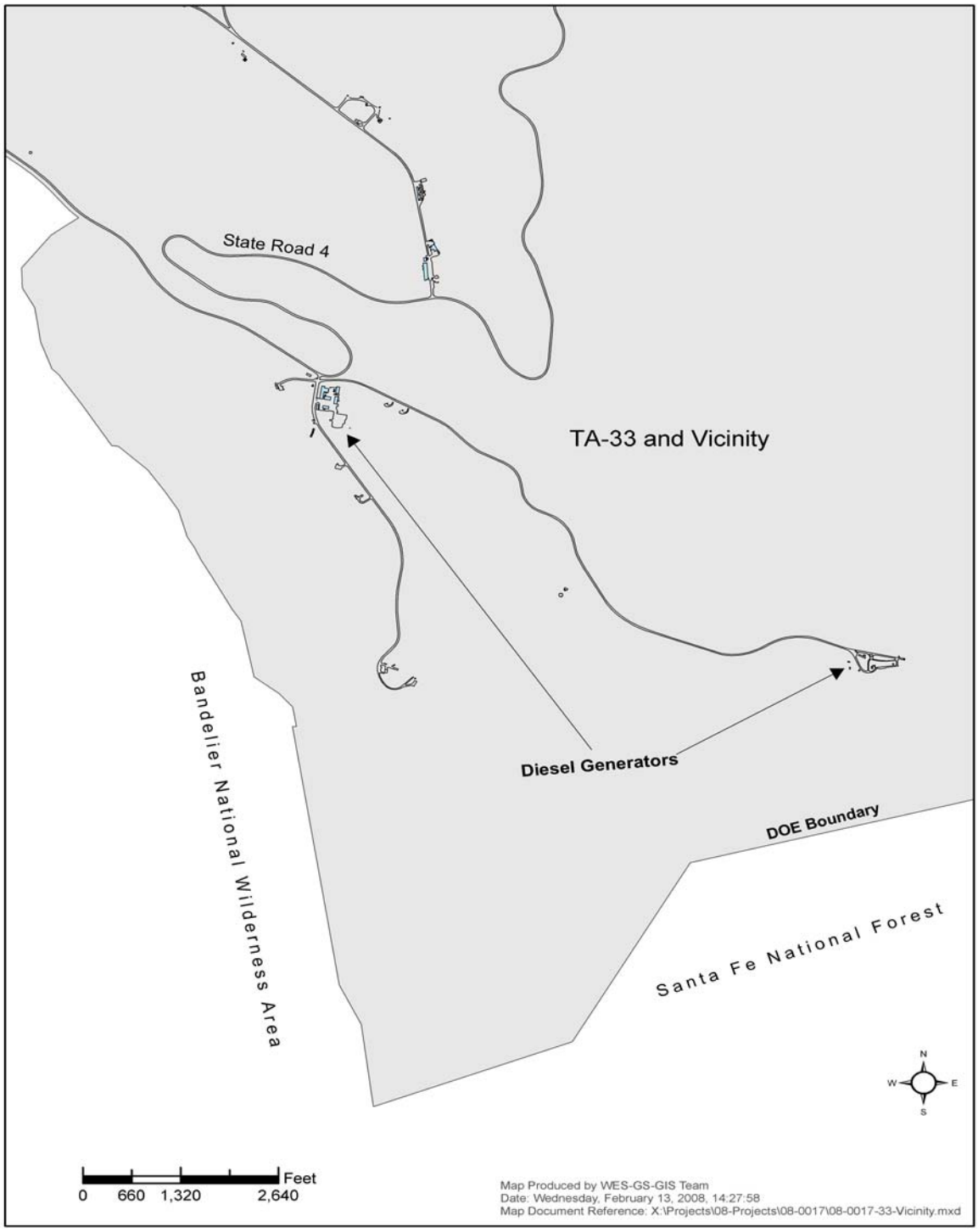
</td><td>No Change</td></tr>
<tr><td>

2.7.3 Operational Requirements

2.7.3.1 Operation of the LANL stationary standby generator pool is limited to an average of 168 hr/year each to assure non-

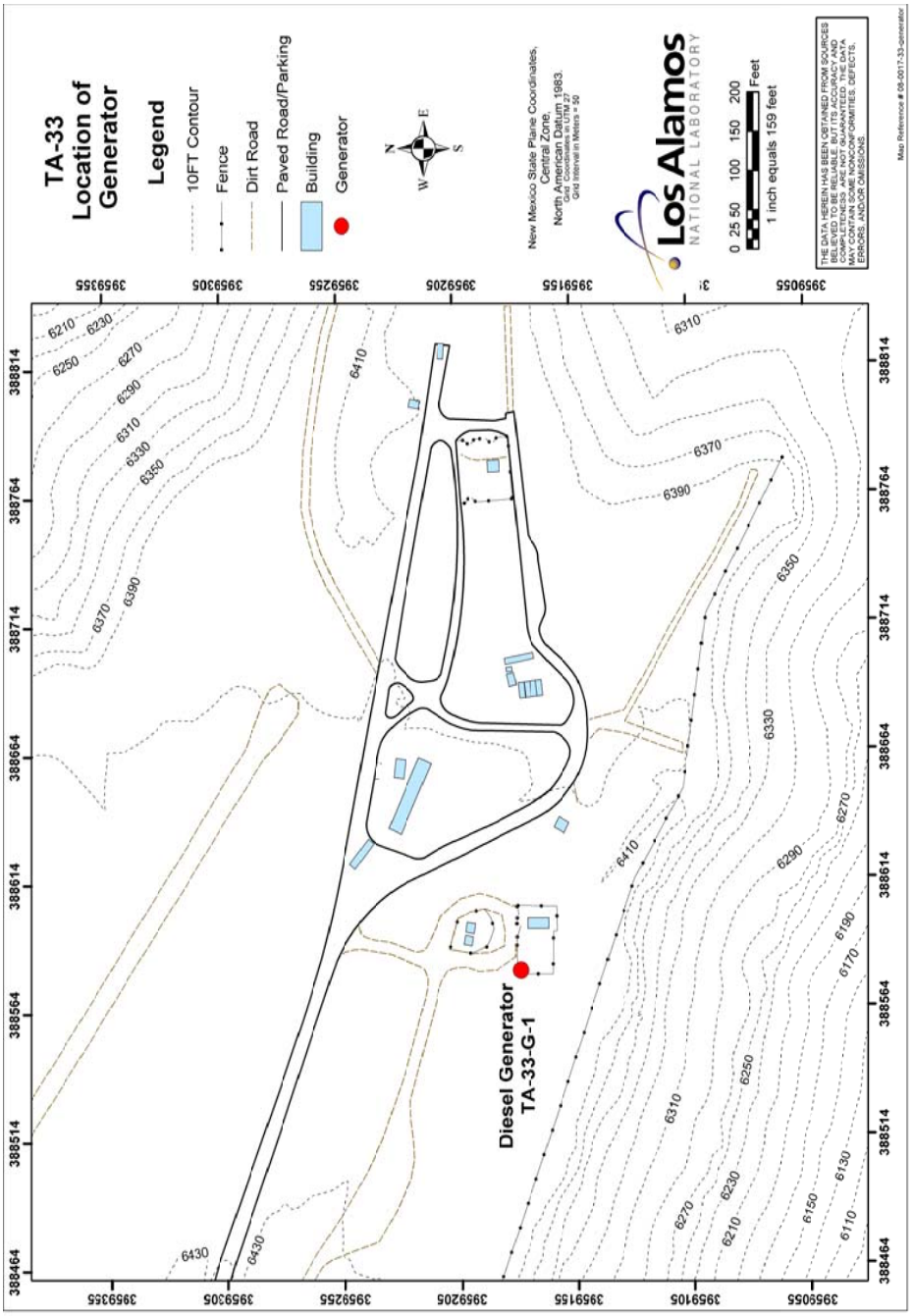
</td><td>Add Condition 1b and 1c of Permit 2195-P for</td></tr>
</table>

<table>
<tr><th>Existing P100M2 Permit Conditions – Internal Combustion Sources</th><th>Proposed Changes</th></tr>
<tr><td>applicability of 202.74 NMAC, PSD.</td><td>TA-33-G-2
TA-33-G-3
TA-33-G-4</td></tr>
<tr><td>2.7.3.2 TA-33-G-1 is limited to 12,000 kWh/day and 1,350,000 kWh/year.</td><td>No Change</td></tr>
<tr><td>2.7.3.3 TA-33-G-1 is limited at full capacity to eight hours a day between the hours of 7:00 AM and 5:00 PM.
The conditions of Section 2.7.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.</td><td>No Change</td></tr>
<tr><td>2.7.4 Emissions Monitoring Requirements
<table>
<tr><th>Source</th><th>Monitoring Required</th></tr>
<tr><td>Stationary Standby Generators</td><td>Track and record hours of operation for stationary standby generators on a semiannual basis.</td></tr>
<tr><td>TA-33-G-1</td><td>Track hourly and 12-month rolling total kWh.
Record hours of operation and the time operation begins and ends each day.</td></tr>
</table></td><td>Add condition 3.a, 4a, 4b, and 4c of NSR Permit 2195-P for
TA-33-G-2
TA-33-G-3
TA-33-G-4</td></tr>
<tr><td>2.7.4.1 40 CFR Part 60, Appendix A, Method 9 shall be used to determine compliance with the opacity limitation.
The conditions of Section 2.7.4 are pursuant to 20.2.70.302.C NMAC.</td><td>No Change</td></tr>
<tr><td>2.7.5 Recordkeeping
2.7.5.1 Recordkeeping for this source category is specified at Condition 2.7.4.
This condition is pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.</td><td>No Change</td></tr>
<tr><td>2.7.6 Reporting
2.7.6.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2.
This condition is pursuant to 20.2.70.302.E NMAC.</td><td>No Change</td></tr>
</table>



Location of Diesel Generators at TA-33.

Figure 2.7-2. Location of Diesel Generators at TA-33.



Emission Unit: TA-33-G-1, Diesel Generator.
Emission Units: TA-33-G-2, TA-33-G-3, TA-33-G-4 are mobile.

Figure 2.7-3. Location of Emission Unit TA-33-G-1, Diesel Generator. (Emission Units TA-33-G-2, TA-33-G-3, TA-33-G-4 are mobile and can be moved around TA-33.)

2.8 Data Disintegrator

2.8.1 General Description of Source Category

The data disintegrator was installed at TA-52-11 in July of 2004. The data disintegrator was permitted for installation under NSR Air Quality Permit No. 2195-H issued by NMED on October 22, 2003. The data disintegrator is capable of data destruction of paper, microfiche, film, plastic magnetic tape, and compact discs.

Paper materials suspended in the exhaust are processed through a cyclone separator and cloth tube filters. The paper particles captured by the cyclone separator and cloth tube filters are collected in a dumpster. The dumpster is then sent to the county landfill for disposal of the material. Microfiche, film, plastic magnetic tape, and compact disc material do not enter the external exhaust system and are instead captured in a separate collection system contained inside the building. This material is sent out for metals recycling and disposal.

2.8.2 Operating Schedule

The maximum capacity of the data disintegrator is 1,200 pounds of material per hour, 8,760 hours/year for a total of 5,256 tpy of material shredded. However, the actual operating hours are more accurately characterized by a schedule of 1,200 pounds of material per hour, 6.5 hours per day, and five days per week for a total of 1,014 tpy of material.

2.8.3 Process Flow Diagram

A process flow diagram for the data disintegrator is provided in Figure 2.8-1.

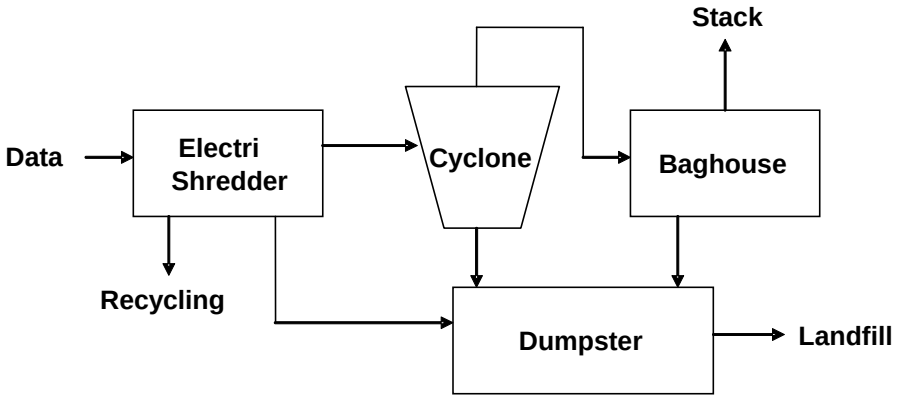


Figure 2.8-1. Process Flow Diagram for Data Disintegrator.

2.8.4 Emissions

Data disintegrator operation is a source of particulate air emissions. Emission estimates are based on manufacturer's data regarding particle size produced by the data disintegrator and efficiencies of the pollution control devices. The cyclone provides 75% control efficiency and the cloth tube filters provide 95% efficiency. Further, the manufacturer, Security Engineered Machinery (SEM) estimates that 15% of the material will remain suspended in the exhaust while 85% of the particles will fall into the collection system by gravity.

The estimated emissions are based on the following calculations and shown in Table 2.8-1.

$$\text{Uncontrolled Emission Rate}\left(\frac{lb}{hr}\right) = 1200\,\frac{lb}{hr} * (0.15)$$

$$\textit{Controlled Emission Rate}\left(\frac{lb}{hr}\right) = 1200\,\frac{lb}{hr} * (0.15) * \left(\frac{100-75}{100}\right) * \left(\frac{100-95}{100}\right)$$

Table 2.8-1. Emissions Estimates from the Data Disintegrator

Emission	Emissions of TSP and PM_{10}	
	lb/hr	tpy
Uncontrolled	180	788
Controlled[(a)]	2.3	9.9

(a) Allowable emission rates from NSR Permit 2195H.

The controlled emissions, 2.3 pounds per hour (9.9 tpy), of PM are based on continuous operations (8,760 hrs/yr). As described in Section 2.8.2, the data disintegrator does not operate on a continuous basis and the actual emissions are less.

2.8.5 Emissions Control Equipment

The data disintegrator exhaust system is equipped with both a 10-horsepower cyclone separator and cloth tube filters to control particulate emissions. SEM estimates the cyclone to provide 75% control efficiency and the cloth tube filters to provide 95% efficiency.

2.8.6 Operational Plan

Emissions at startup and shutdown are not expected to differ from those during normal operations. TSP and PM_{10} emissions from operations having collection systems equipped with

filters could be increased by a malfunction of the collection system (e.g., a tear in the filter). If there is any indication that the control systems are not functioning properly, the operation will be discontinued and the cause of the indication investigated.

2.8.7 Applicable Requirements

The data disintegrator is subject to the requirements set forth in NSR Air Quality Permit No. 2195-H. See Table 2.8-2.

2.8.8 Location of Data Disintegrator

The location of the Data Disintegrator can be found in Figures 2.8-2 and 2.8-3.

Table 2.8-2. Applicable Requirements for the Data Disintegrator and Proposed Changes to the LANL Operating Permit (P100M2)

<table>
<tr><th>Existing P100M2 Permit Conditions – Data Disintegrator</th><th>Proposed Changes</th></tr>
<tr><td>

2.8 Data Disintegrator

All of the process equipment authorized for this source type is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):

<table>
<tr><th>Emission Unit No.</th><th>Unit Type</th><th>Manufacturer</th><th>Model No./Serial No.</th><th>Year of Manuf.</th><th>Capacity Nameplate</th><th>Type of Control Equipment</th></tr>
<tr><td>TA-52-11</td><td>Data Disintegrator/ Industrial Shredder</td><td>Security Engineered Machinery</td><td>1424/11892</td><td>9/2002</td><td>1,200 lb/hr</td><td>Cyclone w/75% control efficiency and cloth tube filters w/95% control efficiency</td></tr>
</table>

</td><td>No Change</td></tr>
<tr><td>

2.8.1 Applicable Requirements

2.8.1.1 NSR Permit Number 2195H

</td><td>No Change</td></tr>
<tr><td>

2.8.2 Emission Limits

<table>
<tr><th>Source</th><th colspan="4">Allowable Emission Limits</th></tr>
<tr><td rowspan="2">TA-52-11</td><td>TSP (pph)</td><td>TSP (tpy)</td><td>PM10 (pph)</td><td>PM10 (tpy)</td></tr>
<tr><td>2.3</td><td>9.9</td><td>2.3</td><td>9.9</td></tr>
</table>

PM_{10} and TSP emissions limits shown in above table are after controls.
This condition is pursuant to 40CFR50 Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.

</td><td>No Change</td></tr>
<tr><td>

2.8.3 Operational Requirements

None

</td><td>No Change</td></tr>
<tr><td>

2.8.4 Emissions Monitoring

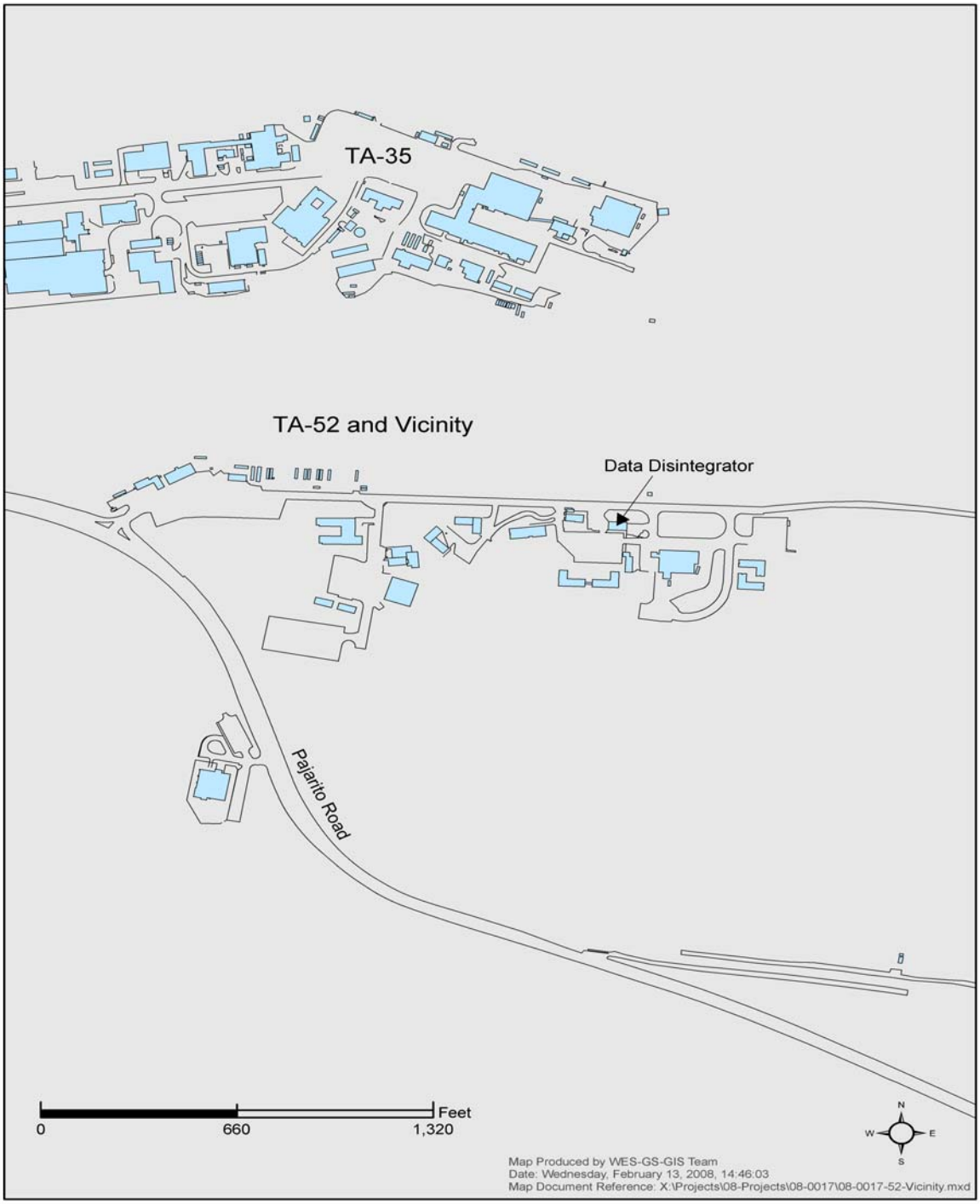
2.8.4.1 The permittee shall maintain a log of the number of boxes of media that are destroyed and calculate the emissions on a semiannual basis in accordance with Condition 4.1. This condition is pursuant to 20.2.70.302.C NMAC.

</td><td>No Change</td></tr>
<tr><td>

2.8.4.2 The permittee shall perform regular maintenance and repair on the cyclone and cloth tube filter(s) per manufacturer's recommendations. This condition was brought forward from NSR Permit No. 2195H Condition 1.d.

</td><td>No Change</td></tr>
</table>

Existing P100M2 Permit Conditions – Data Disintegrator	Proposed Changes
2.8.5 Recordkeeping 2.8.5.1 Record the number of boxes of media that are destroyed monthly.	No Change
2.8.5.2 The permittee shall maintain adequate records on site to demonstrate compliance with manufacturer's recommended repair and maintenance schedules for the cyclone and the cloth tube filter(s). This condition was brought forward from NSR Permit No. 2195H, Condition 4a.	No Change
2.8.6 Reporting 2.8.6.1 Report shall be submitted in accordance with conditions 4.1 and 4.2. This condition is pursuant to 20.2.70.302.E NMAC.	No Change
2.8.7 Compliance 2.8.7.1 If any compliance testing is required, it shall be conducted in accordance with EPA Reference Methods 1 through 4, Method 5 for TSP, and contained in CFR Title 40 Part 60 Appendix A. For combined TSP and PM_{10}, testing shall be in accordance with 40 CFR 51, Appendix M, Method 201. Alternative test method(s) may be used if the Department approves the change. This condition was brought forward from NSR Permit No. 2195H, Condition 6.b, as amended.	No Change



Location of Data Disintegrator at TA-52.

Figure 2.8-2. Location of Data Disintegrator at TA-52.

Emission Unit: TA-52-11, Data Disintegrator.

Figure 2.8-3. Location of Emission Unit TA-52-11, Data Disintegrator.

2.9 Power Plant at TA-3 (TA-3-22)

2.9.1 General Description of Source Category

The TA-3 Power Plant provides space heating to most of the buildings at TA-3. Steam produced is also used for process needs and to produce electricity in one 17-MW and two 5-MW steam turbine generators. The plant consists of three dual-fuel boilers with natural gas being the primary fuel and No. 2 fuel oil available for use as a standby fuel. Each boiler has a nameplate maximum heat input capacity of 210 MMBtu/hr. Because LANL is located at a high elevation, the boilers do not operate at nameplate capacity. The maximum heat input capacity, derated for altitude, is calculated to be 178.5 MMBtu/hr. This reflects a 15% decrease in input rating. Two of the boilers were manufactured by Edgemoor Iron Works and installed in 1950. The third boiler was manufactured by Union Iron Works and installed in 1951.

In July 2004, a construction permit for a 24.6-MW simple-cycle natural gas combustion turbine was issued by the NMED. The turbine, which runs solely on natural gas, has a design capacity of 24.6 MW at the average temperature and altitude for LANL. The turbine was manufactured by Rolls-Royce and started operation in September 2007. Due to limiting factors of the equipment and system, the combustion turbine will have a practical electrical output limit of 23 MW. Due to environmental considerations (i.e., temperature, humidity, and atmospheric pressure) the electrical output will range from 20 to 23 MW.

2.9.2 Operating Schedule

The plant operates 24 hours per day and 7 days per week. Normally, only two boilers are operated simultaneously, one of which is on hot standby and the other is running at partial capacity. Under maximum operating conditions, such as during peak generation of electricity, the third boiler can be brought on-line. The simple-cycle combustion turbine is also used to ensure that electric power is available to LANL during periods of peak demand. When in operation, the turbine operates at 100% load except for minimal time during startup and shutdown.

2.9.3 Process Flow Diagram

A process flow diagram for the TA-3 Power Plant is presented in Figure 2.9-1.

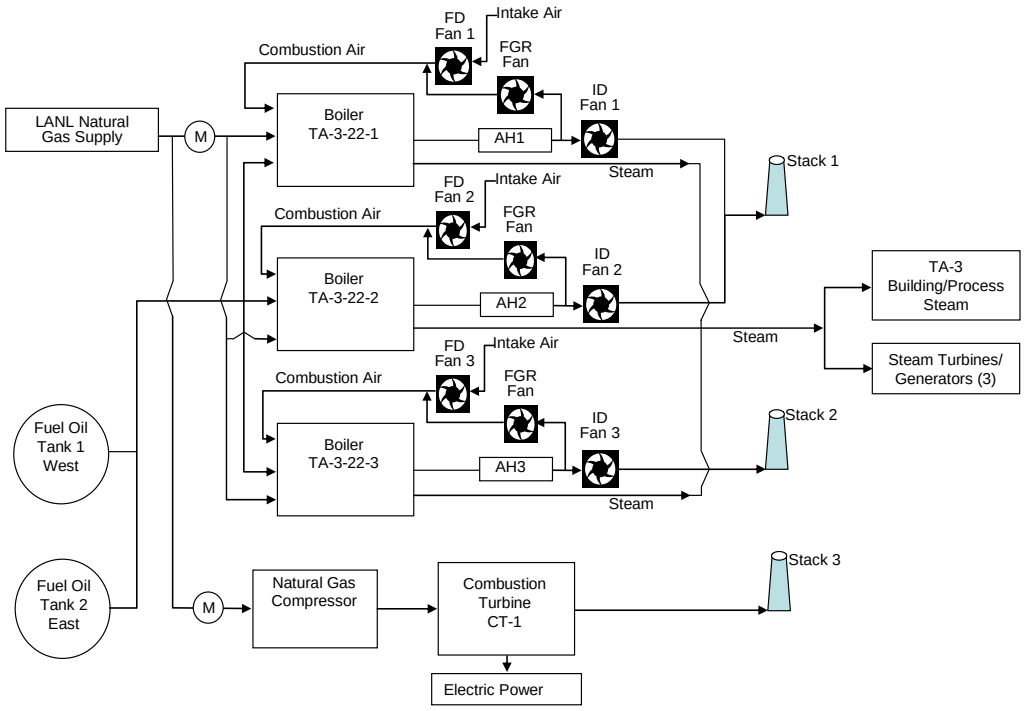


Figure 2.9-1. Process flow diagram for TA-3 Power Plant.

2.9.4 Emissions

Combustion of natural gas and fuel oil at the plant results in emissions of criteria pollutants (NO_x, CO, SO_x, PM, VOCs) and small quantities of HAPs. In September 2002, LANL completed installation of a flue gas recirculation (FGR) air pollution control system to reduce emissions of NO_x. NMED issued NSR Permit 2195B for the FGR project. In November of 2003, LANL submitted an air quality construction permit application to NMED to install a 24.6-MW simple-cycle combustion turbine. NMED issued NSR Permit 2195BM1 for the combustion turbine on July 30, 2004. This permit included new hourly and annual emission limits for applicable criteria pollutants for each emission unit. These maximum allowable emission rates are based on the maximum quantities of natural gas and fuel oil use allowed by the permit. The permit specifies maximum fuel quantities, used by all three boilers combined, of 2,000 MMscf of natural gas and 500,000 gallons of fuel oil in any 365-day period. The combustion turbine has a maximum fuel use restriction of 646 MMscf of natural gas in any 365-day period.

In this application, LANL is proposing new individual boiler fuel limits. These maximum fuel limits for each boiler are proposed at 1,200 MMscf of natural gas and 170,000 gallons of fuel

oil in any 365-day period. The purpose for these restrictions is to keep maximum uncontrolled emissions, from each boiler, less than 100 tpy of NO_x. The fuel limits are being requested in lieu of a Compliance Assurance Monitoring (CAM) plan under 40 CFR, Part 64, which would otherwise need to be included within this renewal application. Part 64 requirements would apply if the potential pre-control device (FGR) NO_x emissions were equal to or greater than 100 tpy for any one boiler.

The proposed individual boiler fuel limits equate to a maximum uncontrolled NO_x emission rate of 99.8 tpy per boiler. The uncontrolled NO_x emission factor used for natural gas combustion, 163 lbs/Mmscf, was taken from emission tests performed prior to installation of the FGR system. The emission factor for fuel oil, 24 lbs/mgal, was taken from AP-42, Table 1.3-1 (9/98). These factors were also used in the FGR permit application for uncontrolled NOx emissions.

Tables 2.9-1 and 2.9-2 show the allowable emission rates from the combustion turbine NSR permit.

Table 2.9-1. Criteria Pollutant Emission Rates[(a)]

Unit No.[(b)]	PM (lb/hr)		PM_{10} (lb/hr)		NO_x (lb/hr)		CO (lb/hr)		VOC (lb/hr)		SO_x (lb/hr)	
	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil
Boiler TA-3-22-1	1.3	4.3	1.3	3.0	10.2	11.3	7.0	6.5	1.0	0.3	1.1	9.6
Boiler TA-3-22-2	1.3	4.3	1.3	3.0	10.2	11.3	7.0	6.5	1.0	0.3	1.1	9.6
Boiler TA-3-22-3	1.3	4.3	1.3	3.0	10.2	11.3	7.0	6.5	1.0	0.3	1.1	9.6
Combustion Turbine TA-3-22 CT-1	1.6		1.6		23.8		170.9		1.0		1.4	

(a) The allowable emissions estimates were calculated using a heat value of 137,000 Btu/gallon for diesel, a boiler derated capacity of 178.5 MMBtu/hr per unit, a natural gas heat content of 1,030 Btu/scf, and a sulfur content of 0.05% for fuel oil.
(b) Unit numbers for the three boilers and combustion turbine follow numbering from Permit P100M2. NSR Permit 2195BM1 used B-1, B-2, and B-3 for the boilers and CT-1 for the combustion turbine.

Table 2.9-2. Criteria Pollutant Emission Rates[(a) (b)]

Unit	PM (tpy)	PM_{10} (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)	SO_x (tpy)
Combined Boilers	7.7	7.7	58	40.4	5.6	6.1
Combustion Turbine TA-3-22 CT-1	2.3	2.3	33.2	19.8	Neg.[(c)]	1.9

(a) The allowable emissions estimates were calculated using a heat value of 137,000 Btu/gallon for diesel, a boiler derated capacity of 178.5 MMBtu/hr per unit, a natural gas heat content of 1,030 Btu/scf, and a sulfur content of 0.05% for fuel oil.
(b) 12-month rolling totals.
(c) NMED did not assign an emission limit to estimates less than or equal to 0.5 tpy within NSR Permit 2195BM1.

The emission factors for the combustion turbine are shown in Table 2.9-3. LANL conducted an emissions compliance test on the power plant boilers in September 2002 and results were reported to NMED. From the test results, a NO_x controlled emission factor was derived by taking the average of the three test results (from each boiler) in lb/MMBtu. During the test, the FGR system was in operation and the boilers were burning natural gas. The average controlled emission factor is 0.058 lb NO_x/Mscf (based on an average natural gas heat content of 1,030 Btu/scf). Using this controlled emission factor, and the uncontrolled NO_x emission factor from the FGR application of 0.163 lb/Mscf, an average NO_x control efficiency of approximately 64% is derived.

Emission factors for CO, VOC, TSP, $PM_{10,}$ and SO_x for the boilers are from AP-42. The SO_x emission factor is based on the maximum sulfur content in the pipeline natural gas supplied by the Public Service Company of New Mexico (PNM) of two grains of sulfur per 100 scf of natural gas.

The NO_x emission factor for combustion of fuel oil was derived by applying the average 64% reduction from the 2002 emission test to the AP-42 emission factor used in the FGR permit application of 24 lb/Mgal. The resulting factor is 8.64 lb/Mgal. The SO_x factor is based on the maximum sulfur content of 0.05% in the supplied fuel oil.

Emission factors for the combustion turbine, except for PM and PM_{10}, which are from AP-42, were supplied by Rolls-Royce, the combustion turbine manufacturer. For the combustion turbine, both NO_x and CO emission concentrations are 25 ppmv at 15% O2, dry. Mass emission rates for NO_x and CO vary with ambient temperature and humidity. Lower ambient temperatures, with an increased density of air, increases the mass flow rate of air (and turbine power output) and the mass emission rate of pollutants. To account for this variability, annual mass emission rates are estimated for the combustion turbine at an average temperature of 47.9 °F and a relative humidity of 51%. These values represent averages from a 30-year climatology record for Los

Alamos. Hourly mass emission rates are estimated based on a worst-case ambient temperature of minus 18 °F.

Emission rates vary depending on load conditions. The turbine currently has a condition to limit operation of the combustion turbine at 100% load. The turbine will only be operated at 100% load except for startup and shutdown. All emission estimates are based on the 100% load operating condition. Following the installation and startup of the unit, an evaluation was performed to determine the maximum electrical output of the combustion turbine generator. Due to component limitations, the maximum output of the combustion turbine generator has been set at 23 MW. Due to the variability in output due to atmospheric conditions, 100% full load consists of a range from 20 to 23 MW.

HAP emission estimates for boilers were calculated using emission factors shown in Table 2.9-3. Natural gas emission factors for the boilers were taken from AP-42, 7/98, Section 1.4, Natural Gas Combustion, Table 1.4-2. Fuel oil emission factors for formaldehyde and polycyclic organic matter are from AP-42, 9/98, Section 1.3, Fuel Oil Combustion, Table 1.3-8, and trace metals are from Table 1.3-10. AP-42 does not contain additional organic HAP emission factors for distillate fuel oil combustion. The remaining HAP emission factors for distillate fuel oil use are from the external combustion boiler section of EPA's Factor Information Retrieval (FIRE) emission factor database (10/2004 version). HAP emission factors for combustion of natural gas in the combustion turbine were taken from AP-42, 4/2000, Section 3-1, Natural Gas Turbines, Table 3.1-3.

Table 2.9-3. Emission Factors

Fuel	Emission Factor Unit	PM	PM_{10}	NO_x	CO	VOC	SO_x	HAP
Boiler - Natural gas[(a)(b)]	($lb/10^6 ft^3$)	7.6	7.6	58 [(c)]	40[(d)]	5.5	6[(e)]	1.91
Boiler - Distillate oil[(f)]	($lb/10^3 gal$)	2	1	8.64[(g)]	5	0.2	7.4[(h)]	6.77E-02[(i)]
Combustion Turbine[(j)(b)]	($lb/10^6 ft^3$)	7	7	102.9	61.3	0.4	6[(e)]	1.07

(a) Emission factors, unless otherwise indicated, are from AP-42, 7/98, Section 1.4, Natural Gas Combustion, Tables 1.4-2, 1.4-3, and 1.4-4.
(b) The natural gas heat content of 1,030 Btu/scf was used.
(c) Based on source test data from September 2002. This emission factor is the average value from the source test and takes into account the controlled emissions from the FGR system.
(d) AP-42, 1/95, Section 1.4, Natural Gas Combustion, Table 1.4-2. This version of AP-42 is used as it is closer to emissions identified during compliance tests.
(e) The SO_x emission factor is based on the maximum sulfur content in the pipeline natural gas supplied by PNM of two grains S/100 scf of natural gas.
(f) Emission factors, unless otherwise indicated, are from AP-42, 9/98, Section 1.3, Fuel Oil Combustion, Tables 1.3-1, 1.3-3, 1.3-6, 1.3-8, 1.3-9, and 1.3-10.
(g) The factor assumes similar reduction for oil as that determined for natural gas using the September 2002 FGR compliance test.
(h) SO_x (SO_2 + SO_3) from AP-42, 9/98, Section 1.3 – Fuel Oil Combustion, Table 1.3-1 corrected by EPA on 4/28/00 (from 157S to 142S), using 0.05% S.
(i) Emission factors from AP-42, 9/98, Section 1.3, Fuel Oil Combustion, Tables 1.3-8, 1.3-9, and 1.3-10, and EPA

FIRE, 10/2004, database. Heating value of 137,000 Btu/gal used in emission factor conversions.
(j) Emission factors for NO_x, CO, and VOC were provided by the turbine manufacturer (Rolls-Royce). Operation of the turbine will be at 100% load. All calculations for these pollutants use the average ambient temperature of 47.9 °F and 51% humidity. PM and PM_{10} are taken from AP-42, 4/00, Section 3.1 – Stationary Gas Turbines. The CO emission factor from Rolls-Royce for the worst-case hourly emission estimate at -18 °F is 731 lb/10^6 ft^3.

HAP emission estimates are shown in Table 2.9-4. Estimated emissions were calculated based on the maximum fuel usage allowed under NSR Permit No. 2195BM1 and the emission factors in Table 2.9-3.

Table 2.9-4. HAP Emission Estimates for the TA-3 Power Plant

Fuel Type	Total HAP (tpy)
Boilers - Natural Gas	1.9
Boilers - Fuel Oil	0.017
Combustion Turbine – Natural Gas	0.35
Total	2.27

A sample emission calculation is shown below. The NO_x emissions from the power plant boilers were calculated using a FGR control efficiency of 64%. This percentage was determined using 2002 emission test results.

$$Emission\ \text{Rate}\left(\frac{\text{ton}}{\text{year}}\right) = \left[\text{EF}\left(\frac{lb}{10^6\ ft^3}\right) * \text{Nat. Gas Usage}\left(\frac{2{,}000\ \text{MMscf}}{\text{year}}\right) + EF\left(\frac{\text{lb}}{10^3\text{gal}}\right) * \text{Fuel Oil Usage}\left(\frac{500{,}000\ \text{gal}}{\text{year}}\right)\right]\left(\frac{\text{ton}}{2000\ \text{lb}}\right)$$

The TA-3 Power Plant currently is operated under a series of operating instructions to ensure the protection of employee safety and health, integrity of the equipment, and protection of the environment. Specific procedures for operating the boilers and turbine during startup, shutdown, and malfunction are currently in place. These procedures serve to minimize emissions during startup, shutdown, or malfunction.

2.9.5 Emissions Control Equipment

The primary air pollutant emitted from the TA-3 Power Plant is NO_x. The FGR system was installed in 2002 to reduce the amount of NO_x emitted from the boilers. Approximately 64% of NO_x emissions are reduced by the FGR control system. In the FGR system, a portion of exhaust flue gas is recycled and mixed with combustion air before being fed to a burner. Combustion products in the recycled flue gas act as inerts or diluents during combustion of the fuel/air mixture and suppress NO_x formation primarily by reducing combustion temperatures.

NO_x emissions from the combustion turbine are controlled by a pre-mix, lean-burn series staged combustion system. This dry low-NO_x control technology, called Dry Low Emission (DLE), will lower the combustion turbine NO_x emissions by approximately 70%. Lean combustion involves increasing the air-to-fuel ratio of the mixture so that the peak and average temperatures within the combustor will be less than that of the stoichiometric mixture, thus suppressing thermal NO_x formation.

2.9.6 Operational Plan

The power plant boilers are controlled by both manual and automated systems. All systems are continually monitored, 24 hours a day, in the plant control center. Because the plant is continually monitored, routine startup and shutdown emissions are not expected to differ substantially from regular operating emissions. The units have a "dual fuel" capability, using both natural gas and No. 2 fuel oil. The primary fuel is natural gas and fuel oil is used as a back-up fuel in the case where the natural gas supply is unavailable. The boilers are periodically tested using fuel oil to demonstrate their operational readiness and to train operators on the fuel oil use procedure. When starting on, or switching to fuel oil, the exhaust stack is observed by an EPA Method 9 certified opacity reader. If visible emissions do not decline over a short period of time, the fuel switch operation will be aborted and contributing factor identified. Routine and preventive maintenance are regularly performed on the boilers.

Emissions from the startup and shutdown of the combustion turbine generator are expected to be less then or equal to those during normal operations. The turbine uses natural gas as a fuel and has a system incorporated into its design to reduce emissions. The system is called Dry Low Emission (DLE) technology. Because this technology is an integral part of the system, there is no expectation of malfunction or increased emissions. If a malfunction of the turbine is identified, the plant operator will take whatever actions are required to remedy the issue. The cause, along with all actions taken to resolve it, will be recorded and reported as required. Routine and preventive maintenance are performed as recommended by the equipment manufacturer.

2.9.7 Applicable Requirements

Unit-specific applicable requirements that apply to the TA-3 Power Plant, including the combustion turbine, are listed in Table 2.9-5.

2.9.8 Location of Power Plant at TA-3.

The location of the Power Plant at TA-3 can be found in Figures 2.9-2 and 2.9-3.

Table 2.9-5. Applicable Requirements for the TA-3 Power Plant and Proposed Changes to the LANL Operating Permit (P100M2)

Existing P100M2 Permit Conditions – Power Plant at TA-3 (TA-3-22)	Proposed Changes
2.9 Power Plant at TA-3 (TA-3-22) All of the process equipment authorized for this facility is listed in the table shown below (emission units that were identified as insignificant or trivial and equipment not regulated pursuant to the Act are not included):	No Change

Emission Unit No.	Equipment Type	Make/Serial No.	Year of Manuf.	Capacity[1]
TA-3-22-1	Boiler	Edgemoor Iron Works/ 4008	1950	178.5 MMBtu/hr
TA-3-22-2	Boiler	Edgemoor Iron Works/ 4009	1950	178.5 MMBtu/hr
TA-3-22-3	Boiler	Union /11804	1951	178.5 MMBtu/hr
TA-3-22 CT-1	Combustion Turbine	Rolls-Royce/RB211-6761 DLE	2003	24.6 MW
F-1	Flue Gas Recirculation Fan	Robinson Industries	2001	1,800 rpm
F-2	Flue Gas Recirculation Fan	Robinson Industries	2001	1,800 rpm
F-3	Flue Gas Recirculation Fan	Robinson Industries	2001	1,800 rpm

[1]The boiler and turbine capacity listed has been derated for altitude from the maximum heat input rating.

2.9.1 Applicable Requirements The boilers (Units TA-3-22-1, TA-3-22-2, TA-3-22-3) are subject to 20.2.33 and 20.2.34 NMAC. The combustion turbine (Unit TA-3-22 CT-1) is subject to 40 CFR Part 60 Subpart A and 40 CFR Part 60 Subpart GG. The boilers and the turbine are subject to 20.2.61 NMAC. NSR Permit Number 2195BM1 applies to the power plant as a whole.	No Change

Existing P100M2 Permit Conditions – Power Plant at TA-3 (TA-3-22)	Proposed Changes
2.9.2 Emission Limits	Request individual emission limits on each boiler unit 0f 99.8 tpy of NO_x.

Source	Allowable Emission Limits											
	NO_x (lb/hr)		CO (lb/hr)		SO_x (lb/hr)		TSP (lb/hr)		PM_{10} (lb/hr)		VOC (lb/hr)	
	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil
TA-3-22-1	10.2	11.3	7.0	6.5	1.1	9.6	1.3	4.3	1.3	3.0	1.0	0.3
TA-3-22-2	10.2	11.3	7.0	6.5	1.1	9.6	1.3	4.3	1.3	3.0	1.0	0.3
TA-3-22-3	10.2	11.3	7.0	6.5	1.1	9.6	1.3	4.3	1.3	3.0	1.0	0.3
Boilers Combined[1]	60.2 tpy		41.3 tpy		7.9 tpy		8.4 tpy		8.2 tpy		5.6 tpy	
TA-3-22 CT-1 (lb/hr)	23.8		170.9		1.4		1.6		1.6		1.0	
TA-3-22 CT-1 (tpy)[1,2]	33.2		19.8		1.9		2.3		2.3		-	

[1]Annual emission limits are 12-month rolling totals. This is pursuant to NSR Permit No. 2195BM1, Table 2.2, Note 1.
[2] "-" notation implies emission rates less than or equal to 0.5 tpy

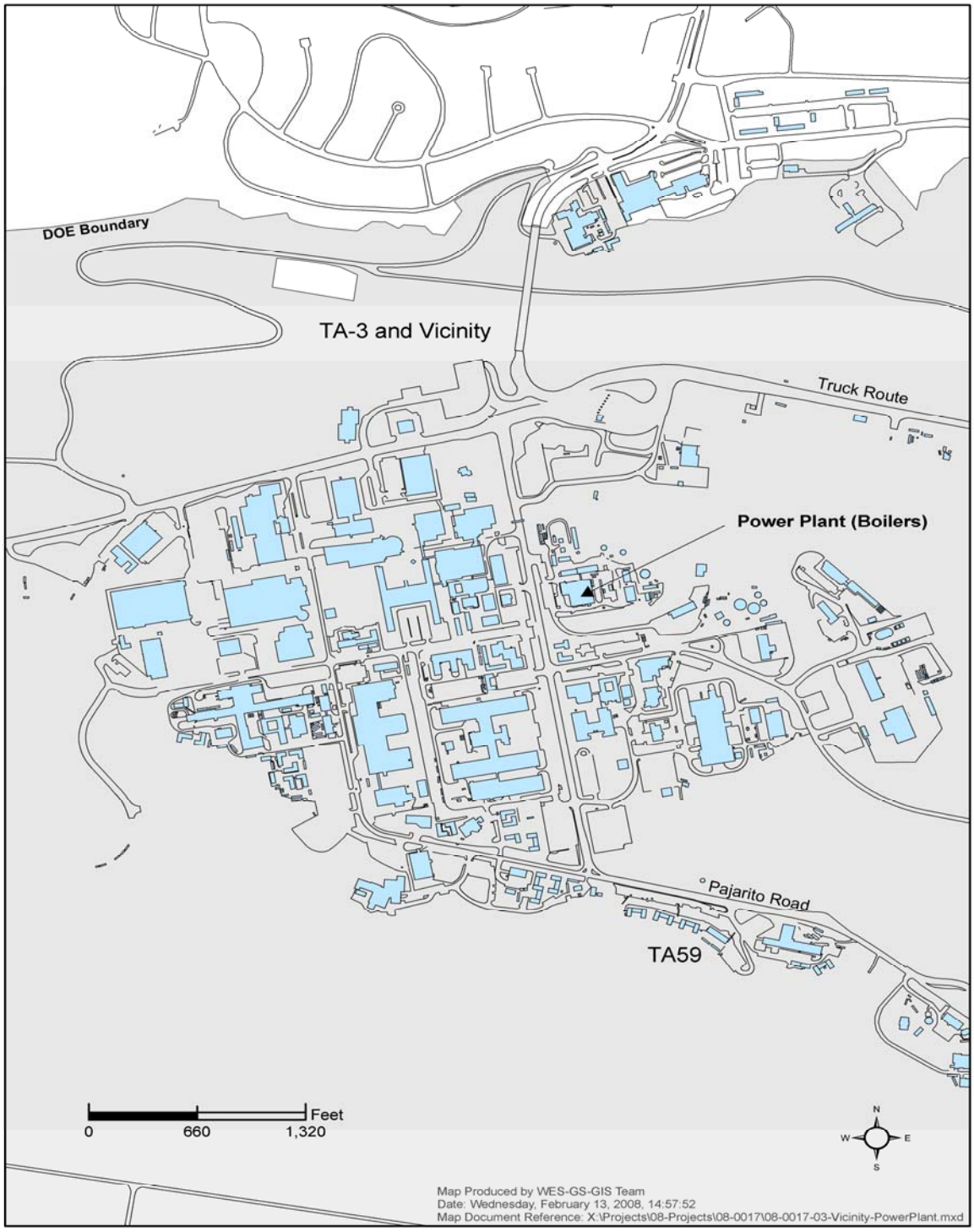
2.9.2.1 Nitrogen dioxide emissions shall not exceed 0.3 lb/MMBtu of heat input from Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 when burning natural gas or oil. This condition was brought forward from NSR Permit No. 2195BM1, Condition 2.b.	No Change
2.9.2.2 Nitrogen oxide emissions from the Unit TA-3-22 CT-1 shall not exceed 25 ppmv at 15% O_2. This condition was brought forward from NSR Permit No. 2195BM1, Condition 2d.	No Change
2.9.3 Operational Requirements 2.9.3.1 Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 shall either use pipeline quality natural gas containing no more than two grains of total sulfur per 100 standard cubic foot or No. 2 fuel oil that is not a blend containing waste oils or solvents and contains less than or equal to 0.05% sulfur by weight. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.g.	No Change

Existing P100M2 Permit Conditions – Power Plant at TA-3 (TA-3-22)	Proposed Changes
2.9.3.2 Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 combined shall not use more than 2,000 MMscf of natural gas in any 365 day period or more than 500,000 gallons of No. 2 fuel oil in any 365 day period. These conditions were brought forward from NSR Permit No. 2195BM1, Conditions 1.g.i and 1.g.ii.	Request 1,200 MMscf of natural gas limits on each individual boiler for any 365-day period. Request 170,000 gallons of No. 2 fuel oil for each individual boiler in any 365-day period.
2.9.3.3 A volumetric flow meter shall be connected to the facility or to Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 so that the total amount of natural gas being used by the boilers can be continually recorded. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.h.	No Change
2.9.3.4 Unit TA-3-22 CT-1 shall use pipeline quality natural gas containing no more than two grains of total sulfur per 100 standard cubic foot. Unit TA-3-22 CT-1 shall not use more than 646 MM standard cubic feet (SCF) of natural gas in any 365 day period. These conditions were brought forward from NSR Permit No. 2195BM1, Conditions 1.i and 1.j.	No Change
2.9.3.5 A volumetric fuel flow meter shall be connected to Unit TA-3-22 CT-1 so that the total amount of natural gas being used can be continually recorded. Although the facility is not subject to 40 CFR Part 75, Federal Acid Rain requirements, the flow meter shall meet the initial certification requirements of 40 CFR Part 75, Appendix D 2.1.5 and the quality assurance requirements of 40 CFR Part 75, Appendix D 2.1.6. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.k.	No Change
2.9.3.6 Unit TA-3-22 CT-1 shall be equipped with Rolls-Royce Dry Low Emissions (DLE) control technology (pre-mix, lean-burn series staged combustion system) to control NOx emissions. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.e.	No Change
2.9.3.7 Unit TA-3-22 CT-1 shall be operated at no less than 100% full load, except for minimal periods during startup and shutdown conditions. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.f.	No Change
2.9.3.8 Hours of operation, including start-up and shut-down times, of Units TA-3-22-1, TA-3-22-2, TA-3-22-3 and TA-3-22 CT-1 shall be monitored and recorded daily. This condition was brought forward from NSR Permit No. 2195BM1, Condition 1.l. The conditions of Section 2.9.3 are pursuant to Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC.	No Change
2.9.4 Emissions Monitoring Requirements 2.9.4.1 Total fuel oil consumption shall be monitored so that combined fuel oil usage of Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.a.	No Change
2.9.4.2 Natural gas consumption shall be monitored so that combined natural gas usage of Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.b.	No Change

2.9.4.3 Natural gas consumption shall be monitored so that natural gas usage for Unit TA-3-22 CT-1 can be calculated on a rolling 365-day total. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.f.	No Change
2.9.4.4 A certification of total sulfur content of the No. 2 fuel oil used by Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 shall be obtained from the supplier whenever No. 2 fuel oil is delivered to the facility. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.c	No Change
2.9.4.6 The operating load of Unit TA-3-22 CT-1 specified by Condition 2.9.3.7 shall be monitored and recorded hourly during normal operations of that unit. Periods of startup and shutdown shall not be included in the hourly monitoring but shall be recorded separately. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.e.	No Change
2.9.4.7 Compliance with NO_x pound per hour emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the daily total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.1029 pounds NO_x per thousand SCF of gas burned (applicable for worst-case conditions of negative 18 degrees Fahrenheit) and divided by the number of hours of operation of the unit during that day as recorded pursuant to Condition 2.9.3.8. Compliance with NO_x annual emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the 365 day total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.1029 pounds NO_x per thousand SCF of gas burned (applicable for annual average conditions of 47.9 degrees Fahrenheit). This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.g.	No Change
2.9.4.8 Compliance with CO pound per hour emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the daily total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.731 pounds CO per thousand SCF of gas burned (applicable for worst-case conditions of negative 18 degrees Fahrenheit), and divided by the number of hours of operation of the unit during that day as recorded pursuant to Condition 2.9.3.8). Compliance with CO annual emission limits for Unit TA-3-22 CT-1 shall be determined by multiplying the 365 day total natural gas firing rate for the unit (expressed in thousands of SCF), as recorded pursuant to Condition 2.9.5.3, by the manufacturer's guaranteed emission rate of 0.0613 pounds CO per thousand SCF of gas burned (applicable for annual average conditions of 47.9 degrees Fahrenheit). This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.h.	No Change
2.9.4.9 At least once each calendar quarter the permittee shall use the method specified in Conditions 2.9.4.7 and 2.9.4.8 to determine compliance of Unit TA-3-22 CT-1 with the hourly and annual emission limits specified in this permit. This condition was brought forward from NSR Permit No. 2195BM1, Condition 3.i.	No Change
2.9.4.10 Visible emissions from stationary combustion equipment shall not equal or exceed an opacity of 20%. Use of pipeline quality natural gas fuel as defined in Conditions 2.9.3.1 and 2.9.3.4 constitutes compliance with 20.2.61 NMAC unless opacity exceeds 20%. At such time as No. 2 fuel oil as defined in Condition 2.9.3.1 is used, opacity shall be measured in accordance with the procedures at 40 CFR 60, Appendix A, Method 9. Opacity measurements shall continue on a quarterly basis per calendar year for each effected unit until such time as pipeline quality natural gas is used. This condition is pursuant to 20.2.61 NMAC and NSR Permit No. 2195BM1, Condition 2.c.	No Change

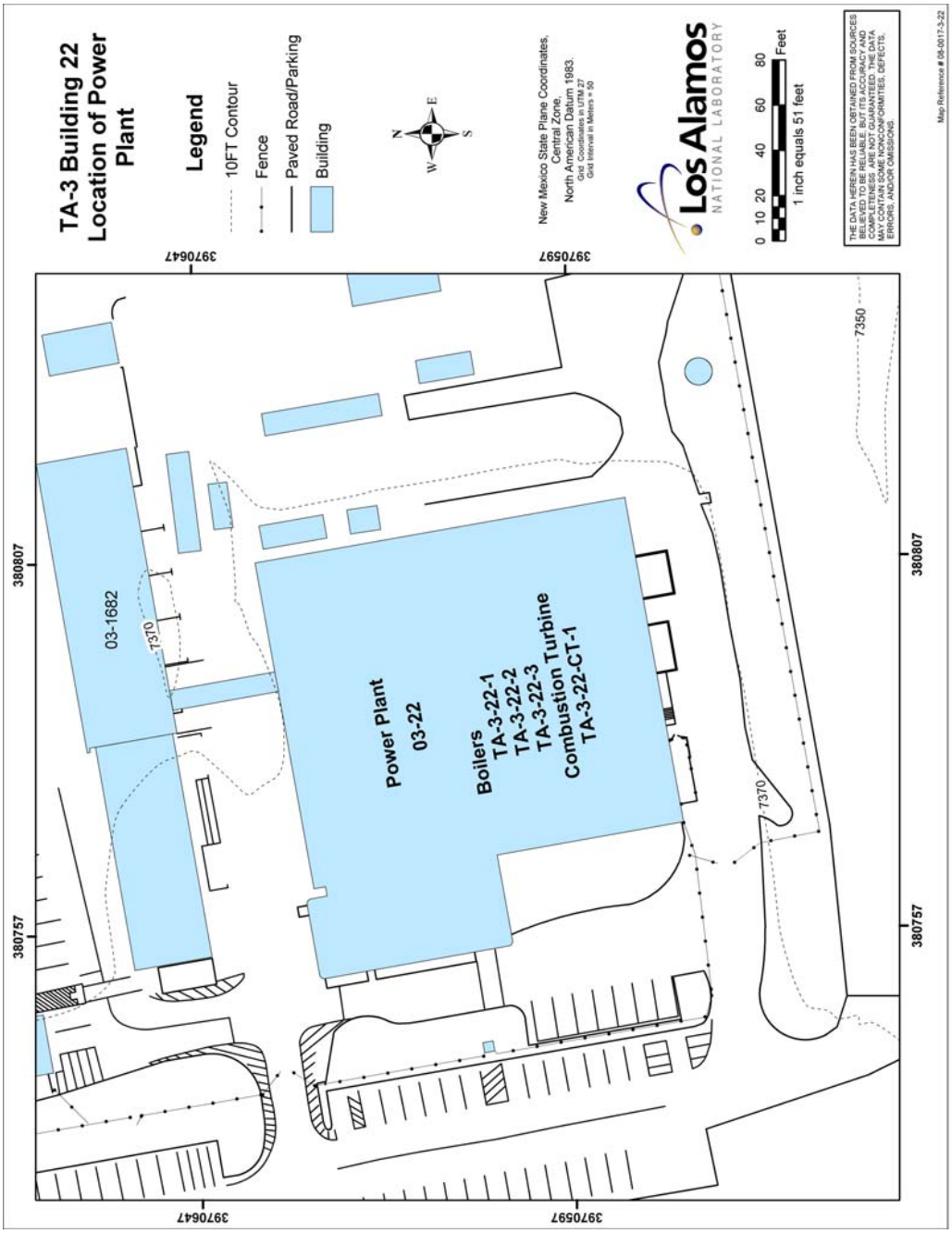
Existing P100M2 Permit Conditions – Power Plant at TA-3 (TA-3-22)	Proposed Changes
2.9.4.11 Initial compliance tests are required on Unit TA-3-22 CT-1 for NO_x and CO. These tests shall be conducted within sixty (60) days after the unit achieves the maximum normal production. If the maximum normal production rate does not occur within one hundred twenty (120) days of source startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of the source. The tests shall be conducted in accordance with EPA Reference Methods 1 through 4, Method 7E for NO_x, and Method 10 for CO contained in CFR Title 40, Part 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 permittee shall submit a testing protocol to the Department at least thirty (30) days prior to the test date, and provide notification to the Department at least thirty (30) days before the test date. This condition was brought forward from NSR Permit No. 2195BM1, Condition 6.b and General Condition 13.	No Change
2.9.4.12 The permittee shall comply with fuel sulfur monitoring requirements at 40 CFR 60.334(h) applicable to Unit TA-3-22 CT-1 by making the required demonstration which shows the fuel combusted in the turbine meets the definition of natural gas at 40 CFR 60.331(u). The conditions of Section 2.9.4 are pursuant to 20.2.70.302.C NMAC.	No Change
2.9.5 Recordkeeping 2.9.5.1 Daily total fuel oil used by Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 shall be recorded monthly to be used to calculate a 365 day rolling total.	No Change
2.9.5.2 Daily total natural gas consumption used by Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 shall be recorded monthly to be used to calculate a 365 day rolling total.	No Change
2.9.5.3 Daily total natural gas consumption used by Unit TA-3-22 CT-1 shall be recorded monthly to be used to calculate a 365 day rolling total.	No Change
2.9.5.4 Records shall be kept to verify the total sulfur content of the No. 2 fuel oil used by Units TA-3-22-1, TA-3-22-2, and TA-3-22-3. Fuel supplier certifications shall be kept which include the name of the oil supplier and a statement that the sulfur content of the oil delivered contains less than or equal to 0.05% sulfur by weight. This condition was brought forward from NSR Permit No. 2195BM1, Conditions 4.a and 4.a.i.	No Change
2.9.5.5 If the permittee analyzes the fuel oil, records shall be kept which show the name of the oil supplier, the location of the oil where the sample was taken for analysis, the method used to determine the sulfur content of the oil and the results of the analysis for the sulfur content. This condition was brought forward from NSR Permit No. 2195BM1, Condition 4.a.ii.	No Change
2.9.5.6 Records of the operating load of Unit TA-3-22 CT-1 shall be maintained as required by Condition 2.9.4.6.	No Change
2.9.5.7 The permittee shall keep records of measurements and monitoring data required by Condition 2.9.4.7.	No Change
2.9.5.8 The permittee shall keep records of measurements and monitoring data required by Condition 2.9.4.8.	No Change
2.9.5.9 Quarterly records required by Condition 2.9.4.9 shall be kept on site and shall be made available to Department personnel upon request.	No Change

Existing P100M2 Permit Conditions – Power Plant at TA-3 (TA-3-22)	Proposed Changes
2.9.5.10 Records shall be kept to verify that the natural gas being consumed by Units TA-3-22-1, TA-3-22-2, TA-3-22-3, and TA-3-22 CT-1 is pipeline quality natural gas (less than or equal to 2 grains of total sulfur per 100 standard cubic foot). This condition is brought forward from NSR Permit 2195BM1, Condition 4b. In addition, the permittee shall record dates and duration of use of any fuels other than pipeline quality natural gas and the corresponding opacity measurements.	No Change
2.9.5.11 Records of initial compliance tests and any other emission tests required by the Department shall be maintained for the Unit TA-3-22 CT-1.	No Change
2.9.5.12 Unit TA-3-22 CT-1 shall comply with the recordkeeping requirements of 40 CFR 60.7 and maintain a record referenced by 40 CFR 60.334(h) demonstrating the fuel combusted meets the definition of natural gas. The conditions of Section 2.9.5 are pursuant to Subsection C and Paragraph D(1) of 20.2.70.302 NMAC.	No Change
2.9.6 Reporting 2.9.6.1 Reports shall be submitted in accordance with conditions 4.1 and 4.2. This condition is pursuant to 20.2.60.302.E NMAC.	No Change



Location of Power Plant at TA-3.

Figure 2.9-2. Location of Power Plant at TA-3.



Emission Units: TA-3-22-1, 2, 3, Boilers and TA-3-22-CT-1, Combustion Turbine.

Figure 2.9-3. Location of Emission Units TA-3-33-1, TA-3-22-2, TA-3-22-3 (Boilers) and TA-3-22-CT-1 (Combustion Turbine).

2.10 Facility-Wide Emission Limits

2.10.1 Facility-wide Actual Emissions

As required by P100M2, LANL reports annual actual emissions to the NMED from regulated sources of air pollutants. Table 2.10-1 shows actual facility-wide annual emissions of criteria and HAP pollutants for the previous four years.

Table 2.10-1. Actual Facility-Wide Emission of Selected Pollutants at LANL

Source	Year	NO_x (tpy)	SO_x (tpy)	CO (tpy)	VOC (tpy)	$PM/PM_{10}/PM_{2.5}$ (tpy)	HAPs (tpy)
Asphalt Plant	2004	0	0	0	0	0	0
	2005	0.02	0.004	0.324	0.007	0.008	0.006
	2006	0.025	0.005	0.402	0.008	0.010	0.008
	2007						
Beryllium Activities	2004	-	-	-	-	3.2E-06	3.2E-06
	2005	-	-	-	-	3.2E-06	3.2E-06
	2006	-	-	-	-	3.2E-06	3.2E-06
	2007	-	-	-	-		
Boilers and Heaters	2004	28.3	0.18	22.75	1.61	2.23	0.5
	2005	27.3	0.2	21.9	1.5	2.2	0.5
	2006	25.8	0.2	21.0	1.4	2.0	0.5
	2007						
Carpenter Shops	2004	-	-	-	-	0.021	-
	2005	-	-	-	-	0.085	-
	2006	-	-	-	-	0.11	-
	2007	-	-	-	-		-
Chemical Usage	2004	-	-	-	7.95	-	5.72/1.51*
	2005	-	-	-	11.2	-	5.5/1.0*
	2006	-	-	-	10.1	-	4.8/0.9*
	2007	-	-	-		-	
Degreasers	2004	-	-	-	0.011	-	0.011
	2005	-	-	-	0.011	-	0.011
	2006	-	-	-	0.011	-	0.011
	2007	-	-	-		-	
Internal Combustion	2004	5.87	1.10	1.36	0.32	0.3	2.6E-03
	2005	7.0	1.5	1.7	0.3	0.3	0.0
	2006	18.5	4.1	4.2	0.9	0.9	5.0E-3
	2007						
Data Disintegrator	2004	-	-	-	-	0.10/0.09	-
	2005	-	-	-	-	0.32/0.29	-
	2006	-	-	-	-	0.43/0.39	-
	2007	-	-	-	-		-
Power Plant at TA-3	2004	16.34	0.3	11.26	1.53	2.18	0.53

	2005	16.3	0.2	11.2	1.5	2.1	0.5
	2006	17.8	0.3	12.3	1.7	2.3	0.6
	2007						
Facility-wide	2004	50.5	1.5	35.4	11.4	4.8	6.7/1.5*
	2005	50.5	1.9	35.1	14.6	5.1	6.5/1.0*
	2006	62.1	4.6	37.8	14.2	5.9	6.0/0.9*
	2007						

*Combination of HAPs/Individual HAP

The table presents emissions by source category and is presented to provide a general overview of actual emissions at LANL. This table demonstrates that LANL operates well within the facility-wide emissions limitations found in the current operating permit (P100M2). These emission limits are described in Section 1.5 of this permit renewal application. The emission limitations and actual emissions at LANL demonstrate that LANL remains

- a major source with respect to 20.2.70 NMAC and the EPA Title V Operating Permit Program because allowable emissions from all emission units exceed 100 tpy of any regulated air pollutant,
- a minor source with respect to 20.2.74 NMAC and the EPA PSD program because allowable emissions do not exceed 250 tpy of applicable regulated air pollutants and,
- a minor source with respect to Title III of the Clean Air Act because allowable emissions of HAPs are less than 10 tpy of any one HAP and less than 25 tpy of any combination of HAPs.

2.10.1 Facility-wide Allowable Emissions

Table 2.10-2 summarizes facility-wide allowable emission requirements. LANL does not propose any changes to these limits in this application.

Table 2.10-2. Applicable Requirements for Facility-Wide Emission Limits and Proposed Changes to the LANL Operating Permit (P100M2)

<table>
<tr><th>Existing P100M2 Permit Conditions – Facility Wide Emission Limits</th><th>Proposed Changes</th></tr>
<tr><td>2.10 Facility-Wide Emission Limits
2.10.1 The total allowable emissions from this facility, excluding trivial activities, are shown in the following table. LANL has accepted facility-wide allowable emission limits for criteria pollutants and Hazardous Air Pollutants as shown below.

Total Allowable Criteria Pollutant and HAP Emission Limits
<table>
<tr><th>Pollutant</th><th>Emission Limit (tons per year)</th></tr>
<tr><td>Nitrogen Oxides (NO_x)</td><td>245</td></tr>
<tr><td>Carbon Monoxide (CO)</td><td>225</td></tr>
<tr><td>Volatile Organic Compounds (VOCs)</td><td>200</td></tr>
<tr><td>Sulfur Dioxide (SO_2)</td><td>150</td></tr>
<tr><td>Particulate Matter (PM)</td><td>120</td></tr>
<tr><td>Hazardous Air Pollutants (HAPs)</td><td>24 combined/8 individual</td></tr>
</table></td><td>No Change</td></tr>
<tr><td>2.10.2 20.2.72 NMAC shall apply to any construction or modification of existing equipment that triggers the applicability in section 200 of 20.2.72 NMAC.</td><td>No Change</td></tr>
</table>

3.0 APPLICABLE REQUIREMENTS

This chapter of the application analyzes all state and federal applicable requirements that potentially apply to operations at LANL. Each applicable requirement identified, that applies to an activity or emissions unit at LANL, is discussed further with respect to compliance status. The chapter also includes a request for a permit shield and specifically identifies those regulations that do not apply to LANL and should be cited in the permit shield section of the operating permit. A certification of compliance is also included as required by 20.2.70 NMAC.

3.1 Compliance Status with Applicable Requirements

The New Mexico operating permit regulation defines "applicable requirement" at 20.2.70.7.E NMAC. Under the Title V program, operating permits are to include identification of all applicable requirements that apply to emissions units at the permitted facility. The definition includes all relevant state and federal air quality requirements that apply to air emissions from a stationary source or facility. The major regulatory areas defined as applicable include any requirement within the New Mexico State Implementation Plan (SIP) approved by EPA, any term or condition of an air quality construction permit, any federal National Emission Standard for Hazardous Air Pollutant (NESHAP), any federal New Source Performance Standard (NSPS), any air quality regulation adopted by the New Mexico Environmental Improvement Board (EIB), and any regulation adopted by EPA to protect stratospheric ozone under Title VI of the federal CAA.

The applicability of a specific regulation is typically determined by comparing the applicability criteria within the regulation with a given emissions unit's type, size of operation or equipment, the types of pollutants emitted, and/or the construction or modification date of the unit. A review of each potentially applicable requirement was conducted, and the results are described in Table 3.1-1. The table organizes air quality regulations into two categories: EIB Regulations and Federal Applicable Requirements Not Adopted in EIB Regulations. Requirements listed under EIB Regulations are enforceable by NMED and are also federally enforceable if approved by EPA as part of the New Mexico State Implementation Plan (SIP). Requirements listed under the second heading of Federal Applicable Requirements Not Adopted in EIB Regulations are enforceable by EPA and also must be included in Title V permits whether adopted by the EIB or not. Within the table, "N/A" means the regulation has been determined to not be an applicable requirement at LANL for Title V operating permit purposes.

Table 3.1-1. Review of Applicable Requirements by Regulation

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
EIB Regulations			
20.2.1 NMAC—General Provisions	All	All	N/A—This regulation contains provisions that generally apply to all NMACs, but does not contain a requirement for an emissions unit at LANL.
20.2.2 NMAC—Definitions	All	All	N/A—Applicable to other EIB regulations, but does not contain a requirement for an emissions unit at LANL - see applicability of those regulations.
20.2.3 NMAC—Ambient Air Quality Standards	Pollutants with NM Ambient Air Quality Standards (NMAAQS)	All	N/A—20.2.3 NMAC sets ambient air quality standards for most of New Mexico (NMAAQS). The NMAAQS are utilized by NMED in setting allowable emission limits in the construction permit program. The NMAAQS do not apply to emissions units at Part 70 sources.
20.2.5 NMAC—Source Surveillance	All	All	N/A—20.2.5 NMAC requires sources, upon notification by NMED, to maintain records and report on emissions of applicable sources. LANL has not received such notification; therefore, this regulation will not be specifically addressed under this application. In addition, the regulation does not specify requirements for an emissions unit at LANL.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.7 NMAC—Excess Emissions during Malfunction, Startup, Shutdown, or Scheduled Maintenance	All	All	Applicable—This regulation defines compliance with emission limits in emission regulations and construction permit conditions and notification procedures for conditions creating excess emissions. It applies where an emission limit for a source is established in an EIB emission regulation or construction permit condition.
20.2.8 NMAC—Emissions Leaving New Mexico	All Emissions Leaving New Mexico	All	N/A—The regulation does not contain requirements for individual emissions units at LANL. In addition, LANL emissions do not contribute to the exceedance of standards and regulations in adjacent states.
20.2.10 NMAC—Woodwaste Burners	Opacity	Woodwaste Burners	N/A—LANL does not operate a woodwaste burner.
20.2.11 NMAC—Asphalt Process Equipment	PM	Asphalt Plant	Applicable—The regulation applies to Emission Unit TA-60-BDM, Asphalt Production.
20.2.12 NMAC—Cement Kilns	PM	Cement Kilns	N/A—LANL does not operate a cement kiln.
20.2.13 NMAC—Gypsum Processing Plants	PM	Gypsum Plants	N/A—LANL does not operate a gypsum plant.
20.2.14 NMAC—Particulate Emissions from Coal Burning Equipment	PM	Coal Burning Equipment	N/A—LANL does not operate coal burning equipment.
20.2.15 NMAC—Pumice, Mica, Perlite Process Equipment	PM	Pumice, Mica, Perlite Equipment	N/A—LANL does not operate pumice, mica, or perlite processing equipment.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.16 and 17 NMAC[1]—Nonferrous Smelters: PM	PM	Nonferrous Smelters	N/A—LANL does not operate a nonferrous smelter.
20.2.18 NMAC—Oil Burning Equipment: PM	PM	Oil Burning Equipment ≥250 MMBTU/Unit	N/A—The maximum capacity of LANL's largest boilers at TA-3-22 is 210 MMBTU/hr.
20.2.19 NMAC—Potash, Salt, or Sodium Sulfate Processing Equipment	PM	Potash, Salt Process Equipment	N/A—LANL does not operate potash, salt or sodium sulfate processing equipment.
20.2.20 NMAC—Lime Manufacturing Plants—PM	PM	Lime Manufacturing	N/A—LANL does not operate a lime manufacturing plant.
20.2.21 NMAC—Fugitive PM Emissions from Nonferrous Smelters	PM	Nonferrous Smelters	N/A—LANL does not operate a nonferrous smelter.
20.2.22 NMAC—Fugitive PM Emissions from Roads within the Town of Hurley	PM	Roads—Town of Hurley	N/A—LANL is not within the Town of Hurley.
20.2.30 NMAC—Kraft Mills	Total Reduced Sulfur	Kraft Mills	N/A—LANL does not operate a kraft mill.
20.2.31 NMAC—Coal Burning Equipment: Sulfur Dioxide (SO_2)	SO_2	Coal Burning Equipment	N/A—LANL does not operate coal burning equipment.
20.2.32 NMAC—Coal Burning Equipment: Nitrogen Dioxide (NO_2)	NO_2	Coal Burning Equipment	N/A—LANL does not operate coal burning equipment.
20.2.33 NMAC—Gas Burning Equipment: NO_2	NO_2	Gas Burning Equipment—Heat Inputs >1,000,000 MMBTU/unit	Applicable—LANL's three TA-3 Power Plant boilers have a rated heat capacity greater than 1,000,000 MMBTU/year. These are Emission Units TA-3-22-1, 2, and 3.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.34 NMAC—Oil Burning Equipment: NO_2	NO_2	Oil Burning Equipment—Heat Input >1,000,000 MMBTU/year/unit	Applicable—LANL's three TA-3 Power Plant boilers have a rated heat capacity greater than 1,000,000 MMBTU/year. These are Emission Units TA-3-22-1, 2, and 3.
20.2.35 NMAC—Natural Gas Processing Plant: Sulfur	Sulfur	Natural Gas Processing Plants	N/A—LANL does not operate a natural gas processing plant.
20.2.36 NMAC[1]—Petroleum Refinery: Sulfur	Sulfur	Petroleum Processing Facilities	N/A—LANL does not operate a petroleum refinery.
20.2.37 NMAC[1]—Petroleum Processing Facilities	Ammonia, CO, Hydrocarbons, Hydrogen Sulfide (H_2S), Mercaptans, PM	Petroleum Processing Facilities	N/A—LANL does not operate a petroleum processing facility.
20.2.38 NMAC[1]—Hydrocarbon Storage Facilities	Hydrocarbons Containing H_2S	Tank Batteries and Hydrocarbon Storage Facilities Operated in Conjunction with Petroleum Production Facilities	N/A—LANL does not operate tank batteries or hydrocarbon storage facilities operated in conjunction with petroleum production facilities.
20.2.39 NMAC[1]—Sulfur Recovery Plant: Sulfur	Sulfur	Sulfur Recovery Plants	N/A—LANL does not operate a sulfur recovery plant.
20.2.40 NMAC—Sulfuric Acid Production Units: SO_2/Acid Mist/Visible Emissions	SO_2, Acid Mist, and Visible Emissions	Sulfuric Acid Production Units	N/A—LANL does not operate a sulfuric acid production unit.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.41 NMAC—Nonferrous Smelters: Sulfur	Sulfur	Nonferrous Smelters	N/A—LANL does not operate a nonferrous smelter.
20.2.42 NMAC[1]—Coal Mining and Preparation Plants: PM	PM	Coal Mining and Preparation Plants	N/A—LANL does not operate a coal mining and preparation plant.
20.2.43[1]—Gasification Plants	Various	Gasification Plants	N/A—LANL does not operate a gasification plant.
20.2.60 NMAC—Open Burning	None	Open Burning	Applicable—LANL operates a site that conducts open burning of hazardous waste in compliance with interim status regulations. Vegetative material may also be burned.
20.2.61 NMAC—Smoke and Visible Emissions	Smoke and Visible Emissions	Stationary Combustion Equipment; Diesel-Powered Vehicles; Diesel Powered Locomotives; Air Curtain Destructors	Applicable—LANL has stationary combustion sources subject to the rule opacity standard.
20.2.62 NMAC[1]—Municipal Waste Combustion	Listed in regulation	Municipal Waste Incinerators	N/A—LANL does not operate a municipal waste combustion unit.
20.2.63 NMAC[1]—Biomedical Waste Combustion	Listed in regulation	Biomedical Waste Incinerators	N/A—LANL does not operate a biomedical waste combustion unit.
20.2.64 NMAC—Municipal Solid Waste Landfills	Nonmethane organic compounds	Municipal Landfill	N/A—LANL does not operate a municipal landfill.
20.2.65 NMAC—Smoke Management	Criteria Pollutants	Prescribed Fires	Applicable (if triggered)—LANL may conduct prescribed fires exceeding applicability thresholds of the rule.
20.2.66 NMAC—Cotton Gins	Criteria Pollutants	Cotton Gin	N/A—LANL does not operate a cotton gin.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.70 NMAC—Operating Permits	Criteria Pollutants, Section 112(b)HAPs, Section 112(r) regulated substances, NSPS/NESHAP—Regulated Pollutants, Title VI Class I/II substances	All Emission Units at Major Stationary Sources	Applicable
20.2.71 NMAC—Operating Permit Emission Fees	All fee pollutants specified	All Emissions Units at Stationary Sources, except those considered "Insignificant Activities" or otherwise exempted.	Applicable—LANL has submitted operating permit fees for the past several years and will continue to pay fees based on the emission levels permitted.
20.2.72 NMAC—Construction Permits	All	New and Modified Sources with a potential emission rate greater than 10 lb/hr or 25 tpy of any air pollutant for which there is a NAAQS or NMAAQS, or 5 tpy of lead.	Applicable—Construction permit applications, permit revisions, and permit exemption notifications have been submitted when required. Conditions in permits issued under 20.2.72 NMAC are applicable requirements.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.73 NMAC—Notice of Intent and Emissions Inventory Requirements	All pollutants for which there is a NAAQS or NMAAQS Greenhouse gases	Notice of Intent for New and Modified Sources with a potential emission rate greater than 10 tpy of any pollutant for which there is a NAAQS or NMAAQS or 1 tpy of lead. Emission Inventory Requirements	Applicable—LANL must notify NMED of any new or modified source of regulated air contaminant with an emission rate greater than 10 tpy of any regulated air contaminant or 1 tpy of lead. LANL has been required to supply such notifications and will continue to do so as applicable. Applicable—LANL provides annual emissions information to NMED as required.
20.2.74 NMAC—Permits: Prevention of Significant Deterioration	All	Stationary Sources with a potential to emit greater than 250 tpy (or 100 tpy if a listed source)	N/A—LANL has facility-wide emission limits in Title V operating permit P100M2 that limit the potential to emit for PSD pollutants to below major source status for PSD purposes.
20.2.75 NMAC—Construction Permit Fees	All	All	Applicable—Identifies fees to be paid for applications to construct or modify. LANL pays these fees on construction permits when required.
20.2.77 NMAC **Incorporating Federal New Source Performance Standards (NSPS) 40 CFR Part 60 By Reference**			
Subpart A—General Provisions	All NSPS Pollutants	General New Source Performance Standard Requirements	Applicable—This regulation affects sources subject to NSPS, unless otherwise exempted by the specific NSPS rule applicable to a source.
Subpart B—Adoption and Submittal of State Plans for Designated Facilities	All NSPS Pollutants	All Facilities Affected by an NSPS	N/A—This regulation sets requirements for states, not individual facilities.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart Cb—Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors Constructed on or before September 20, 1994	Metals, Organics, Acid Gases, Sulfuric Acid Mist, NO_x	Municipal Waste Combustors	N/A—LANL does not operate a large municipal waste combustor.
Subpart Cc—Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills	Metals, Organics, Acid Gases, Sulfuric Acid Mist, NO_x	Municipal Solid Waste Landfills	N/A—LANL does not operate a municipal solid waste landfill.
Subpart Cd—Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units	SO_2 Sulfuric Acid Mist	Sulfuric Acid Production Units	NA—LANL does not operate a sulfuric acid production unit.
Subpart Ce—Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators	PM CO Dioxins/furans Hydrogen chloride SO_2 NO_x Lead Cadmium Mercury	Hospital/Medical/ Infectious Waste Incinerators	N/A—LANL does not operate a hospital/medical/infectious waste incinerator.
Subpart D—NSPS for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971	PM SO_2 NO_x	Fossil-Fuel-Fired Steam Generators >250 MMBTU/hr	N/A—LANL does not operate a steam generator greater than 250 MMBTU/hr.
Subpart Da—NSPS for Electric Utility Steam Generating Units for which Construction is Commenced after September 18, 1978	PM SO_2 NO_x	Electric Utility Steam Generating Unit >250 MMBTU/hr Constructed/Modified after September 18, 1978	N/A—The steam generating units at TA-3-22 were constructed before September 18, 1978, and are smaller than 250 MMBTU/hr.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart Db—NSPS for Industrial-Commercial-Institutional Steam Generating Units	PM SO_2	Steam Generating Units Constructed/Modified after June 9, 1989, with a Heat Input of >100 MMBTU/hr	N/A—The only boilers with capacities greater than 100 MMBTU/hr are located at the TA-3 Power Plant, but were constructed in 1950-1952.
Subpart Dc—NSPS for Small Industrial-Commercial-Institutional Steam Generating Units	PM SO_2	Steam Generating Units Constructed or Modified after June 9, 1989, with Heat Capacity <100 MMBTU/hr and >10 MMBTU/hr	Applicable—LANL has two boilers (Emission Units TA-55-6-BHW-1 and BHW-2) at TA-55 with a rated capacity between 10 MMBTU/HR and 100 MMBTU/HR that were constructed after 1989.
Subpart E—NSPS for Incinerators	PM	Incinerators >50 tons/day charging rate	N/A—LANL does not operate an incinerator.
Subpart Ea—NSPS for Municipal Waste Combustors	Metals Organics Acid Gases NO_x	Municipal Waste Combustors constructed or modified after December 20, 1989, and before September 20, 1994	N/A—LANL does not operate a municipal waste combustor.
Subpart Eb—NSPS for Large Municipal Waste Combustors for which construction commenced after September 20, 1994	Metals Organics Acid Gases NO_x PM	Municipal Waste Combustors constructed after September 20, 1994, or modified after June 19, 1996	N/A—LANL does not operate a municipal waste combustor.
Subpart Ec—NSPS for Hospital/Medical/Infectious Waste Incinerators for which construction is commenced after June 20, 1996	Metals Organics Acid Gases NOx	Hospital/Medical/Infectious Waste Incinerators constructed after June 20, 1996	N/A—LANL does not operate a hospital/medical/infectious waste incinerator.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart F—NSPS for Portland Cement Plants	PM	Portland Cement Plants	N/A—LANL does not operate a Portland cement plant.
Subpart G—NSPS for Nitric Acid Plants	NO_x	Nitric Acid Plants and Production Units	N/A—LANL does not operate a nitric acid plant or production unit.
Subpart H—NSPS for Sulfuric Acid Plants	SO_2 Sulfuric Acid Mist	Sulfuric Acid Plants and Production Units	N/A—LANL does not operate a sulfuric acid plant or production unit.
Subpart I—NSPS for Hot Mix Asphalt Facilities	PM	Hot Mix Asphalt Facilities constructed or modified after June 11, 1973	Applicable—Subpart I applies to the Emission Unit TA-60-BDM, Asphalt Production.
Subpart J—NSPS for Petroleum Refineries	PM CO	Petroleum Refineries	N/A—LANL does not operate a petroleum refinery.
Subpart K—NSPS for Storage Vessels for Petroleum Liquids	VOCs	Storage vessels (>40,000 gal.) for petroleum liquids for which construction or modification commenced after June 11, 1973, and prior to May 19, 1978	N/A—LANL tanks of this size are exempt because they were either built before the effective date of this regulation or store exempt materials.
Subpart Ka—NSPS for Storage Vessels for Petroleum Liquids	VOCs	Storage vessels (>40,000 gal.) for petroleum liquids for which construction or modification commenced after May 18, 1978, and prior to July 23, 1984	N/A—LANL tanks of this size are exempt because they were either built before the effective date of this regulation or store exempt materials.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart Kb—NSPS for Volatile Organic Liquid Storage Vessels	VOCs	Storage vessels (>75 cubic meters) for volatile organic liquids for which construction or modification commenced after July 23, 1984	N/A—LANL tanks of this size are exempt because they were either built before the effective date of this regulation or store exempt materials.
Subpart L—NSPS for Secondary Lead Smelters	PM	Secondary lead smelters >250 kg (550 lb) charging capacity	N/A—LANL does not operate a secondary lead smelter.
Subpart M—NSPS for Secondary Brass and Bronze Production Plants	PM	Secondary brass and bronze Plants >1000 kg (2205 lb) production capacity	N/A—LANL does not operate a secondary brass or bronze production plant.
Subpart N—NSPS for Primary Emissions from Basic Oxygen Process Furnaces	PM	Basic Oxygen Process Furnace Constructed after June 11, 1973	N/A—LANL does not operate a basic oxygen process furnace.
Subpart Na—NSPS for Secondary Emissions from Basic Oxygen Steelmaking Facilities	PM	Steelmaking Facilities with Basic Oxygen Process Furnace Constructed after January 20, 1983	N/A—LANL does not operate a steelmaking facility.
Subpart O—NSPS for Sewage Treatment Plants	PM	Incinerators Used to Treat Municipal Sewage	N/A—LANL does not operate an incinerator used to treat municipal sewage.
Subpart P—NSPS for Primary Copper Smelters	PM SO_2	Primary Copper Smelters	N/A—LANL does not operate a primary copper smelter.
Subpart Q—NSPS for Primary Zinc Smelters	PM SO_2	Primary Zinc Smelters	N/A—LANL does not operate a primary zinc smelter.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart R—NSPS for Primary Lead Smelters	PM SO_2	Primary Lead Smelters	N/A—LANL does not operate a primary lead smelter.
Subpart S—NSPS for Primary Aluminum Reduction Plants	Fluorides	Aluminum Reduction Plants	N/A—LANL does not operate an aluminum reduction plant.
Subpart T—NSPS for the Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	Fluorides	Phosphate Fertilizer Industry—Wet Process Phosphoric Acid Plants	N/A—LANL does not operate a wet process phosphoric acid plant.
Subpart U—NSPS for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants	Fluorides	Phosphate Fertilizer Industry—Superphosphoric Acid Plants	N/A—LANL does not operate a superphosphoric acid plant.
Subpart V—NSPS for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants	Fluorides	Phosphate Fertilizer Industry—Diammonium Phosphate Plants	N/A—LANL does not operate a diammonium phosphate plant.
Subpart W—NSPS for the Phosphate Fertilizer Industry: Triple Superphosphate Plants	Fluorides	Phosphate Fertilizer Industry—Triple Superphosphoric Acid Plants	N/A—LANL does not operate a triple superphosphoric acid plant.
Subpart X—NSPS for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	Fluorides	Phosphate Fertilizer Industry—Triple Superphosphoric Storage Facilities	N/A—LANL does not operate a triple superphosphoric storage facility.
Subpart Y—NSPS for Coal Preparation Plants	PM	Coal Preparation Plants	N/A—LANL does not operate a coal preparation plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart Z—NSPS for Ferroalloy Production Facilities	PM	Ferroalloy Production Facilities	N/A—LANL does not operate a ferroalloy production facility.
Subpart AA—NSPS for Electric Arc Furnaces	PM	Steel Plants—Electric Arc Furnaces	N/A—LANL does not operate a steel plant.
Subpart AAa—NSPS for Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels	PM	Steel Plants—Electric Arc Furnaces and Argon-oxygen Decarburization Vessels	N/A—LANL does not operate a steel plant.
Subpart BB—NSPS for Kraft Pulp Mills	PM Sulfur	Kraft Pulp Mills	N/A—LANL does not operate a kraft pulp mill.
Subpart CC—NSPS for Glass Manufacturing Plants	PM	Glass Manufacturing Plants > 4550 kg/day Production	N/A—LANL does not operate a glass manufacturing plant.
Subpart DD—NSPS for Grain Elevators	PM	Grain Elevators	N/A—LANL does not operate a grain elevator.
Subpart EE—NSPS for Surface Coating of Metal Furniture	VOCs	Organic Surface Coating of Metal Furniture Constructed/Modified after November 28, 1980	N/A—LANL does not operate a metal furniture surface coating line.
Subpart GG—NSPS for Stationary Gas Turbines	NO_x SO_2	Stationary Gas Turbines with Heat Input >10 gigajoules/hour	Applicable—This NSPS applies to Emission Unit TA-3-22-CT-1, the Rolls-Royce combustion turbine at the TA-3 Power Plant.
Subpart HH—NSPS for Lime Manufacturing Plants	PM	Lime Manufacturing Plants	N/A—LANL does not operate a lime manufacturing plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart KK—NSPS for Lead-Acid Battery Manufacturing Plants	Lead	Lead-Acid Battery Manufacturing Plants	N/A—LANL does not operate a lead-acid battery manufacturing plant.
Subpart LL—NSPS for Metallic Mineral Processing Plants	PM	Metallic Mineral Processing Plants	N/A—LANL does not operate any metallic mineral processing plants.
Subpart MM—NSPS for Automobile and Light-Duty Truck Surface Coating Operations	VOCs	Auto and Light Truck Assembly Plants	N/A—LANL does not operate any auto or light truck assembly plants.
Subpart NN—NSPS for Phosphate Rock Plants	PM	Phosphate Rock Plants	N/A—LANL does not operate any phosphate rock plants.
Subpart PP—NSPS for Ammonium Sulfate Manufacture	PM	Ammonium Sulfate Manufacturing	N/A—LANL does not have any ammonium sulfate manufacturing operations.
Subpart QQ—NSPS for Graphics Art Industry: Publication Rotogravure Printing	VOCs	Graphics Arts Industry—Publication Rotogravure Printing	N/A—LANL does not have any publication rotogravure printing operations.
Subpart RR—NSPS for Pressure Sensitive Tape and Label Surface Coating Operations	VOCs	Pressure Sensitive Tape and Label Manufacturing	N/A—LANL does not have any pressure sensitive tape or label manufacturing operations.
Subpart SS—NSPS for Industrial Surface Coating—Large Appliances	VOCs	Large Appliance Surface Coating Lines	N/A—LANL does not have any large appliance surface coating operations.
Subpart TT—NSPS for Metal Coil Surface Coating	VOCs	Metal Coil Surface Coating	N/A—LANL does not have any metal coil surface coating operations.
Subpart UU—NSPS for Asphalt Processing and Asphalt Roofing Manufacture	PM	Asphalt Processing and Asphalt Roofing Manufacturing and Petroleum Refineries	N/A—LANL does not have any asphalt processing or asphalt roofing manufacturing operations. Note that here asphalt processing plant means a plant that blows asphalt for use in the manufacture of asphalt products.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart VV—NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006.	VOCs	SOCMI Facilities	N/A—LANL does not have any synthetic organic chemical manufacturing operations.
Subpart WW—NSPS for the Beverage Can Surface Coating Industry	VOCs	Beverage Can Surface Coating Lines	N/A—LANL does not have any beverage can surface coating operations.
Subpart XX—NSPS for Bulk Gasoline Terminals	VOCs	Loading Racks at Bulk Gasoline Terminals Constructed or Modified after December 17, 1980	N/A—LANL does not operate any bulk gasoline terminals.
Subpart BBB—NSPS for the Rubber Tire Manufacturing Industry	VOCs	Rubber Tire Manufacturers	N/A—LANL does not have a rubber tire manufacturing operation.
Subpart DDD—NSPS for VOC Emissions from the Polymer Manufacturing Industry	VOCs	Manufacturers of Polymers	N/A—LANL does not have a polymer manufacturing operation.
Subpart FFF—NSPS for Flexible Vinyl and Urethane Coating and Printing	VOCs	Rotogravure Printing Lines	N/A—LANL does not have a flexible vinyl or urethane coating or printing operation.
Subpart GGG—NSPS for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006	VOCs	Equipment Leaks in Petroleum Refineries	N/A—LANL does not operate a petroleum refinery.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart HHH—NSPS for Synthetic Fiber Production Facilities	VOCs	Solvent-spun Synthetic Fiber Process >500 mg Fiber Capacity per year	N/A—LANL does not operate a synthetic fiber production facility.
Subpart III—NSPS for VOC Emissions from the SOCMI Air Oxidation Unit Processes	VOCs	SOCMI Air Oxidation Units	N/A—LANL does not operate a SOCMI air oxidation unit.
Subpart JJJ—NSPS for Petroleum Dry Cleaners	VOCs	Petroleum Dry Cleaners	N/A—LANL does not operate a petroleum dry cleaning operation.
Subpart KKK—NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	VOCs	Equipment Leaks from Onshore Natural Gas Processing Plants	N/A—LANL does not operate an onshore natural gas processing facility.
Subpart LLL—NSPS for Onshore Natural Gas Processing: SO_2 Emissions	SO_2	Onshore Natural Gas Processing	N/A—LANL does not operate an onshore natural gas processing facility.
Subpart NNN—NSPS for VOC Emissions from SOCMI Distillation Operations	VOCs	SOCMI Distillation Operations	N/A—LANL does not operate a SOCMI distillation operation.
Subpart OOO—NSPS for Nonmetallic Mineral Processing Plants	PM	Nonmetallic Mineral Processing Plants	N/A—LANL does not operate a nonmetallic mineral processing plant.
Subpart PPP—NSPS for Wool Fiberglass Insulation Manufacturing Plants	PM	Rotary Spin Wool Fiberglass Insulation Manufacturing Lines	N/A—LANL does not operate a wool fiberglass insulation manufacturing plant.
Subpart QQQ—NSPS for VOC Emissions from Petroleum Refinery Wastewater Systems	VOCs	Petroleum Refinery Wastewater Systems	N/A—LANL does not operate a petroleum refinery.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart RRR—NSPS for VOC Emissions from SOCMI Reactor Processes	VOCs	Reactor and Recovery Processes in the SOCMI Industry	N/A—LANL does not operate a SOCMI manufacturing operation.
Subpart SSS—NSPS for Magnetic Tape Coating Facilities	VOCs	Magnetic Tape Manufacturing Facilities	N/A—LANL does not operate a magnetic tape manufacturing facility.
Subpart TTT—NSPS for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	VOCs	Spray Booths used in Business Machines Manufacturing	N/A—LANL does not operate a spray booth used in business machines manufacturing.
Subpart UUU—NSPS for Calciners and Dryers in Mineral Industries	PM	Calciners and Dryers at Mineral Processing Plants	N/A—LANL does not operate a mineral processing plant.
Subpart VVV—NSPS for Polymeric Coating of Supporting Substrates Facilities	VOCs	Elastomer/Polymer/Pre-polymer Web Coating Processes	N/A—LANL does not operate a polymer coating of supporting substrates facility.
Subpart WWW—NSPS for Municipal Solid Waste Landfills	Non-Methane Organic Compounds	Municipal Solid Waste Landfills	N/A—LANL does not operate a municipal waste landfill.
Subpart AAAA—NSPS for Small Municipal Waste Combustion Units	Dioxins/furans Cadmium Lead Mercury PM Hydrogen chloride NO_x SO_2 CO Fugitive ash	Small Municipal Waste Combustion Units (>35 tons/day and <250 tons/day)	N/A—LANL does not operate a small municipal waste combustion unit.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart BBBB—Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units	Dioxins/furans Cadmium Lead Mercury PM Hydrogen chloride NO_x SO_2 CO Fugitive ash	Applies to State Air Quality Program Offices	N/A—The regulation only applies to state air quality program offices.
Subpart CCCC—NSPS for Commercial and Industrial Solid Waste Incineration Units	Opacity	Commercial and Industrial Solid Waste Incinerators	N/A—LANL does not operate a commercial or industrial solid waste incinerator.
Subpart DDDD—Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units	Cadmium CO Dioxins/furans Hydrogen chloride Lead Mercury Opacity Nitrogen oxides Particulate matter Sulfur dioxide	Applies to State Air Quality Program Offices	N/A—The regulation only applies to state air quality program offices.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart EEEE—Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	Cadmium CO Dioxins/furans Hydrogen chloride Lead Mercury Opacity NO_x PM SO_2	Municipal and Institutional Waste Incinerators	N/A—LANL does not operate a municipal or institutional waste incinerator.
Subpart FFFF—Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units That Commenced Construction on or Before December 9, 2004	Cadmium CO Dioxins/furans Hydrogen chloride Lead Mercury Opacity NO_2 PM SO_2	Applies to State Air Quality Program Offices	N/A—The regulation only applies to state air quality program offices.
Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	NO_x CO NMHC PM	Diesel-fired engines (stationary)	N/A—The rule applies to stationary diesel engines manufactured after April 1, 2006. At the time of this application, LANL had purchased three standby generators for the CMRR Facility with engines subject to the rule. At the time of this application, the CMRR Facility had not been constructed and is not yet in operation, therefore it is not part of this application.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart KKKK—Standards of Performance for Stationary Combustion Turbines	NO_x SO_2	Combustion turbines with a heat input >10 MMBtu/hr which commenced construction after February 18, 2005.	N/A—LANL does not have a combustion turbine for which construction commenced after February 18, 2005.
20.2.78 NMAC **Incorporating By Reference 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAP)**			
Subpart A—NESHAP—General Provisions	All NESHAP-regulated pollutants	Various	Applicable—LANL's beryllium machining operations are subject to 40 CFR 61, Subpart C. The provisions of Subpart A are also incorporated into the construction permits for those operations. Because the requirements of Subpart A are incorporated into these other subparts, it will not be separately addressed in this application.
Subpart C—NESHAP for Beryllium	Beryllium	Extraction Plants Ceramic Plants Foundries Incinerators Propellant Plants Machine Shops	Applicable—LANL's beryllium machining and foundry operations are subject to Subpart C. These include Emission Units: TA-3-141, TA-35-213, TA-55-PF4, TA-3-66, TA-16-207, and TA-35-87.
Subpart D—NESHAP for Beryllium Rocket Motor Firing	Beryllium	Rocket Motor Firing	N/A—LANL does not operate a rocket motor firing operation.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart E—NESHAP for Mercury	Mercury	Mercury ore processors and mercury chlor-alkali cells which produce chlorine gas and incinerate or dry wastewater plant sludge	N/A—LANL does not have a mercury ore processing operation or a mercury chlor-alkali cell.
Subpart F—NESHAP for Vinyl Chloride	Vinyl Chloride	Vinyl chloride and ethylene dichloride manufacturing facilities	N/A—LANL does not have any vinyl chloride or ethylene dichloride manufacturing operations.
Subpart J—NESHAP for Equipment Leaks of Benzene	Benzene	Equipment leaks from equipment used to process benzene from plants that produce or use >1000 megagrams of benzene per year	N/A—LANL does not operate any sources in benzene process service.
Subpart L—NESHAP for Benzene Emissions from Coke By-Product Recovery Plants	Benzene	Coke by-product recovery plants	N/A—LANL does not operate a coke by-product recovery facility.
Subpart M—NESHAP for Asbestos	Asbestos	Asbestos mills, asbestos manufacturing, demolition and renovation, spraying, fabrication	Applicable—LANL participates in demolition and renovation activities involving asbestos.
Subpart N—NESHAP for Inorganic Arsenic Emissions from Glass Manufacturing Plants	Inorganic Arsenic	Glass Manufacturing Plants	N/A—LANL does not operate a glass manufacturing plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart O—NESHAP for Inorganic Arsenic Emissions from Primary Copper Smelters	Inorganic Arsenic	Primary Copper Smelters	N/A—LANL does not operate a primary copper smelter.
Subpart P—NESHAP for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities	Inorganic Arsenic	Arsenic Production Facilities	N/A—LANL does not operate an arsenic production facility.
Subpart V—NESHAP for Equipment Leaks	Benzene Vinyl Chloride	Equipment in Volatile HAP Service	N/A—LANL does not operate any sources in volatile HAP service.
Subpart Y—NESHAP for Benzene Emissions from Benzene Storage Vessels	Benzene	Benzene Storage Vessels >10,000 gallons	N/A—LANL does not operate a benzene storage vessel.
Subpart BB—NESHAP from Benzene Emissions from Benzene Transfer Operations)	Benzene	Benzene Loading Racks at Benzene Production Facilities and Bulk Terminals	N/A—LANL does not have a benzene transfer operation.
Subpart FF—NESHAP for Benzene Waste Operations	Benzene	Chemical Manufacturing Coke Byproduct Recovery Plants Petroleum Refineries	N/A—LANL does not have a benzene waste operation.
20.2.79 NMAC Permits—Nonattainment Areas	All	Sources in Nonattainment Areas	N/A—The regulation does not specify requirements for individual emissions units at LANL. LANL is located in an attainment area for all criteria pollutants.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.80 NMAC Stack Heights	All	Sources Applying for Construction Permits under Parts 72, 74 or 79	N/A—The regulation does not specify requirements for individual emissions units at LANL.
20.2.82 NMAC **Incorporating By Reference 40 CFR Part 63, Maximum Achievable Control Technology (MACT) Standards**			
Subpart A—General Provisions	112(b) HAPs	All Categories with Standards Regulated under 40 CFR 63	Applicable—However, this subpart applies only if specific source categories have had standards promulgated. Therefore, the Subpart A requirements are addressed under other subparts setting standards applicable to Laboratory sources. Subpart A is not separately covered in this application.
Subpart B—Requirements for Control Technology Determinations	112(b) HAPs	Major Sources of HAPs	N/A—LANL is not a major source of HAPs.
Subpart D—Regulations Governing Compliance Extensions for Early Reduction of HAPs	112(b) HAPs	A voluntary program for all sources subject to MACT wishing to obtain a compliance extension	N/A—LANL is not a major source of HAPs.
Subpart E—Approval of State Program and Delegation of Federal Authorities	112(b) HAPs	All sources affected under Section 112	N/A—This section establishes procedures for approval of state rules and programs to implement Section 112 requirements.
Subpart F—National Emission Standards of Organic Hazardous Air Pollutants from the SOCMI	Organic HAPs	Chemical Manufacturing Process Units	N/A—LANL does not have any synthetic organic chemical manufacturing operations.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart G—National Emission Standards for Organic Hazardous Air Pollutants from SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater	Organic HAPs	Process Vents, Storage Vessels, Transfer Racks, and Wastewater Steams within a source subject to 40 CFR 63 Subpart F	N/A—LANL does not have any synthetic organic chemical manufacturing operations.
Subpart H—NESHAP for Organic Hazardous Air Pollutants for Equipment Leaks	Organic HAPs	Pumps, Compressors, Agitators, etc., in Organic HAP Service >300 hours/year	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR Part 63, and which references this subpart.
Subpart I—NESHAP for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks	112(b) HAPs	Equipment Leaks at Specified SOCMI Sources	N/A—LANL does not have any synthetic organic chemical manufacturing operations.
Subpart J—NESHAP for Polyvinyl Chloride and Copolymers Production	112(b) HAPs	Polyvinyl Chloride and Copolymers Production	N/A—LANL does not operate a polyvinyl chloride production plant.
Subpart L—NESHAP for Coke Oven Batteries	112(b) HAPs	Coke Ovens	N/A—LANL does not operate a coke oven battery.
Subpart M—NESHAP for Perchloroethylene for Dry Cleaning Facilities	Perchloroethylene	Dry Cleaners	N/A—LANL does not operate a dry cleaning facility.
Subpart N—Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	Chromium	Chromium Electroplating and Anodizing Tanks	N/A—LANL chromium electroplating operations are used for research and development purposes only. These activities are specifically exempt under 40 CFR 63.340(d).
Subpart O—Ethylene Oxide Emissions Standards for Sterilization Facilities	Ethylene Oxide	Sterilization Facilities	N/A—LANL does not operate an ethylene oxide sterilization facility.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart Q—NESHAP for Industrial Process Cooling Towers	Chromium	Cooling Towers	N/A—LANL does not use chromium-based chemicals to treat its cooling tower water.
Subpart R—NESHAP for Gasoline Distribution Facilities	112(b) HAPs	Bulk Gasoline Terminals Pipeline Breakout Stations	N/A—LANL does not operate a bulk gasoline terminal or pipeline breakout station.
Subpart S—NESHAP for Pulp and Paper Industry	112(b) HAPs	Pulp and Paper Industry	N/A—LANL does not operate any process that produces pulp paper or paperboard.
Subpart T—MACT for Halogenated Solvent Cleaning	6 listed halogenated solvents	Solvent cleaning machines with a capacity of two gallons or greater	Applicable—LANL operates a solvent cleaning machine with regulated solvents at Emission Unit TA-55-DG-1.
Subpart U—NESHAPs Emissions: Group 1 Polymers and Resins	112(b) HAPs	Elastomer Product Process Units	N/A—LANL does not operate an elastomer product process unit.
Subpart W—NESHAP for Epoxy Resins Production and Non-nylon Polyamides Production	112(b) HAPs	Resin Manufacturers	N/A—LANL does not operate a basic liquid epoxy or wet strength resin manufacturing facility.
Subpart X—NESHAP for Secondary Lead Smelting	Lead Compounds	Secondary Lead Smelting	N/A—LANL does not operate a secondary lead smelter.
Subpart Y—National Emission Standards for Marine Tank Vessel Loading Operations	112(b) HAPs	Marine Tank Vessel Loading Operations	N/A—LANL does not operate a marine tank vessel loading operation.
Subpart AA—NESHAP for Phosphoric Acid Manufacturing Plants	112(b) HAPs	Phosphoric Acid Manufacturing Plants	N/A—LANL does not operate a phosphoric acid manufacturing operation.
Subpart BB—NESHAP for Phosphate Fertilizer Production Plants	112(b) HAPs	Fertilizer Production Plants	N/A—LANL does not operate a fertilizer production plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart CC—NESHAP from Petroleum Refineries	112(b) HAPs	Petroleum Refineries	N/A—LANL does not operate a petroleum refinery.
Subpart DD—NESHAP from Off-Site Waste and Recovery Operations	112(b) HAPs	Off-Site Waste and Recovery Operations	N/A—LANL does not have an off-site waste and recovery operation.
Subpart EE—National Emission Standards for Magnetic Tape Manufacturing Operations	112(b) HAPs	Magnetic Tape Manufacturing Operations	N/A—LANL does not have a magnetic tape manufacturing operation.
Subpart GG—National Emission Standards for Aerospace Manufacturing and Rework Facilities	112(b) HAPs	Manufacture or rework of aerospace vehicles or components	N/A—Research and development activities are exempt from the requirements of this regulation, per 40 CFR 63.741(f).
Subpart HH—NESHAP for Oil and Natural Gas Production Facilities	112(b) HAPs	Fuel Production Facilities	N/A—LANL does not operate a gas production facility.
Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)	112(b) HAPs	Shipbuilding and Ship Repair	N/A—LANL does not operate a shipbuilding and repair facility.
Subpart JJ—National Emission Standards for Wood Furniture Manufacturing Operations	112(b) HAPs	Wood Furniture Manufacturing	N/A—LANL does not have a wood furniture manufacturing operation.
Subpart KK—National Emission Standards for the Printing and Publishing Industry	112(b) HAPs	Printing and Publishing Industry	N/A—LANL does not have a printing and publishing operation.
Subpart LL—NESHAP for Primary Aluminum Reduction Plants	Aluminum Polycyclic Organic Matter Fluorides	Primary Aluminum Reduction Plants	N/A—LANL does not operate a primary aluminum reduction plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart MM—NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-alone Semichemical Pulp Mills	112(b) HAPs	Pulp Mills	N/A—LANL does not operate a pulp mill.
Subpart OO—National Emission Standards for Tanks - Level 1	112(b) HAPs	Tanks	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.
Subpart PP—National Emission Standards for Containers	112(b) HAPs	Containers	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.
Subpart QQ—National Emission Standards for Surface Impoundments	112(b) HAPs	Surface Impoundments	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.
Subpart RR—National Emission Standards for Individual Drain Systems	112(b) HAPs	Drain Systems	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.
Subpart SS—National Emission Standards for Closed Vent Systems, Control Devices, and Recovery Devices and Routing to a Fuel Gas System or a Process	VOCs 112(b) HAPs	Fuel Gas Systems	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart TT—National Emission Standards for Equipment Leaks—Control Level 1	VOCs 112(b) HAPs	Equipment Leaks	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61, or 63, and that references this subpart.
Subpart UU—National Emission Standards for Equipment Leaks—Control Level 2 Standards	VOCs 112(b) HAPs	Equipment Leaks	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61, or 63, and that references this subpart.
Subpart VV—National Emission Standards for Oil- Water Separators and Organic-Water Separators	112(b) HAPs	Oil- Water Separators and Organic-Water Separators	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61 or 63, and that references this subpart.
Subpart WW—National Emission Standards for Storage Vessels (Tanks)—Control Level 2	112(b) HAPs	Storage Vessels	N/A—The regulation only applies to a facility that is subject to another subpart of 40 CFR 60, 61, or 63, and that references this subpart.
Subpart XX—NESHAP for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations	112(b) HAPs	Ethylene Production	N/A—LANL does not operate an ethylene production unit.
Subpart YY—NESHAP for Source Categories: Generic Maximum Achievable Control Technology Standards	112(b) HAPs	Acetal Resins Production, Acrylic and Modacrylic Fibers Production, Hydrogen Fluoride Production, and Polycarbonate Production	N/A—LANL does not have any of the listed source operations.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart CCC—NESHAP for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants	112(b) HAPs	Steel Pickling Facilities and Hydrochloric Acid Regeneration Plants	N/A—LANL does not operate a steel pickling facility or a hydrochloric acid regeneration plant.
Subpart DDD—NESHAP for Mineral Wool Production	112(b) HAPs	Mineral Wool Production	N/A—LANL does not operate a mineral wool production facility
Subpart EEE—NESHAP from Hazardous Waste Combustors	Dioxins/furans 112(b) HAPs Carbon Monoxide Hydrocarbons PM	Hazardous Waste Combustors	N/A—LANL does not operate a hazardous waste combustor.
Subpart GGG—National Emissions Standards for Pharmaceuticals Production	112(b) HAPs	Pharmaceuticals Production	N/A—LANL does not operate a pharmaceutical production facility.
Subpart HHH—NESHAP for Natural Gas Transmission and Storage Facilities	112(b) HAPs	Natural Gas Transmission Facilities	N/A—LANL does not operate a natural gas transmission facility.
Subpart III—NESHAP for Flexible Polyurethane Foam Production	112(b) HAPs	Flexible Polyurethane Foam Production	N/A—LANL does not operate a flexible polyurethane foam production facility.
Subpart JJJ—NESHAP for Group IV Polymers and Resins	112(b) HAPs	Thermoplastic Product Process Units	N/A—LANL does not operate a thermoplastic product process unit.
Subpart LLL—NESHAP for Portland Cement Manufacturing Industry	PM Opacity Dioxins/furans Total hydrocarbons	Portland Cement Plants	N/A—LANL does not operate a Portland cement plant.
Subpart MMM—NESHAP for Pesticide Active Ingredient Production	112(b) HAPs VOCs	Pesticide Manufacturing	N/A—LANL does not operate a pesticide manufacturing operation.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart NNN—NESHAP for Wool Fiberglass Manufacturing	112(b) HAPs	Wool Fiberglass Manufacturing	N/A—LANL does not operate a wool fiberglass manufacturing facility.
Subpart OOO—NESHAP for Manufacture of Amino/Phenolic Resins	112(b) HAPs	Amino/Phenolic Resin Productions	N/A—LANL does not operate a amino/phenolic resin production facility.
Subpart PPP—NESHAP for Polyether Polyols Production	112(b) HAPs	Polyether Polyols Production	N/A—LANL does not operate a polyether polyols production facility.
Subpart QQQ—NESHAP for Primary Copper Smelters	112(b) HAPs	Primary Copper Smelting	N/A—LANL does not operate a primary copper smelter.
Sbpart RRR—NESHAP for Secondary Aluminum Production	112(b) HAPs	Secondary Aluminum Production	N/A—LANL does not operate a secondary aluminum production facility.
Subpart TTT—NESHAP for Primary Lead Smelting	Lead	Primary Lead Smelting	N/A—LANL does not operate a primary lead smelter.
Subpart UUU—NESHAP for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units	112(b) HAPs	Petroleum Refineries	N/A—LANL does not operate a petroleum refinery.
Subpart VVV—NESHAP for Publicly Owned Treatment Works	112(b) HAPs	Publicly Owned Treatment Works	N/A—LANL does not operate a POTW.
Subpart XXX—NESHAP for Ferroalloys Production: Ferromanganese and Silicomanganese	112(b) HAPs Opacity	Ferroalloys Production	N/A—LANL does not have a ferroalloys production operation.
Subpart AAAA—NESHAP for Municipal Solid Waste Landfills	112(b) HAPs	Municipal Solid Waste Landfills	N/A—LANL does not have a municipal solid waste landfill.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart CCCC—NESHAP for Manufacture of Nutritional Yeast	112(b) HAPs VOCs	Nutritional Yeast Manufacturing	N/A—LANL does not have a nutritional yeast manufacturing operation.
Subpart DDDD—NESHAP for Plywood and Composite Wood Products	112(b) HAPs	Plywood and Composite Wood Products Manufacturing	N/A—LANL does not operate a plywood manufacturing facility.
Subpart EEEE—NESHAP for Organic Liquids Distribution (Non-Gasoline)	112(b) HAPs	Distribution of Organic Liquids (Non-Gasoline)	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart FFFF—NESHAP for Miscellaneous Organic Chemical Manufacturing	112(b) HAPs	Miscellaneous Organic Chemical Manufacturing	N/A—LANL does not operate miscellaneous chemical manufacturing process units.
Subpart GGGG—NESHAP for Solvent Extraction for Vegetable Oil Production	112(b) HAPs	Vegetable Oil Production	N/A—LANL does not have a vegetable oil production operation.
Subpart HHHH—NESHAP for Wet-Formed Fiberglass Mat Production	112(b) HAPs	Wet-Formed Fiberglass Production	N/A—LANL does not have a wet-formed fiberglass production operation.
Subpart IIII—NESHAP for Surface Coating of Automobiles and Light-Duty Trucks	112(b) HAPs	Surface Coating of Automobiles and Light-Duty Trucks	N/A—LANL does not have a surface coating of automobiles and light-duty trucks operation.
Subpart JJJJ—NESHAP for Paper and Other Web Coating	112(b) HAPs	Paper and Other Web Coating Operations	N/A—LANL does have a paper and other web coating operation.
Subpart KKKK—NESHAP for Surface Coating of Metal Cans	112(b) HAPs	Surface Coating of Metal Cans Operation	N/A—LANL does not have a surface coating of metal cans operation.
Subpart MMMM—NESHAP for Surface Coating of Miscellaneous Metal Parts and Products	112(b) HAPs	Surface Coating of Metal Parts	N/A—The rule is applicable only to a major source of HAP emissions.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart NNNN—NESHAP for Surface Coating of Large Appliances	112(b) HAPs	Surface Coating of Large Appliances	N/A—LANL does not conduct surface coating of large appliances.
Subpart OOOO—NESHAP for Printing, Coating, and Dyeing of Fabrics and Other Textiles	112(b) HAPs	Printing, Coating and Dyeing of Fabrics and Other Textiles	N/A—LANL does not conduct printing, coating or dyeing of fabrics or other textiles.
Subpart PPPP—NESHAP for Surface Coating of Plastic Parts and Products	112(b) HAPs	Suface Coating of Plastic Parts and Products	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart QQQQ—NESHAP for Surface Coating of Wood Building Products	112(b) HAPs	Surface Coating of Wood Building Products	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart RRRR—NESHAP for Surface Coating of Metal Furniture	112(b) HAPs	Surface Coating of Metal Furniture	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart SSSS—NESHAP for Surface Coating of Metal Coil	112(b) HAPs	Metal Coil Surface Coating Operations	N/A—LANL does not have a metal coil surface coating operation.
Subpart TTTT—NESHAP for Leather Finishing Operations	112(b) HAPs	Leather Finishing Operations	N/A—LANL does not have a leather finishing operation.
Subpart UUUU—NESHAP for Cellulose Products Manufacturing	112(b) HAPs	Cellulose Products Manufacturing	N/A—LANL does not have a cellulose products manufacturing operation.
Subpart VVVV—NESHAP for Boat Manufacturing	112(b) HAPs	Fiberglass and Aluminum Boat Manufacturing	N/A—LANL does not have a fiberglass or aluminum boat manufacturing operation.
Subpart WWWW—NESHAP for Reinforced Plastic Composites Production	112(b) HAPs	Reinforced Plastic Composites Production	N/A—LANL does not have a reinforced plastic composites production facility.
Subpart XXXX—NESHAP for Rubber Tire Manufacturing	112(b) HAPs	Rubber Tire Manufacturing	N/A—LANL does not have a rubber tire manufacturing facility.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart YYYY—NESHAP for Stationary Combustion Turbines	112(b) HAPs	Stationary Combustion Turbines	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart ZZZZ—NESHAP for Stationary Reciprocating Internal Combustion Engines	112(b) HAPs	Stationary Internal Combustion Engines	N/A—The rule requirements for internal combustion engines at a major source of HAP emissions do not apply to LANL. Revisions to the rule on January 18, 2008 established requirements for new engines manufactured after July 1, 2007, at HAP area sources such as LANL. At the time of this application, LANL had not purchased any internal combustion engines subject to the rule.
Subpart AAAAA—NESHAP for Lime Manufacturing Plants	112(b) HAPs	Lime Manufacturing Plants	N/A—LANL does not operate a lime manufacturing plant.
Subpart BBBBB—NESHAP for Semiconductor Manufacturing	112(b) HAPs	Semiconductor Manufacturing	N/A—LANL does not operate a semiconductor manufacturing facility.
Subpart CCCCC—NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks	112(b) HAPs	Coke Oven Batteries	N/A—LANL does not operate a coke oven battery.
Subpart DDDDD—NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters	112(b) HAPs	Industrial, Commercial, and Institutional Boilers and Process Heaters	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart EEEEE—NESHAP for Iron and Steel Foundries	112(b) HAPs	Iron and Steel Foundries	N/A—LANL does not operate an iron and steel foundry.
Subpart FFFFF—NESHAP for Integrated Iron and Steel Manufacturing Facilities	112(b) HAPs	Integrated Iron and Steel Manufacturing Facilities	N/A—LANL does not operate an integrated iron and steel manufacturing facility.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart GGGGG—NESHAP for Site Remediation	112(b) HAPs	Site Remediation Activities	N/A—The rule is applicable only to a major source of HAP emissions and excludes RCRA Corrective Action remediation activities.
Subpart HHHHH—NESHAP for Miscellaneous Coating Manufacturing	112(b) HAPs	Miscellaneous Coating Manufacturing	N/A—The rule is applicable only to a major source of HAP emissions.
Subpart IIIII—NESHAP for Mercury Emissions from Mercury Cell Chlor-Alkali Plants	Mecury	Mercury Cell Chlor-Alkali Plants	N/A—LANL does not operate a mercury cell chlor-alkali plant
Subpart JJJJJ—NESHAP for Brick and Structural Clay Products Manufacturing	112(b) HAPs	Brick and Structural Clay Products Manufacturing	N/A—LANL does not operate a brick and structural clay products manufacturing plant.
Subpart KKKKK—NESHAP for Clay Ceramics Manufacturing	112(b) HAPs	Clay Ceramics Manufacturing	N/A—LANL does not operate a clay ceramics manufacturing facility.
Subpart LLLLL—NESHAP for Asphalt Processing and Asphalt Roofing Manufacturing	112(b) HAPs	Asphalt Processing and Asphalt Roofing Manufacturing	N/A—LANL does not operate an asphalt processing or asphalt roofing manufacturing facility.
Subpart MMMMM—NESHAP for Flexible Polyurethane Foam Fabrication Operations	112(b) HAPs	Flexible Polyurethane Foam Fabrication Operations	N/A—LANL does not have a flexible polyurethane foam fabrication operation.
Subpart NNNNN—NESHAP for Hydrochloric Acid Production	Hydrochloric Acid	Hydrochloric Acid Production	N/A—LANL does not operate a hydrochloric acid production facility.
Subpart PPPPP—NESHAP for Engine Test Cells/Stands	112(b) HAPs	Engine Test Cells/Stands	N/A—LANL does not operate engine test cells or stands.
Subpart QQQQQ—NESHAP for Friction Materials Manufacturing Facilities	112(b) HAPs	Friction Materials Manufacturing	N/A—LANL does not operate a friction materials manufacturing facility.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
Subpart RRRRR—NESHAP for Taconite Iron Ore Processing	112(b) HAPs	Taconite Iron Ore Processing Plants	N/A—LANL does not operate a taconite iron ore processing plant.
Subpart SSSSS—NESHAP for Refractory Products Manufacturing	112(b) HAPs	Refractory Products Manufacturing	N/A—LANL does not operate a refractory products manufacturing operation.
Subpart TTTTT—NESHAP for Primary Magnesium Refining	112(b) HAPs	Primary Magnesium Refining	N/A—LANL does not operate a primary magnesium refining operation.
Subpart DDDDDD—NESHAP for Polyvinyl Chloride and Copolymers Production Area Sources	112(b) HAPs	Polyvinyl Chloride and Copolymers Production	N/A—LANL does not operate a polyvinyl chloride and copolymers production operation.
Subpart EEEEEE—NESHAP for Copper Smelting Area Sources	112(b) HAPs	Copper Smelting	N/A—LANL does not operate a copper smelting operation.
Subpart FFFFFF—NESHAP for Secondary Copper Smelting Area Sources	112(b) HAPs	Secondary Copper Smelting	N/A—LANL does not operate a secondary copper smelting operation.
Subpart GGGGGG—NESHAP for Primary Nonferrous Metals Area Sources: Zinc, Cadmium, and Beryllium	112(b) HAPs	Primary Zinc or Beryllium Production Facilities	N/A—LANL does not operate primary zinc or beryllium production facilities.
20.2.84 NMAC—incorporating 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78: Acid Rain Program	SO_2 NO_x	Sources Affected under the Federal Acid Rain Program	N/A—No equipment at LANL are affected sources under the Acid Rain Program.
20.2.85 NMAC—Mercury Emission Standards and Compliance Schedules for Electric Generating Units[1]	Hg	Coal or coal-derived fuel electric generating boilers and turbines.	N/A—LANL does not operate coal or coal-derived fuel electric generating units.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
20.2.87 NMAC—Greenhouse Gas Emissions Reporting[1]	Greenhouse gases	Electric generating units >25 MW (facility total) Petroleum Refineries Cement Manufacturing Other: Voluntary	Applicable—LANL will report greenhouse gas emissions annually beginning with calendar year 2008 as required by the regulation.
20.2.88 NMAC—Emission Standards for New Motor Vehicles[1]	Criteria and Greenhouse Gases	Motor Vehicles	N/A—The regulation primarily applies to vehicle manufacturers and has a future effective date for model year 2011 vehicles. At the time of this application, EPA indicated the required federal waiver needed to implement the portion of this rule regarding greenhouse gas emissions fleet averaging would not be granted.
20.2.98 NMAC—Conformity of General Federal Actions to the State Implementation Plan	Criteria Pollutants	Federal Facilities in Nonattainment or Maintenance Areas	N/A—This regulation applies only to federal facilities located in nonattainment or maintenance areas. LANL is located in an attainment area.
20.2.99 NMAC—Conformity to the State Implementation Plan of Transportation Plans, Programs, and Projects	Criteria Pollutants	Federal Transportation Agencies	N/A—This regulation applies only to federal transportation agencies and their planning activities in nonattainment and maintenance areas.
Federal Applicable Requirements Not Adopted in EIB Regulations			
40 CFR Part 50—National Primary and Secondary Ambient Air Quality Standards	Criteria Pollutants	All	Applicable—20.2.70 NMAC includes NAAQS as an applicable requirement. All LANL operations are located within an area designated attainment for all NAAQS primary and secondary standards.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR Part 60 Subpart VVa—NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006[2]	Criteria Pollutants	Synthetic Organic Chemicals Manufacturing	N/A—LANL does not operate a synthetic organic chemicals manufacturing facility.
40 CFR 60 Subpart AAA—NSPS for New Residential Wood Heaters	PM	Residential Wood Heaters Manufactured after July 1, 1988, or Sold at Retail on or after July 1, 1990	N/A—LANL does not operate any residential wood heaters.
Subpart GGGa—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006[2]	Criteria Pollutants	Petroleum Refineries	N/A—LANL does not operate a petroleum refinery.
40 CFR Part 60 Subpart HHHH—Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units	Hg	Applies to State Air Quality Program Offices	N/A—The regulation only applies to state air quality program offices.
40 CFR Part 60 Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines[2]	Criteria Pollutants	Stationary Spark Ignition Internal Combustion Engines	N/A—The regulation applies to new stationary spark ignition engines manufactured after July 1, 2007. At the time of this application, LANL had not purchased any internal combustion engines subject to the rule.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 61 Subpart B—NESHAP for Radon Emissions from Underground Uranium Mines	Radon	Underground Uranium Mines	N/A—LANL does not operate an underground uranium mine.
40 CFR 61 Subpart H—NESHAP for Radionuclides other than Radon from DOE Facilities	Radionuclides	Department of Energy Facilities	Applicable—LANL is subject to 40 CFR 61, Subpart H.
40 CFR 61 Subpart I—NESHAP for Radionuclide Emissions from Federal Facilities Other Than Nuclear Regulatory Commission (NRC) Licensees and Not Covered by Subpart H	Radionuclides	Federal Facilities not Licensed by the NRC and Not Covered by Subpart H	N/A—LANL is covered by Subpart H.
40 CFR 61, Subpart K—NESHAP for Radionuclide Emissions from Elemental Phosphorus Plants	Radionuclides	Elemental Phosphorous Plants	N/A—LANL does not operate an elemental phosphorous plant.
40 CFR 61, Subpart Q—NESHAP for Radon Emissions from DOE Facilities	Radon-222	DOE Facilities Storing By-product Materials	Applicable—LANL is subject to 40 CFR 61, Subpart Q.
40 CFR 61, Subpart R—NESHAP for Radon Emissions from Phosphogypsum Stacks	Radon-222	Wet Acid Phosphorus Production Facilities	N/A—LANL does not operate a wet acid phosphorous production facility.
40 CFR 61, Subpart T—NESHAP for Radon Emissions from the Disposal of Uranium Mill Tailings	Radon	Uranium Mill Tailings	N/A—LANL does not operate a unit that disposes of uranium mill tailings.
40 CFR 61, Subpart W—NESHAP for Radon Emissions from Operating Mill Tailings	Radon-222	Uranium Mills	N/A—LANL does not operate a uranium mill tailings unit.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 62 Subpart GG—Approval and Promulgation of State Plans for Designated Facilities and Pollutants: New Mexico	Fluoride Reduced Sulfur Sulfuric Acid Mist Landfill Gas Emissions Municipal Waste Combustor Emissions	Kerr-McGee Nuclear Corp in McKinley County Climax Chemical in Lea County Municipal Waste Landfills	N/A—LANL does not operate any of the identified facilities.
40 CFR 63 Subpart WWWWW—NESHAP for Hospital Ethylene Oxide Sterilizers[2]	Ethylene Oxide	Hospital Ethylene Oxide Sterilizers	N/A—LANL does not operate a hospital ethylene oxide sterilizer.
40 CFR 63 Subpart YYYYY—NESHAP for Electric Arc Furnace Steelmaking Facilities[2]	112(b) HAPs	Electric Arc Furnace Steelmaking Facilities	N/A—LANL does not operate an electric arc furnace steelmaking facility.
40 CFR 63 Subpart ZZZZZ—NESHAP for Iron and Steel Foundries Area Sources[2]	112(b) HAPs	Iron and Steel Foundries	N/A—LANL does no operate an iron and steel foundry.
40 CFR 63 Subpart BBBBBB—NESHAP for Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities[2]	112(b) HAPs	Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities	N/A—LANL does not operate a bulk terminal, bulk terminal, or pipeline facility.
40 CFR Part 63 Subpart CCCCCC—NESHAP for Gasoline Dispensing Facilties[2]	112(b) HAPs	Gasoline Dispensing Facilities	N/A—LANL does not operate gasoline dispensing facilities.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR Part 63 Subpart HHHHHH—NESHAP for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources[2]	112(b) HAPs	Paint Stripping and Miscellaneous Surface Coating Operations	N/A—The rule exempts installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State), the National Aeronautics and Space Administration, or the National Nuclear Security Administration. EPA intends to develop a future rule covering these activities for these organizations.
40 CFR Part 63 Subpart LLLLLL—NESHAP for Acrylic and Modacrylic Fibers Production Area Sources[2]	112(b) HAPs	Acrylic and Modacrylic Fibers Production	N/A—LANL does not operate an acrylic and modacrylic fibers production plant.
40 CFR Part 63 Subpart MMMMMM—NESHAP for Carbon Black Production Area Sources[2]	112(b) HAPs	Carbon Black Production	N/A—LANL does not operate a carbon black production plant.
40 CFR Part 63 Subpart NNNNNN—NESHAP for Chemical Manufacturing Area Sources: Chromium Compounds[2]	112(b) HAPs	Chromium Compounds Manufacturing	N/A—LANL does not operate a chromium compounds manufacturing plant.
40 CFR Part 63 Subpart OOOOOO—NESHAP for Flexible Polyurethane Foam Production and Fabrication Area Sources[2]	112(b) HAPs	Flexible Polyurethane Foam Production and Fabrication	N/A—LANL does not operate a flexible polyurethane foam production or fabrication facility.
40 CFR Part 63 Subpart PPPPPP—NESHAP for Lead Acid Battery Manufacturing Area Sources[2]	112(b) HAPs	Lead Acid Battery Manufacturing	N/A—LANL does not operate a lead acid battery manufacturing plant.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR Part 63 Subpart QQQQQQ—NESHAP for Wood Preserving Area Sources[2]	112(b) HAPs	Wood Preserving	N/A—LANL does not have a wood preserving operation.
40 CFR Part 63 Subpart RRRRRR—NESHAP for Clay Ceramics Manufacturing Area Sources[2]	112(b) HAPs	Clay Ceramics Manufacturing	N/A—LANL does not operate a clay ceramics manufacturing facility.
40 CFR Part 63 Subpart SSSSSS—NESHAP for Glass Manufacturing Area Sources[2]	112(b) HAPs	Glass Manufacturing	N/A—LANL does not operate a glass manufacturing facility.
40 CFR Part 63 Subpart TTTTTT—NESHAP for Secondary Nonferrous Metals Processing Area Sources[2]	112(b) HAPs	Secondary Nonferrous Metals Processing	N/A—LANL does not operate a secondary nonferrous metals processing facility.
40 CFR 64—Compliance Assurance Monitoring	Criteria HAPs	Emission units with potential pre-controlled emission rate >100% of 40 CFR 70 major source threshold, equipped with a control device, and subject to an emission limit or standard.	N/A – This application requests fuel use restrictions on the three TA-3 Power Plant boilers which otherwise would be subject to Part 64 due to the use of an FGR control system for NO_x emissions.
40 CFR 68—Chemical Accident Prevention Provisions	112(r) regulated substances	All	N/A—LANL does not store quantities of 112(r) toxic or flammable materials in quantities above the thresholds for triggering applicability of this regulation.

Regulation	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 82 Subpart A—Production and Consumption Controls	Chlorofluoro-carbons (CFCs) and Hydrochloro-fluorocarbons (HCFCs)	Manufacturers of CFCs and HCFCs	N/A—LANL uses, but does not manufacture, CFCs or HCFCs.
40 CFR 82 Subpart B—Servicing of Motor Vehicle Air Conditioners	CFCs and HCFCs	Repair and Service of Motor Vehicle Air Conditioners	Applicable
40 CFR 82 Subpart C—Ban on Nonessential Products Containing Class I Substances	CFCs and HCFCs	Non-essential Products	N/A
40 CFR 82 Subpart D—Federal Procurement	CFCs and HCFCs	General Services Administration Department of Defense	N/A
40 CFR 82 Subpart E—Labeling of Products using ODSs	CFCs and HCFCs	Containers filled with CFCs or HCFCs and products manufactured with CFCs	N/A
40 CFR 82 Subpart F—Recycling and Emission Reduction	CFCs and HCFCs	Stationary Refrigeration Appliances	Applicable
40 CFR 82 Subpart G—Significant New Alternatives Policy	CFCs and HCFCs	Sources using Class I or Class II ODSs	N/A
40 CFR 82 Subpart H—Halon Emissions Reduction	Halons	Halon Containing Equipment	Applicable

(1) These regulations are not in the SIP and are not federally enforceable.
(2)EPA did not finalize these regulations prior to November 30, 2006, and therefore they had not been adopted in the annual updates to either 20.2.77 or 20.2.82 NMAC at the time of this application.

Table 3.1-2 provides a list of each applicable requirement that currently applies to LANL. For each requirement cited, the table indicates whether or not the regulation is federally enforceable. The NMED operating permit regulation requires each Title V permit to specify which requirements are federally enforceable. The table also shows whether the requirement applies to the entire LANL facility, i.e., is a facility-wide requirement, or to an emission unit or units, i.e., a unit-specific requirement. Additional information, including proposed monitoring, recordkeeping, and reporting, for sources subject to unit-specific requirements is provided in Chapter 2 of this application.

Table 3.1-2. Current Applicable Requirements for LANL

Applicable Requirement	Federally Enforceable?	Facility-wide Requirement?	Unit-specific Requirement?
20.2.7 NMAC—Excess Emissions during Malfunction, Startup, Shutdown, or Scheduled Maintenance	Yes	Yes	No
20.2.11 NMAC—Asphalt Process Equipment	Yes	No	Yes. Applicable to Emission Unit TA-60-BDM, Asphalt Production. (Chapter 2.1)
20.2.33 NMAC—Gas Burning Equipment: NO_2	Yes	No	Yes. Applicable to Emission Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 at the TA-3 Power Plant. (Chapter 2.9)
20.2.34 NMAC—Oil Burning Equipment: NO_2	Yes	No	Yes. Applicable to Emission Units TA-3-22-1, TA-3-22-2, and TA-3-22-3 at the TA-3 Power Plant. (Chapter 2.9)
20.2.60 NMAC—Open Burning	Yes	Yes	Yes. Applicable to burning of vegetative material (if triggered) and the RCRA interim status TA-16 Burn Ground.
20.2.61 NMAC—Smoke and Visible Emissions	Yes	Yes	Yes. Applicable to certain combustion sources as described in Chapter 2.
20.2.65 NMAC—Smoke Management	Yes	Yes	No. Applicable (if triggered) to prescribed fires exceeding applicability thresholds of the rule.
20.2.70 NMAC—Operating Permits	Yes	Yes	No
20.2.71 NMAC—Operating Permit Emission Fees	Yes	Yes	No
20.2.72 NMAC—Construction Permits	Yes	Yes	No

Applicable Requirement	Federally Enforceable?	Facility-wide Requirement?	Unit-specific Requirement?
20.2.73 NMAC—Notice of Intent and Emissions Inventory Requirements	Yes	Yes	No
20.2.75 NMAC—Construction Permit Fees	Yes	Yes	No
20.2.87 NMAC—Greenhouse Gas Emissions Reporting	No	Yes	No. Requires reporting of LANL greenhouse gas emissions beginning with calendar year 2008.
40 CFR Part 50—National Primary and Secondary Ambient Air Quality Standards	Yes	Yes	No
40 CFR Part 60—Subpart Dc: NSPS for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	No	Yes. Applicable to Emission Units TA-55-6-BHW-1 and BHW-2, 12.4 MMBtu/hr boilers at TA-55. (Section 2.3)
40 CFR Part 60—Subpart I: NSPS for Hot Mix Asphalt Facilities	Yes	No	Yes. Applicable to Emission Unit TA-60-BDM. Asphalt Plant. (Section 2.1)
40 CFR Part 60—Subpart GG: NSPS for Stationary Gas Turbines	Yes	No	Yes. Applicable to Emission Unit TA-3-22 CT-1 Combustion Turbine at the TA-3 Power Plant. (Section 2.9)
40 CFR Part 61—Subpart C: NESHAP for Beryllium	Yes	No	Yes. Applicable to beryllium operations at Emission Units: TA-3-141, TA-35-213, TA-55-PF4, TA-3-66, TA-16-207, and TA-35-87. (Section 2.2)
40 CFR 61—Subpart H: NESHAP for Radionuclides other than Radon from DOE Facilities	Yes	Yes	No
40 CFR Part 61—Subpart M: NESHAP for Asbestos	Yes	Yes	No
40 CFR 61—Subpart Q: NESHAP for Radon Emissions from DOE Facilities	Yes	Yes	No
40 CFR Part 63—Subpart T: MACT for Halogenated Solvent Cleaning	Yes	No	Yes. Applicable to Emission Unit TA-55-DG-1, the degreaser at TA-55 (Section 2.6)

Applicable Requirement	Federally Enforceable?	Facility-wide Requirement?	Unit-specific Requirement?
40 CFR 82—Subpart B: Servicing of Motor Vehicle Air Conditioners	Yes	Yes	No
40 CFR 82—Subpart F: Recycling and Emission Reduction	Yes	Yes	No
40 CFR 82—Subpart H: Halon Emissions Reduction	Yes	Yes	No

3.1.1 20.2.7 NMAC - Excess Emissions during Malfunction, Startup, Shutdown, or Scheduled Maintenance

This regulation requires notification to the NMED in the event of the occurrence of excess emissions during a malfunction, startup, shutdown, or scheduled maintenance. *"Excess emissions"* is defined as the emission of air contaminants in excess of an applicable emission limitation or requirement. This includes emission limitations established through permit conditions or by NMED air quality regulation, such as the opacity standards in 20.2.61 NMAC, which apply to combustion sources such as boilers and generators at LANL.

If notification is triggered, a verbal notification is required no later than 24 hours after the start of the next regular business day followed by a written notification within 10 days after the start of the next business day. Notification of excess emissions due to scheduled maintenance must be done verbally no later than 24 hours prior to the initial occurrence of the excess emissions and followed by a written notification. The rule specifies information to be included in the notification. The rule also specifies criteria that the NMED must use to determine whether or not a violation has occurred due to the excess emission during the limited circumstances of startup, shutdown, malfunction, or scheduled maintenance.

LANL provides notifications as required under 20.2.7 NMAC when excess emissions occur. Notifications in the past have been primarily for excursions over opacity limits, i.e., the degree to which an exhaust plume is visible to the human eye. LANL has complied with the requirements of this rule.

3.1.2 20.2.11 NMAC - Asphalt Process Equipment

This regulation applies to Emission Unit TA-60-BDM, Asphalt Production, and specifies an allowable PM emission rate in pounds per hour. It also requires the use of a fugitive dust control system so that all PM emissions are limited to the stack outlet.

The maximum asphalt process rate of the asphalt plant at TA-60-236 is 60 tons per hour (120,000 pounds per hour). This process rate equates to an allowable emission rate of 33.8 pounds per hour. A source test was conducted on this plant on August 26, 2005. As shown in the test report, the PM emission rate at maximum capacity is 0.27 pounds per hour, well below the allowable emission limit of 33.8 pounds per hour. The plant also has a control system for fugitive dust, which ensures emissions are limited to the stack outlet. Therefore, the plant is in compliance with 20.2.11 NMAC.

3.1.3 20.2.33 NMAC - Gas Burning Equipment - NO_2

This regulation applies to the three boilers (Emission Units TA-3-22-1, TA-3-22-2, and TA-3-22-3) at the TA-3 Power Plant described in Section 2.3 of this application. Each boiler has a nameplate rating of 210 MMBtu/hr heat input. These units are the only boilers at LANL large enough to meet the applicability criteria of the regulation, which is a heat input of greater than 1,000,000 MMBtu per year. Because the boilers were installed in the 1950s, they meet the definition of "existing gas burning equipment" within the regulation. The regulation specifies an emission limit of no greater than 0.3 pounds of NO_2 per MMBtu of heat input.

Prior to installation of the flue gas recirculation (FGR) system designed to lower NO_2 emissions, LANL conducted two source tests on Boiler 3. The August 1995 test report showed the nitrogen dioxide emission rate to be 0.136 lb/MMBtu at full load. The February 2000 test showed the NO_2 emission rate to be 0.187 lb/MMBtu. The test results show Boiler 3 is in compliance with 20.2.33 NMAC without the FGR control system.

Following installation of the FGR NOx control system, a compliance test was conducted on each boiler in September 2002. The measured NO_x concentrations for Boiler 1, Boiler 2, and Boiler 3 respectively were 0.057 lb/MMBtu, 0.052 lb/MMBtu, and 0.060 lb/MMBtu. The test results confirm compliance with 20.2.33 NMAC.

3.1.4 20.2.34 NMAC - Oil Burning Equipment - NO_2

This regulation applies to the three boilers (Emission Units TA-3-22-1, TA-3-22-2 and TA-3-22-3) at the TA-3 Power Plant described in Section 2.3 of this application. These units are the only boilers at LANL large enough to meet the applicability criteria of the regulation, which is a heat input of greater than 1,000,000 MMBtu per year. The regulation specifies an emission limit of no greater than 0.3 pounds of NO_2 per MMBtu of heat input for each boiler meeting the heat input criteria.

The TA-3 Power Plant boilers have the capability to use No. 2 fuel oil as a standby fuel. Emission tests are not typically conducted on standby fuels, which are used infrequently, so emission testing at the plant has been conducted on natural gas only. However, using the emission factor and fuel oil heat value from Table 2.9-1 in the Section 2.9 TA-3 Power Plant emission unit description, compliance with the emission limit can be demonstrated by the following calculation:

$$EmissionRate\left(\frac{lb}{MMBtu}\right) = \left[EmissionFactor\left(\frac{8.64\,lb\,NOx}{1000\,gal\,oil}\right)\right]\left[OilHeatValue\left(\frac{gal}{0.137\,MMBtu}\right)\right] = 0.06\,\frac{lb\,NOx}{MMBtu}$$

3.1.5 20.2.60 NMAC - Open Burning

Significant revisions were made to 20.2.60 NMAC in 2003. Open burn permits are no longer required or issued. Any open burning conducted must be either specifically allowed under the regulation, or a NSR permit must be obtained under 20.2.72 NMAC.

LANL may in the future conduct open burning of vegetative material such as grasses, shrubs, trees, or slash piles as part of fire mitigation efforts. Burning of vegetative material is allowed under Section 111 of the regulation if specific conditions are met and quantities of material burned meet the size restrictions in this section. At the time of this application, LANL had not conducted any burns of vegetative material under the revised regulations.

LANL also conducts open burning of high explosive (HE) and HE-contaminated wastes at the TA-16 Burn Ground. Due to the presence of the explosive characteristic, these wastes are classified as hazardous and subject to regulation under the New Mexico Hazardous Waste Act. The TA-16 Burn Ground is currently regulated under hazardous waste interim status regulations. At the time of this application, LANL had included this site in the current hazardous waste permit application submitted to NMED. Section 113 of the open burn regulation allows open burning of hazardous waste when conducted in compliance with interim status or a hazardous waste permit. The TA-16 Burn Ground meets these criteria and therefore complies with 20.2.60 NMAC.

Section 108 of 20.2.60 NMAC states open burning as allowed or prohibited in this part is not considered a stationary source as defined in other parts of Title 20, Chapter 2, NMAC. As stated, the TA-16 Burn Ground is not a stationary source subject to any other air quality requirements including Title V permitting under 20.2.70 NMAC.

3.1.6 20.2.61 NMAC - Smoke and Visible Emissions

20.2.61 NMAC limits visible emissions, i.e., emissions detected by the human eye, from certain stationary combustion equipment and diesel-powered vehicles. The regulation limits opacity to less than 20%. At LANL, the opacity limit applies primarily to boilers, generators, and diesel-powered vehicles used for construction purposes. However, the rule exempts all stationary equipment that is subject to any other particulate emission limit under other NMED regulations, and all equipment that is classified as an insignificant activity under the Title V operating permit program. Emissions from the cold engine startup from diesel-powered vehicles are also exempt.

LANL has found that opacity violations do not occur during normal operation of the stationary combustion units, cold startup on natural gas, or when natural gas is switched to fuel oil for “hot” boilers. However, exceedances can occur during cold startup on fuel oil or during

malfunctions at the TA-3 Power Plant. Therefore, opacity readings are made in accordance with the EPA standard method for opacity from 40 CFR Part 60, Appendix A, Method 9 during these occurrences. Opacity is read during each scheduled cold startup on fuel oil. During malfunctions where visible smoke is produced, a certified opacity observer reads the opacity as soon as possible.

LANL maintains a number of diesel-powered vehicles for construction purposes. No opacity violations have been reported during warm engine operation of these vehicles. Rather than having a program to read opacity on these vehicles, LANL has maintenance programs that follow manufacturer's recommendations to ensure that vehicles are running efficiently.

LANL complies with the requirements of 20.2.60 NMAC during routine operations and has a program in place to conduct opacity observations during non-routine operations of stationary equipment that could generate visible emissions.

3.1.7 20.2.65 NMAC – Smoke Management

This regulation became effective in December 2003 and sets forth requirements for the management of emissions from prescribed fires. The rule does not require burn permits, rather it implements a system requiring, among other items, pre-burn notifications, an assessment of ventilation categories prior to initiating a burn, visual monitoring during a burn, and post-burn reporting. LANL filed pre-burn notifications for two planned prescribed burns to mitigate fire hazards in the fall of 2007. Neither burn took place. At the time of this application, LANL had not conducted a prescribed burn triggering the requirements of the rule. LANL will comply with the regulation if any future prescribed burns trigger the rule requirements.

3.1.8 20.2.70 NMAC - Operating Permits

20.2.70 NMAC requires the owner or operator of a major stationary source to apply for and obtain a Title V operating permit. LANL is a major stationary source and currently operates under Title V Permit P100M2. This application fulfills the rule requirement to submit an application to renew the permit on a five-year cycle. LANL has complied with 20.2.70 NMAC.

3.1.9 20.2.71 NMAC - Operating Permit Emission Fees

This regulation requires Part 70 sources to pay an annual operating permit fee. LANL has paid the annual fee as required and is in compliance with this regulation.

3.1.10 20.2.72 NMAC - Construction Permits

20.2.72 NMAC requires construction permits for new or modified sources that exceed specified emission rates for criteria or NMED-regulated pollutants and sources subject to NSPS or NESHAP regulations. LANL has obtained construction permits as required by this regulation. Current active NSR permits include the following:

- NSR 632 for Emission Unit TA-35-213
- NSR 634 for Emission Unit TA-3-141
- NSR 1081 for Emission Unit TA-55-PF4
- NSR 2195B for Emission Units TA-3-22 (1, 2, 3 and CT-1)
- NSR 2195H for Emission Unit TA-52-11
- GCP3 2195G for Emission Unit TA-6-BDM
- NSR 2195F for Emission Unit TA-33-G-1
- NSR 2195P for Emission Unit TA-33-G (1, 2, 3)
- NSR 2195N was issued for the first phase of the Chemistry & Metallurgy Research Facility Replacement (CMRR) facility. However this facility has not been constructed or entered operation at the time of this application and is therefore not included in this application.

LANL has also filed administrative permit revisions for small exempt operations under Section 202.B of the regulation. LANL has complied with the requirements of 20.2.72 NMAC.

3.1.11 20.2.72 NMAC - Permit Conditions

LANL currently has air quality construction or NSR permits issued under 20.2.72 NMAC for beryllium activities, the TA-3 Power Plant, an asphalt plant, a data disintegrator, diesel generators at TA-33, and the first phase of the CMRR. The CMRR facility has not yet been constructed or entered into operation, and is therefore not included in this application.

Since NSR permit conditions are Title V applicable requirements, the conditions of the following NSR permits are included within the current Permit P100M2:

- NSR 632 for Emission Unit TA-35-213
- NSR 634 for Emission Unit TA-3-141
- NSR 1081 for Emission Unit TA-55-PF4
- NSR 2195B for Emission Units TA-3-22 (1, 2, 3 and CT-1)
- NSR 2195H for Emission Unit TA-52-11
- GCP3 2195G for Emission Unit TA-6-BDM

- NSR 2195F for Emission Unit TA-33-G-1

Condition 1.9 of Permit P100M2 states: "Compliance with this operating permit is sufficient to comply with all NSR permits listed in Table A.1." Each permit listed above is listed in Table A.1 of Permit P100M2. LANL is required under Permit P100M2 to submit an annual compliance certification report to NMED that states whether or not operations are in compliance with each permit term and condition. The most recent report for calendar year 2007 was submitted to NMED in January 2008. In the report, current compliance was certified for all permit conditions, including the NSR permit conditions that have been carried over to the operating permit. LANL has remained in compliance with NSR permit conditions certified in the annual certification.

There is one recent NSR permit issued in August 2007 that has not yet been incorporated within P100M2. NSR Permit 2195P was issued for three portable diesel generators at TA-33. These units are described in Section 2.7 of this application. Permit conditions for these generators and their compliance status are described below..

- Condition 1 – Permitted equipment are two 20-kW Kohler generators and one 225-kW Caterpillar generator. Operation is limited to 500 hours per year for each unit. Each unit must be certified to the 40 CFR Part 89 nonroad engine emission standards. LANL is in compliance with this condition.
- Condition 2 – Emission limits are specified for criteria pollutants for the three engines. An opacity limit of 20% is also specified. On October 15 through 18, 2007, visible emissions were observed using EPA Method 9 during cold startup of each of the three generators for four consecutive days. Each reading was well below the 20% opacity reading. Results of these observations were submitted to NMED by letter of October 22, 2007. A startup compliance test for NO_x and CO was conducted on December 4, 2007 on the 225-kW Caterpillar generator. The results as measured and reported to NMED were 4.38 lb/hr NO_x and 0.37 lb/hr CO. The allowable emission limits for this unit are 9.33 lb/hr NO_x and 5.7 lb/hr CO. LANL is in compliance with this condition.
- Condition 3 – An opacity reading is required for each cold startup. The requirement is reduced to an annual test once four consecutive observations show compliance. The required tests have been conducted. LANL is in compliance with this condition.
- Condition 4 – Records are required for each opacity test, the hours of operation for each engine, and the engine certification to the nonroad emission standards. LANL maintains these records and is in compliance with the condition.
- Condition 5 – This condition requires reporting of excess emissions under 20.2.7 NMAC.

No excess emissions have occurred. LANL is in compliance with this condition.

- Condition 6 – An initial compliance test for NO_x and CO is required for the 225 kW Caterpillar generator. The test was conducted and results submitted to NMED. LANL is in compliance with this condition.

3.1.12 20.2.73 NMAC - Notice of Intent and Emissions Inventory Requirements

This regulation contains two separate requirements. A Notice of Intent (NOI) application is required to be submitted prior to construction of a new source or modification of an existing source if specified emission rates are exceeded for regulated air contaminants. NMED reviews the application and determines if a construction permit is needed for the new or revised source. LANL has submitted NOI applications when this requirement has been triggered and has complied with the regulation.

20.2.73 NMAC also requires submission of an annual emission inventory by specified sources within the state. LANL prepares this report each year and has complied with the regulation by submission of the required report. LANL has also voluntarily included information regarding HAP emissions when requested by the NMED in the annual report.

3.1.13 20.2.75 NMAC - Construction Permit Fees

This regulation establishes fees for construction permits or permit revisions. A filing fee must be submitted with each application, and the NMED sends an invoice for the permit fee. Permit fees are specified based on the type of permit and technical complexity of review. LANL has submitted all fees as required for construction permits and is in compliance with this regulation.

3.1.14 20.2.87 NMAC - Greenhouse Gas Emissions Reporting

20.2.87 NMAC became effective on January 1, 2008. It requires an annual report of greenhouse gas emissions for each calendar year by July 1 of the following year. The first reports are due by July 1, 2009. The regulation specifies the reporting tools and procedures to be used. LANL will submit the required reports and comply with this regulation.

3.1.15 40 CFR Part 50 - National Primary and Secondary Ambient Air Quality Standards

NAAQS are established by EPA for criteria pollutants in order to protect human health and welfare. NAAQS have been established for ozone, SO_2, NO_2, PM, CO, and lead. The primary NAAQS are set at concentrations designed to be protective of human health. All areas of

the country are designated as being in attainment or nonattainment of the primary NAAQS. States are required to develop revisions to their SIPs to bring nonattainment areas into attainment.

LANL provided a facility-wide dispersion modeling analysis to support the initial 2002 Title V operating permit application. The analysis was reviewed and approved by NMED. In the analysis, it was demonstrated that emissions from LANL air sources did not cause or contribute to an exceedance of any NAAQS. All dispersion modeling analyses included in construction permit applications for LANL have also shown compliance with the NAAQS. In addition, LANL is located within a geographic area designated attainment for the NAAQS by the NMED and EPA. LANL operations do not cause or contribute to any violation of the NAAQS.

Finally, 20.2.70.300.D.10 states a certification of compliance for the NAAQS for a permit renewal application shall be based on compliance with the relevant terms and conditions of the current operating permit, and a modeling analysis is only required for first time permit applications. LANL is demonstrating compliance with the NAAQS in this renewal application by certifying compliance with all relevant permit conditions as described in this Chapter.

3.1.16 40 CFR Part 60 - Subpart Dc - NSPS for Small Industrial-Commercial-Institutional Steam Generating Units

There are two boilers at LANL that are regulated under NSPS Subpart Dc. These are the two Sellers boilers with a design input rating of 12.4 MMBtu/hr, which are located at TA-55 and which are discussed in Section 2.3 of this application. For gas-fired boilers of this size, Subpart Dc does not establish any emission standards. The only requirement is to measure and record the amount of natural gas consumed as fuel. The rule requires daily fuel monitoring. NMED approved an alternate monitoring plan that requires monthly fuel monitoring. In February 2006, EPA by final rule amended Subpart Dc to only require monthly fuel monitoring for gaseous fuels. A flow meter is used to measure fuel usage and monthly values are recorded as required. LANL is in compliance with the requirements of this regulation.

3.1.17 40 CFR Part 60 - Subpart I - NSPS for Hot Mix Asphalt Facilities

The NSPS Subpart I applies to Emission Unit TA-60-BDM, Asphalt Plant. The emission standard of Subpart I limits particulate matter to 0.04 grains per dry standard cubic foot. Following startup of the plant, a compliance test was conducted on August 26, 2005. As shown in the test report, the measured PM concentration was 0.0042 grains per dry standard cubic foot. LANL is in compliance with Subpart I.

3.1.18 40 CFR Part 60 - Subpart GG - NSPS for Stationary Gas Turbines

Subpart GG is applicable to Emission Unit TA-3-22-CT1, the Rolls-Royce RB-211 combustion turbine at the TA-3 Power Plant. Under this NSPS, the turbine is limited to a NO_x emission standard of 150 ppmv. Note that NSR Permit 2195B is more stringent and specifies a NO_x emission limit of 25 ppmv. LANL conducted a startup performance test as required by the NSPS and 40 CFR Part 60.8 on the turbine on October 5, 2007. As measured and reported to NMED, the NO_x concentration was 13.0 ppmv.

Subpart GG also contains an SO_2 emission standard by limiting the sulfur content of any fuel burned to 0.8% by weight (8,000 ppmw) or less. Natural gas used by the turbine contains a maximum of 2 grains of sulfur per 100 scf of gas. This is approximately equal to 0.000001% sulfur by weight assuming a density of natural gas of 1 lb per 23.8 ft^3.

The NSPS specifies monitoring options to verify the sulfur content of fuel being used. LANL complies with §60.334(h) by maintaining a record demonstrating the fuel used is natural gas with a sulfur content of 20 grains per scf or less.

LANL is in compliance with Subpart GG requirements.

3.1.19 40 CFR Part 61 - Subpart C - NESHAP for Beryllium

There are several facilities at LANL that are subject to the Subpart C NESHAP for beryllium. Each source subject to Subpart C is described in Section 2.2 of this application. As described in Section 2.2, new or modified beryllium sources are required to obtain construction permits from NMED under the provisions of 20.2.72 NMAC. There are currently three active sites at LANL for which a construction permit was required due to applicability of the Subpart C NESHAP. These facilities are the TA-3-141 Beryllium Test Facility, the TA-55-PF4 Plutonium Facility, and the TA-35-213 Target Fabrication Facility.

The Subpart C emission standard limits beryllium emissions from each source to 10 grams (0.022 lb) of beryllium over a 24-hour period. As shown in Table 2.2-2 of this application, the allowable emission rates established in the construction permit for each of the three permitted sites is less than 1 gram per 24-hour period. An allowable annual emission limit was also established in the construction permit process for each site.

An initial startup emission test was conducted for each new or modified source. Emission tests have been completed for TA-3-141, TA-35-213, and the TA-55-PF4 south stack. All test results showed compliance with the permitted allowable emission limits and Subpart C emission standard. Operations vented to the north stack of TA-55-PF4 have not yet initiated startup. A startup compliance test will be conducted once operations commence.

The facility exhaust stack at TA-3-141 is also required by permit conditions to be equipped with a continuous emission monitor (CEM) to measure beryllium emissions. LANL is required to provide a quarterly report to NMED that describes the compliance status of the site with permitted allowable emission rates based on CEM data collected. CEM data collection began in 2001. All CEM measurements have shown compliance with permitted emission limits and the Subpart C emission standard.

There are also three operations subject to Subpart C which were existing sources when the NESHAP was promulgated. These operations are located at TA-3-66, TA-16-207, and TA-35-87. These sites are subject to the beryllium emission standard of 10 grams per 24-hour period also. They are cited as registered beryllium sources in reference to the registration forms filed with EPA Region 6 following promulgation of the NESHAP. These small activities have negligible beryllium emissions and are in compliance with the emission standard.

LANL is in compliance with the beryllium Subpart C NESHAP.

3.1.20 40 CFR Part 61 - Subpart H - NESHAP for Radionuclides other than Radon from DOE Facilities

LANL is an applicable source under 40 CFR 61, Subpart H - National Emissions Standard for Emissions of Radionuclides Other than Radon from Department of Energy Facilities. This regulation requires that LANL not cause any member of the public to receive more than 10 mrem/yr from airborne radionuclide emissions. The regulation also specifies the mechanisms that will be used to demonstrate this dose standard is not exceeded. NMED has neither requested nor obtained oversight of this regulation, therefore authority for its implementation remains with EPA.

In 1990, LANL notified EPA that it was unable to demonstrate compliance with all requirements of Subpart H. This notification was followed by a Notice of Non-compliance (NON) and an on-site inspection by the EPA. Upon completion of this inspection, the EPA issued a second NON to the Laboratory.

LANL and EPA began negotiations for the development of a Federal Facility Compliance Agreement (FFCA) and Compliance Plan that would provide direction for LANL to come into compliance with the Subpart H requirements. These documents provided critical tools needed by LANL to demonstrate compliance, including approval for environmental monitoring of non-point sources. These negotiations were completed in 1997, and shortly thereafter LANL informed EPA that it was in compliance with the requirements of Subpart H, as implemented through the FFCA.

Since implementation of the FFCA was completed, LANL has continued to demonstrate compliance with Subpart H requirements, through submission of the annual report required under 40 CFR 61.94. All annual reports since implementation of the FFCA have demonstrated compliance with Subpart H standards.

In addition to this deliverable, LANL has several mechanisms in place to ensure continued compliance with the requirements. These mechanisms include stack sampling, ambient air sampling, periodic surveys of unmonitored release points, dose assessment, and periodic internal and external audits. The complete compliance program is documented in a quality assurance project plan maintained by LANL.

3.1.21 40 CFR Part 61 - Subpart M - NESHAP for Asbestos

LANL performs asbestos renovation and demolition activities covered by §61,145 of the Subpart M NESHAP. Radioactively contaminated material is disposed of on-site in a designated radioactive asbestos burial area. Subpart M requirements at §61.154 for active waste disposal sites apply to this activity. Non-radioactive asbestos material is transported off-site to designated asbestos disposal areas. This disposal activity is regulated under Subpart M, §61.150. These Subpart M sections set numerous work practice standards for asbestos removal and disposal as well as notification and recordkeeping requirements. LANL has an on-going successful asbestos program that undergoes NMED review and inspection. LANL is in compliance with applicable Subpart M requirements.

3.1.22 40 CFR Part 61 - Subpart Q - NESHAP for Radon Emissions from DOE Facilities

NMED has not requested delegation of the Subpart Q NESHAP. Therefore, the responsibility for administering this regulation resides with EPA. This regulation applies to radon-222 (Rn-222) emissions from DOE storage/disposal facilities that contain byproduct material, as defined under section 11.e(2) of the Atomic Energy Act of 1954. *"Byproduct material"* is the tailings or wastes produced by the extraction or concentration of uranium or thorium from ore. While this regulation targets uranium mills, LANL has likely stored small amounts of byproduct material used in experiments in the TA-54 low level waste (LLW) disposal facility, making LANL subject to this regulation. Subject facilities cannot exceed an emissions rate of 20 picocuries per square meter per second (pCi/m^2/sec) of Rn-222.

Because the regulation provides no guidance on how compliance should be demonstrated, DOE and EPA negotiated a method in an April 5, 1995, DOE memorandum entitled "Memorandum of Understanding (MOU) with the Environmental Protection Agency Concerning

the Radionuclide National Emission Standards for Hazardous Air Pollutants." This document states the following:

"For sources subject to the standard of Section 61.192, DOE will demonstrate compliance through direct measurement of radon-222 in accordance with Appendix B, Method 115, or use alternative procedures (based on best available data) that do not underestimate emissions. Where flux measurements demonstrate compliance with the 20 pCi/m^2-sec standard, no further measurements are required so long as the storage or disposal site remains in the condition for which compliance was demonstrated."

In 1993 and 1994, LANL conducted a study to characterize emissions from the Area G disposal site, entitled "Measurement of Emission Fluxes from Technical Area 54, Areas G and L." LA-SUB-96-99-pl.3. This study shows a maximum measured radon emission rate of 0.33 pCi/m^2-sec (20 pCi/m^2-min) and an average emission rate of 0.14 pCi/m^2-sec (8.1 pCi/m^2-min) for the entire site. An analysis performed for the DOE-required performance assessment for Area G shows that, based on historic and future waste disposal patterns, Rn-222 activity will not increase for more than 1,000 years. It can be concluded that the site has remained in the same condition for which compliance was demonstrated (e.g., the site condition has not been altered by adverse weather conditions, a natural catastrophe has not occurred, greater concentrations of wastes are not being disposed of, etc.). Therefore, in accordance with the conditions in the MOU, LANL is in compliance with Subpart Q.

3.1.23 40 CFR Part 63 - Subpart T - MACT for Halogenated Solvent Cleaning

MACT, Subpart T applies to minor or area sources of HAP emissions. LANL operates one solvent cleaning machine, or degreaser, which is subject to the Subpart T NESHAP due to the usage of trichloroethylene as a cleaning solvent. These units are described in Section 2.6 of this application. The degreaser is a cold batch design that is subject to work practice standards under Subpart T. There are no physical controls required by the rule.

Work practice standards that apply to the degreasers are listed in Table 2.6-2 and are intended to minimize evaporative emissions of the cleaning solvent. LANL complies with these requirements.

3.1.24 40 CFR Part 82 - Subpart B - Servicing of Motor Vehicle Air Conditioners

This Subpart established standards and requirements related to recycling equipment used in the servicing of motor vehicle air conditioners and training and certification of technicians providing such services. LANL services motor vehicle air conditioners and uses recycling

equipment certified in accordance with 40 CFR §82.36. All technicians servicing motor vehicle air conditioners at LANL are certified in accordance with 40 CFR §82.40. LANL is in compliance with Subpart B requirements.

3.1.25 40 CFR Part 82 - Subpart F - Recycling and Emission Reduction

This Subpart prohibits individuals from knowingly venting ozone-depleting substances used as refrigerants into the atmosphere while maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment. Under Section 608 of the CAA, it has been illegal since November 15, 1995, to knowingly vent substitutes for chlorofluorocarbons (CFC) and hydrochlorofluorocarbons (HCFC) refrigerants during the maintenance, service, repair, and disposal of air conditioning and refrigeration equipment. LANL recovers all refrigerants during maintenance, service, repair, and disposal of refrigeration equipment at the Laboratory and does not vent refrigerants to the atmosphere.

Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR §82.156. LANL has adopted procedures to comply with 40 CFR §82.156 and performs all maintenance, service, repair, and disposal in accordance with 40 CFR §82.156 requirements.

Equipment used during the maintenance, service, repair, and disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR §82.158. All of LANL's refrigerant recovery equipment meets the requirements of 40 CFR §82.158 and is certified by EPA-approved equipment testing organizations as specified in 40 CFR §82.160.

Persons performing maintenance, service, repair, and disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR §82.161. All technicians performing refrigeration work at LANL are certified in accordance with 40 CFR §82.161.

LANL is in compliance with Subpart F requirements.

3.1.26 40 CFR Part 82 - Subpart H - Halon Emissions Reduction

LANL services and maintains equipment that contains halons. All technicians employed who maintain the equipment have been trained regarding halon emissions reduction. During maintenance of halon equipment, technicians do not knowingly vent or otherwise release halon into the environment. LANL also disposes of halon-containing equipment in accordance with Subpart H requirements. LANL is in compliance with this regulation.

3.2 Summary of Compliance Test History for LANL Emission Units.

Table 3.2-1 is a compilation of compliance test history at LANL air emission units.

Table 3.2-1 Compliance Test History for LANL Emission Units

Emission Unit	Test Description	Date of Test
TA-60-BDM Asphalt Production	Emission rates of Total Suspended Particulate (TSP) and Visible Emissions were determined by CFR 40, Part 60, Appendix A, Method 5 and 9 as required by condition IV.E. of General Construction Permit GCP-3-2195G.	August 25 and 26, 2005
Beryllium Test Facility TA-3-141 Beryllium Activities	Emissions rates of Beryllium were measured in accordance with Methods 29 of CFR 40, Parts 60, Appendix C, as required by NSR Permit 634M2. (Pre-approval was obtained to use Method 29.)	June 27, 2001
Target Fabrication Facility TA-35-213 Beryllium Activities	Emissions rates of Beryllium were measured in accordance with Methods 103 and 104 of CFR 40, Parts 61, Appendix B, as required by NSR Permit 632.	September 9, 1986
Plutonium Facility TA-55-PF4 Beryllium Activities	Emissions rates of Beryllium were measured in accordance with Methods 29 CFR 40, Parts 60, Appendix C, as required by NSR Permit 1081M1. (Pre-approval was obtained to use Method 29)	February 17 and 18 1993
	Emissions rates of Beryllium were measured in accordance with Methods 103 and 104 of CFR 40, Parts 61, Appendix B, as required by NSR Permit 1081.	February 14, 1994
	Emissions rates of Beryllium were measured in accordance with Methods 29 CFR 40, Parts 60, Appendix C, as required by NSR Permit 1081M1. (Pre-approval was obtained to use Method 29)	September 26 and 27 2002
Boiler TA-3-22-1	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 3a, 6, 7e, 10 and 19, as required by NSR Permit 2195B	September 25, 26, 27, 2002
Boiler TA-3-22-2	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 3a, 6, 7e, 10 and 19, as required by NSR Permit 2195B.	September 25, 26, 27, 2002
Boiler TA-3-22-3	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 1, 2, 7e, 10, and 19. Testing done in preparation of permitting action.	August 29, 1995
	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 1 to 4, 7e, 10, and 19. Testing was conducted in preparation of permitting action.	February 16, 2000
	Emission rates of NO_x, and CO were measured using CFR 40, Part 60, Appendix A, Methods 3a, 6, 7e, 10 and 19, as required by NSR Permit 2195B.	September 25, 26, 27, 2002
Combustion Turbine TA-3-22-CT-1	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 1to 4, 7e and 10, as required by NSR Permit 2195BM1.	Oct 5, 2007
Diesel Generator TA-33-G-4* (This unit is identified as Unit 3 in Permit 2195P	Emission rates of NO_x and CO were measured using CFR 40, Part 60, Appendix A, Methods 1to 4, 7e, 9, and 10, as required by NSR Permit 2195P.	December 4, 2007

*Emission Unit designation as proposed in this renewal application, see Chap 2.7.

3.3 Schedule of Submission of Compliance

As required in the existing Operating Permit P100M2, the LANL reporting period is each calendar year. The compliance certification report is submitted by January 30th, following the reporting year.

3.4 Permit Shield Request

As provided for by 20.2.70.302.J NMAC, the Laboratory requests that a permit shield be included in the Title V operating permit issued for LANL. The provision should state compliance with the conditions of the operating permit shall be deemed compliance with all applicable requirements identified in the permit as of the date of permit issuance.

3.5 Compliance Certification

I certify, under penalty of law, that based on information and belief formed after reasonable inquiry, the statements and information contained in Chapter 3.0 of this Title V Operating Permit Application concerning this facility's compliance status are true, accurate, and complete. The methods used for determining compliance are discussed in Chapter 2 and Chapter 3. The Los Alamos National Laboratory will continue to be in compliance with the applicable requirements in Chapter 3 for which it is currently in compliance, and will, in a timely manner, meet additional applicable requirements that become effective during the permit term. A responsible official of the facility shall submit a compliance certification to NMED annually.

Signed: _____ Date: _____

Richard Watkins
Associate Director Environment, Safety, Health and Quality
Los Alamos National Security, LLC
Los Alamos National Laboratory

NMED - AIR QUALITY BUREAU
2048 GALISTEO
SANTA FE, NM 87505-0200
TELEPHONE: (505) 827-1494

NEW MEXICO ENVIRONMENT DEPARTMENT
AIR QUALITY BUREAU

OPERATING PERMIT APPLICATION FORM
(20.2.70 NMAC)

Please answer all questions in each section.
Use the abbreviation "NA" for "not applicable" wherever appropriate.
Specific instructions corresponding to numbers in brackets are on the back of each page.

SECTION 1 - GENERAL INFORMATION: (20.2.70.D NMAC)[1]

1. Company Name[2]: U.S. Department of Energy(DOE)/Los Alamos National Laboratory — 2. Application Date: April 30, 2008

3. Company Mailing Address: 528 35th Street, Los Alamos, NM 87544 — 4. Phone: (505) 667-5105

5. Owner's Name [3]: DOE, National Nuclear Security Administration — 6. Phone: (505) 667-5105

7. Owner's Mailing Address: Office of Los Alamos Site Operations, 528 35th Street, Los Alamos, NM 87544

8. Plant or Facility Name [4]: Los Alamos National Laboratory — 9. Phone: (505) 667-4218

10. Plant Mailing Address: P.O. Box 1663, Los Alamos, NM 87545 — 9a. Fax:

11. Plant Operator [5]: Los Alamos National Security, LLC — 12. Phone: (505) 667-4218

13. Plant Operator Address: P.O. Box 1663, Los Alamos, NM, 87545 — 12a. Fax: (505) 665-3811

14. Responsible Official [6]: Richard Watkins — Title: Environment, Safety, Health and Quality Associate Director — 15. Phone: (505) 667-4218

16. Responsible Official Address: Mail Stop 491, Los Alamos National Laboratory, Los Alamos, NM 97545 — 15a. email: rswatkin@lanl.gov

17. Person to Contact at Site [7]: Dianne Wilburn — 18. Title: Group Leader, ENV-EAQ — 19. Phone: (505) 667-6952

20. Company Air Permit Contact [8]: Dianne Wilburn, Group Leader ENV-EAQ — 21. Phone/fax/email: (505) 667-6952

22. Company's State of Incorporation or Registration to do Business: N/A Federal Government

23. Company's Corporate or Partnership Relationship to any other Air Quality Permittee [9]: N/A

24. Name of Parent Company [10]: N/A

25. Address of Parent Company: N/A

26. Names of Subsidiary Companies [11]: N/A

27. Previous Air Quality Permits Issued to this facility (Permit Numbers): P100, 632,634,636,1081,2195, 2195B, 2195H, 2195G, 2195F, 2195N, 2195P — 28. Other Air Quality Permits Issued to this Applicant (Permit Numbers): N/A

29. Reason this source must have an 20.2.70 NMAC operating permit [12]: Major source (>100 tons/year) for nitrogen oxides, volatile organic compound, and carbon monoxide

30. This Operating Permit Application is for (check one): ☐ New Permit; ☒ Permit Renewal; ☐ Minor Modification; ☐ Significant Modification.

If this Application is for Permit Renewal or Modification give: Current Operating Permit No. P100 ; Expiration Date April 30, 2009

31. Is this a permanent source? [13]: ☒ Yes ☐ No. If No, how long will this site be occupied?

32. Is this a portable source? [14]: ☐ Yes ☒ No

32A. If yes, provide identifying numbers (Example: source unit numbers, equipment serial numbers, etc..): N/A

32B. If yes, date of anticipated relocation: N/A **32C. If yes, date of anticipated startup:** N/A

33. Plant Operational Periods: (Subparagraph D(5)(f) of 20.2.70.300 NMAC)

33A. Specify standard operational periods:

8 hours per day, 8 am to 5 pm, 5 days per week, 4 weeks per month, 12 months per year.

33B. Specify maximum operational periods:

24 hours per day, am to pm, 7 days per week, 4 weeks per month, 12 months per year.

33C. Max Operational Hours in a Year 8760

34. Describe briefly type of plant and nature of process(es) and products [15]:

LANL is a government laboratory primarily engaged in national security and nuclear weapons research

Plant Primary SIC code [16]: 9711 **Plant Secondary SIC code [17]:** N/A

35. Describe briefly any process(es) or products associated with any alternative operating scenarios described in this application [18]:

N/A

Plant Primary and Secondary SIC codes for this alternative process(es): N/A

36. Plant's Maximum Allowable Capacity (Specify Units) [19]:

Hourly: N/A ; **Daily:** N/A ; **Annual:** N/A

37. Plant Location [20]:

37A. County: Los Alamos **37B. Direction and distance from nearest town:** Southern border of Los Alamos

37C. Range: 6E **Township:** 19N **Section:** 22 **37D. Latitude:** 35°51'36" **Longitude:** 106°17'45"

37E. UTM Zone: 13 **UTMH:** 383.0 km **UTMV:** 3969.0 km

38. Plant Elevation 7220 **Feet (meters) above mean sea level**

39. Ownership of Land at Plant site (Private, State, Federal, etc.): Federal

NOTE: If the land at the plant site is Indian land, contact the Air Pollution Control Bureau permitting staff for assistance.

40. Distance, in meters, of plant site to nearest residence, school or occupied structure [21]: 1.5 km N (Royal Crest Trailer Park)

41. Is U.S.G.S. quadrangular map (or equivalent) attached with Plant location marked? [22]: ☒ Yes, ☐ No.

42. Identify all Class-1 areas, Indian Lands, Bernalillo County, and neighboring states that are within 50 miles of the facility, and give their radial distances in miles: Taos Pueblo (43), Picuris Pueblo (35), Jicarilla Apache Indian reservation (42), San Juan Pueblo (12), Santa Clara Pueblo (6), San Ildefonso Pueblo (3), Pojoaque Pueblo (8), Nambe Pueblo (15), Teseque Pueblo (12), Cochiti Pueblo (8), Santa Domingo Pueblo (17), Zia Pueblo (19), San Felipe Pueblo (24), Santa Ana Pueblo (25), Jemez Pueblo (12), Sandia Pueblo (38), Laguna Pueblo (48), Bernallio County (35), Bandelier Wilderness (0), Pecos Wilderness (35), San Pedro Wilderness Park (27)

SECTION 2A - RAW MATERIALS PROCESSED [23]: (20.2.70.300.D.4 NMAC)
(Complete only if needed to determine emissions or if an applicable requirement exists for materials processed)

(Use additional sheets if necessary)

Unit No. [24]	Material [25]	Composition [26]	Condition [27]	Quantity Used [28] (Specify Units)
N/A[(a)]				

SECTION 2B - MATERIALS PRODUCED: (20.2.70.300.D.4 NMAC)
(Complete only if needed to determine emissions or if an applicable requirement exists for materials produced) (Use additional sheets if necessary)

Unit No.	Material [29]	Composition	Condition	Production Rates (Specify Units)
Asphalt Production TA-60-BDM	Asphalt	Mixture of asphalt tar and aggregate varies by batch.	N/A	13,000 tons per year

SECTION 3A - LIQUID STORAGE TANKS - MATERIAL DATA [30]: (20.2.70.300.D.5 and 6 NMAC)

(Complete asterisk * columns only if the tank has an applicable requirement or if necessary to calculate emissions) (Use additional sheets if necessary)

Tank No. [31]	Liquid Stored [32] / Source Classification Code [32a]	Liquid Composition [33]	*Liquid Density (lb/gal)	*Vapor Molecular Weight (lb/lb-mole)	*Average Storage Temp., T_{av} (ºF)	*True Vapor Pressure at T_{av} (psia)	*Maximum Storage Temp., T_{max} (ºF)	*True Vapor Pressure at T_{max} (psia)
N/A[(b)]								

SECTION 3B - LIQUID STORAGE TANKS - TANK DATA: (Paragraphs 5 and 6 Subsection D of 20.2.70.300 NMAC)
(Complete asterisk * columns only if the tank has an applicable requirement or if necessary to calculate emissions) (Use additional sheets if necessary)

Tank No. [34]	Date Installed/ Modified[35]	Capacity (gal)	*Tank Diameter (ft)	*Roof Type [36]	*Seal Type[37]	*Vapor Space Height (ft) [38]	*Roof/ Shell Color [39]	*Paint Cond-ition [40]	*Annual Throughput (gal/yr) [41]	*Turnovers per Year [42]
N/A[(b)]										

SECTION 4A - SOLID MATERIAL STORAGE - MATERIAL DATA [43]: (20.2.70.300.D.5.d NMAC)
(Complete asterisk ***** columns only if necessary to calculate emissions or if there is an applicable requirement for material storage) (Use additional sheets if necessary)

Storage Unit No.[44]	Storage Material Name	*Emission Unit(s), Process or Operation Served [45]	Storage Type [46]	Storage Material Composition [47]	* Date Installed or Modified
N/A[(c)]					

SECTION 4B - SOLID MATERIAL STORAGE - STORAGE DATA [48]: (20.2.70.300.D.5.d NMAC)
(Complete asterisk * columns only if necessary to calculate emissions or if there is an applicable requirement for material handling) (Use additional sheets if necessary)

Storage Unit No. [49]	Transfer or Transport Method [50]		*Maximum Hourly Throughput (specify units)	*Annual Throughput (specify units)	Dust Control Method (During Storage and Transfer) [51]
	Incoming	Outgoing			
N/A[c]					

SECTION 5 - FUEL USEAGE AND FUEL DATA [52]: (20.2.70.300.D.5.d NMAC)

(Complete asterisk * column only if needed to determine or regulate any emissions or if there is an applicable requirement for the fuel) (Use additional sheets if necessary)

Emission Unit No. [53]	Type of Equipment [54]	Equipment Manufacturer, Model and Serial Nos.	Date Manufactured	Equipment Rated Capacity [55]	*FUEL DATA [56]				
	Source Classification Code[55a]		Date Constructed (Installed)		Fuel Type [57]	Amount Per Year [58]	Lower Heating Value [59]	% of Sulfur [60]	% of Ash [61]
TA-60-BDM	Asphalt Plant	BDM Engineering Model TM2000	9/2002	25 MMBtu/hr max.	Propane	N/A	N/A	N/Amax.	N/A max.
	3050255		9/2002	normal				N/A ave.	N/A ave.
TA-16-1484-BS-1	Boiler	Sellers, Model 183 H.P.-SH-LN390 Serial 10291	1995	7.47 MMBtu/hr max.	Pipeline Quality Natural Gas	870 MMscf/yr(d)	1030 Btu/scf	N/A max.	N/A max.
	101006002		1995	6.35 MMBtu/hr normal				N/A ave.	N/A ave.
TA-16-1484-BS-2	Boiler	Sellers, Model 183 H.P.-SH-LN390 Serial 10290	1995	7.47 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1995	6.35 MMBtu/hr normal				N/A ave.	N/A ave.
TA-48-1-BS-1	Boiler	Sellers, Model 15 Seniors-150 Serial 99017	1987	6.28MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1987	5.34MMBtu/hr normal				N/A ave.	N/A ave.
TA-48-1-BS-2	Boiler	Cleaver Brooks, Model CB-700-150 Serial L-62569	1976	6.28 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1976	5.34 MMBtu/hr normal				N/A ave.	N/A ave.
TA-48-1-BS-6	Boiler	Cleaver Brooks, Model CB-700-200 Serial L-093412	1994.	8.40 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1994	7.14 MMBtu/hr normal				N/A ave.	N/A ave.
TA-53-365-BHW-1	Boiler	Sellers, Model 15 Seniors-2-200-w Serial 99031-1	1988.	8.37 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1988	7.11 MMBtu/hr normal				N/A ave.	N/A ave.
TA-53-365-BHW-2	Boiler	Sellers, Model 15 Seniors-2-200-w Serial 99031-2	1988	8.37 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1988	7.11 MMBtu/hr normal				N/A ave.	N/A ave.
TA-55-6-BHW-1	Boiler	Sellers Model 350 H.P. W-LN490 Serial 101319-B	2001	14.6 MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		2001	12.4 MMBtu/hr normal				N/A ave.	N/A ave.

Emission Unit No. [53]	Type of Equipment [54] / Source Classification Code[55a]	Equipment Manufacturer, Model and Serial Nos.	Date Manufactured / Date Constructed (Installed)	Equipment Rated Capacity [55]	*FUEL DATA [56]				
					Fuel Type [57]	Amount Per Year [58]	Lower Heating Value [59]	% of Sulfur [60]	% of Ash [61]
TA-55-6-BHW-2	Boiler	Sellers Model 350 H.P. W-LN490 Serial 101319-A	1998	14.6 MMBtu/hr max.	Pipeline Quality Natural Gas	870 MMscf/yr[(d)]	1030 Btu/scf	N/A max.	N/A max.
	101006002		1998	12.4 MMBtu/hr normal				N/A ave.	N/A ave.
TA-59-1-BHW-1	Boiler	Cleaver Brooks, CB-700-150 Serial L-64591	1978	6.28MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1978	5.34MMBtu/hr normal				N/A ave.	N/A ave.
TA-59-1-BHW-2	Boiler	Cleaver Brooks, Model CB-700-150 Serial L92957	1994	6.28MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1994	5.34MMBtu/hr normal				N/A ave.	N/A ave.
TA-50-2-BS-1	Boiler	Superior, Model M56-5-1500-S260 Serial 9661	1985	12.6MMBtu/hr max.	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002		1985	10.7MMBtu/hr normal				N/A ave.	N/A ave.
N/A[(e)]	Remaining Exempt Comfort and Process Boilers/ Heaters (Low NOx)	Various	Various	<6.3 MMBtu/hr normal	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002							N/A ave.	N/A ave.
	Remaining Exempt Comfort and Process Boilers/Heaters	Various	Various	<2.3 MMBtu/hr normal	1030 Btu/scf		1030 Btu/scf	N/A max.	N/A max.
	101006002							N/A ave.	N/A ave.
	Remaining Exempt Comfort Boilers and Heaters (Uncontrolled)	Various	Various	≤5.0 MMBtu/hr normal	Pipeline Quality Natural Gas		1030 Btu/scf	N/A max.	N/A max.
	101006002							N/A ave.	N/A ave.

Emission Unit No. [53]	Type of Equipment [54] / Source Classification Code[55a]	Equipment Manufacturer, Model and Serial Nos.	Date Manufactured / Date Constructed (Installed)	Equipment Rated Capacity [55]	*FUEL DATA [56]				
					Fuel Type [57]	Amount Per Year [58]	Lower Heating Value [59]	% of Sulfur [60]	% of Ash [61]
TA-3-22-1 TA-3-22-2 TA-3-22-3	Power Plant Boilers	Edgemoore Iron Works, Model 4008 Edgemoore Iron works, Model 4009 Union Iron Works, Model 102824	Boiler 1,2 1950 Boiler 3, 1952	210 MMBtu/hr max.	Pipeline Quality Natural Gas	2,000 MMscf/yr	1030 Btu/scf	N/A max.	N/A max.
				178.5 MMBtu/hr normal.				N/A ave.	N/A ave.
	101006002		Boiler 1,2 1950 Boiler 3 1952	210 MMBtu/hr max.	No. 2 Fuel Oil	500,000 Gallons	137,000 Btu/gal	0.05 max.	N/A max.
				178.5 MMBtu/hr normal.				N/A ave.	N/A ave.
TA-3-22-CT-1	Combustion Turbine	Rolls-Royce, Model RB211-6761 DLE Serial 2011	2003	32.0 MW	Pipeline Quality Natural Gas	646 MMscf/yr	1030 Btu/scf	N/A max.	N/A max.
			2005	24.6Mw Normal				N/A ave.	N/A ave.
TA-33-G-1	Diesel Generator	Kohler, Model 1600 ROZD Serial L862063	06/1996	1600 Kw max.	No. 2 Fuel Oil	5,000 Gal/yr	137,000 Btu/gal	0.05 max.	N/A max.
	20100102		2002	1500 Kw normal				N/A ave.	N/A ave.
TA-33-G-2	Diesel Generator	Kohler Model # 20EORZ Serial # 2025460	02/2005	20 Kw max.	No. 2 Fuel Oil	1,100 Gal/yr	137,000 Btu/gal	0.05 max	N/A max.
	20100102		08/2007					N/A ave.	N/A ave.
TA-33-G-3	Diesel Generator	Kohler Model # 20EORZ Serial # 2025461	02/2005	20 Kw max.	No. 2 Fuel Oil	1,100 Gal/yr	137,000 Btu/gal	0.05 max	N/A max
	20100102		08/2007					N/A ave.	N/A ave.
TA-33-G-4	Diesel Generator	Caterpillar Model # 3306 Serial # 6PK01065	10/1999	225 Kw max.	No. 2 Fuel Oil	9,100 Gal/yr	137,000 Btu/gal	0.05 max	N/A max
	20100102		08/2007					N/A ave.	N/A ave.
			.						

SECTION 6 - AIR POLLUTION UNITS and CONTROL EQUIPMENT DATA [62]: (20.2.70.300.D.5.e and 7.a NMAC)

(List all Air pollution units of plant, including the units listed in Sections 3 thru 5) (Use additional sheets if necessary)

Emission Unit No.[63]	Process or Operation [64]	Is Air Pollution Control Equipment Installed (Yes/No) [65]	Air Pollution Control Equipment No.[66]	AIR POLLUTION CONTROL EQUIPMENT DATA		AIR POLLUTION CONTROL EQUIPMENT EFFICIENCY DATA		Applicable Requirements for this Process and/or Control [67]
				Equipment Type [68]	Manufacturer and Model No. [69]	% by Weight [70]	Method of Determination [71]	
TA-60-BDM	Asphalt Production	Yes	1	Cyclone	BDM Engineering Model 84M	70%	Manufacturer's Rating	See Section 2.1
			2	Baghouse	BDM Engineering Model 18000M	99.9%		
Sigma Facility TA-3-66	Beryllium polishing electroplating chemical milling	Yes	1	Aqueous solution or Lubricant bath	N/A	N/A	N/A	See Section 2.2
	Beryllium machining and arc melting and casting	Yes	2	HEPA Filter	Varies[(f)]	99.9%	Filter Performance Test	See Section 2.2
Beryllium Test Facility TA-3-141	All Beryllium Operations	Yes	HS5-7320 HS5-7331	HEPA Filter	Varies[(f)]	99.9%	Filter Performance Test	See Section 2.2
	Powder operations, other than closed glovebox operations and machining except metallographic prep	Yes	1	Cartridge	Varies[(f)]	99.9%	Manufactures Rating	See Section 2.2
	Metallographic preparation	Yes	2	Aqueous solution or Lubricant bath	N/A	N/A	N/A	See Section 2.2
TA-16-207	Beryllium Wet Sanding	N/A[(g)]	-	-	-	-	-	See Section 2.2
TA-35-87	Beryllium Punching and Cutting	N/A[(g)]	-	-	-	-	-	See Section 2.2

Emission Unit No.[63]	Process or Operation [64]	Is Air Pollution Control Equipment Installed (Yes/No) [65]	Air Pollution Control Equipment No.[66]	AIR POLLUTION CONTROL EQUIPMENT DATA		AIR POLLUTION CONTROL EQUIPMENT EFFICIENCY DATA		Applicable Requirements for this Process and/or Control [67]
				Equipment Type [68]	Manufacturer and Model No. [69]	% by Weight [70]	Method of Determination [71]	
Target Fabrication TA-35-213	Beryllium Machining	Yes	1	HEPA Filter	Varies[(f)]	99.9%	Filter Performance Test	See Section 2.2
Plutonium Facility TA-55-PF4	Beryllium Machining	Yes	FF-854 FF-855 FF-858 FF-859 FF-852 FF-853	HEPA Filter	Varies[(f)]	99.9%	Filter Performance Test	See Section 2.2
TA-16-1484-BS-1	Low NO_x Boiler	No	-	-	-	-	-	See Section 2.3
TA-16-1484-BS-2	Low NO_x Boiler	No	-	-	-	-	-	See Section 2.3
TA-48-1-BS-1	Boiler	No	-	-	-	-	-	See Section 2.3
TA-48-1-BS-2	Boiler	No	-	-	-	-	-	See Section 2.3
TA-48-1-BS-6	Boiler	No	-	-	-	-	-	See Section 2.3
TA-53-365-BHW-1	Boiler	No	-	-	-	-	-	See Section 2.3
TA-53-365-BHW-2	Boiler	No	-	-	-	-	-	See Section 2.3
TA-55-6-BHW-1	Low NO_x Boiler	No	-	-	-	-	-	See Section 2.3
TA-55-6-BHW-2	Los NO_x Boiler	No	-	-	-	-	-	See Section 2.3

Emission Unit No.[63]	Process or Operation [64]	Is Air Pollution Control Equipment Installed (Yes/No) [65]	Air Pollution Control Equipment No.[66]	AIR POLLUTION CONTROL EQUIPMENT DATA		AIR POLLUTION CONTROL EQUIPMENT EFFICIENCY DATA		Applicable Requirements for this Process and/or Control [67]
				Equipment Type [68]	Manufacturer and Model No. [69]	% by Weight [70]	Method of Determination [71]	
TA-59-1-BHW-1	Boiler	No	-	-	-	-	-	See Section 2.3
TA-59-1-BHW-2	Boiler	No	-	-	-	-	-	See Section 2.3
TA-50-2-BS-1	Boiler	No	-	-	-	-	-	See Section 2.3
N/A	Remaining Exempt Boilers and Process Heaters	No	-	-	-	-	-	See Section 2.3
TA-3-22-1 TA-3-22-2 TA-3-22-3	Power Plant Boilers	Yes	1	Flue Gas Recirculation Fans	Robinson Industries	Average 64% reduction of NO_x	2002 Source Test	See Section 2.9
TA-3-22-CT-1	Combustion Turbine	No	-	-	-	-	-	See Section 2.9
TA-33-G-1	Diesel Generator	No	-	-	-	-	-	See Section 2.7
TA-33-G-2	Diesel Generator	No	-	-	-	-	-	See Section 2.7
TA-33-G-3	Diesel Generator	No	-	-	-	-	-	See Section 2.7
TA-33-G-4	Diesel Generator	No	-	-	-	-	-	See Section 2.7
TA-15-563	Carpenter Shop	No	-	-	-	-	-	See Section 2.4
TA-3-38	Carpenter Shop	No	-	-	-	-	-	See Section 2.4
TA-55-DG-1	Degreaser	No	-	-	-	-	-	See Section 2.6
TA-52-11	Data Disintegrator	Yes	1	Cyclone	Security Engineered Machinery	75%	Manufactures Rating	See Section 2.8
			2	Cloth Tube Filter	Security Engineered Machinery	95%	Manufactures Rating	See Section 2.8

SECTION 7 - AIR POLLUTION EMISSION RATES [72]: (20.2.70.300.D.5.c NMAC)

(List all Air pollution units of plant, including the units listed in Sections 3 thru 6, and tank-flashing emissions estimates.) (Use additional sheets if necessary)

Emission Unit No.[73]	ALLOWABLE AIR POLLUTANT EMISSION RATES (after control equipment) [74]											
	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Volatile Organic Compounds (VOC)		Sulfur Dioxide (SO_2)		Particulate Matter < 10 (PM_{10})		Particulate Matter < 2.5 ($PM_{2.5}$)	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY
Asphalt Production TA-60-BDM	-	1.0	-	2.6	-	1.0	-	1.0	33.8	-	-	-
Sigma Facility TA-3-66	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium Test Facility TA-3-141	-	-	-	-	-	-	-	-	-	-	-	-
TA-16-207	-	-	-	-	-	-	-	-	-	-	-	-
TA-35-87	-	-	-	-	-	-	-	-	-	-	-	-
Target Fabrication TA-35-213	-	-	-	-	-	-	-	-	-	-	-	-
Plutonium Facility TA-55-PF4	-	-	-	-	-	-	-	-	-	-	-	-
TA-16-1484-BS-1 TA-16-1484-BS-2 TA-48-1-BS-1 TA-48-1-BS-2 TA-48-1-BS-6 TA-53-365-BHW-1 TA-53-365-BHW-2 TA-55-6-BHW-1 TA-55-6-BHW-2 TA-59-1-BHW-1 TA-59-1-BHW-2 TA-50-2-BS-1 All other boilers	-	80.0	-	80.0	-	50.0	-	50	-	50.0	-	50.0
TA-3-22-1 TA-3-22-2 TA-3-22-3	10.2/11.3[(h)]	99.6[(i)]	7.0/6.5[(h)]	-	1.0/0.3[(h)]	-	1.1/9.6[(h)]	-	1.3/3.0[(h)]	-	-	-

Emission Unit No.[73]	ALLOWABLE AIR POLLUTANT EMISSION RATES (after control equipment) [74]											
	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Volatile Organic Compounds (VOC)		Sulfur Dioxide (SO_2)		Particulate Matter < 10 (PM_{10})		Particulate Matter < 2.5 ($PM_{2.5}$)	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY
TA-3-22 Boilers Combined	-	60.2	-	41.3	-	5.6	-	7.9	-	8.2	-	-
TA-3-22-CT-1	23.8	33.2	170.9	19.8	1.0	-	1.4	1.9	1.6	2.3	-	-
TA-33-G-1	40.3	18.1	33.7	15.2	0.7	0.3	5.5	2.5	1.4	0.6	-	-
TA-33-G-2	0.83	0.21	0.2	0.1	0.1	-	-	-	-	-	-	-
TA-33-G-3	0.83	0.21	0.2	0.1	0.1	-	-	-	-	-	-	-
TA-33-G-4	9.33	2.33	5.7	1.4	0.75	0.2	0.62	0.16	-	-	-	-
TA-15-563	-	-	-	-	-	-	-	-	-	2.81	-	-
TA-3-38	-	-	-	-	-	-	-	-	-	3.07	-	-
TA-55-DG-1	-	-	-	-	-	-	-	-	-	-	-	-
TA-52-11	-	-	-	-	-	-	-	-	2.3	9.9	-	-
Facility-wide	-	245	-	225	-	200	-	150	-	120	-	120
Totals[j]	-	-	-	-	-	-	-	-	-	-	-	-

SECTION 7, Continued - AIR POLLUTION EMISSION RATES [75]: (20.2.70.300.D.5.c NMAC)
(List all Air pollution units of plant, including the units listed in Sections 3 thru 6, and tank-flashing emissions estimates.) (Use additional sheets if necessary)

Emission Unit No.[76]	ALLOWABLE AIR POLLUTANT EMISSION RATES (after control equipment) [77]											
	Total HAPs		Formaldehyde		n-Hexane		Benzene		Toluene		Beryllium	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY		
TA-60-BDM	-	-	-	-	-	-	-	-	-	-	-	-
Sigma Facility TA-3-66	-	-	-	-	-	-	-	-	-	-	10 gm/24hr	-
Beryllium Test Facility TA-3-141	-	-	-	-	-	-	-	-	-	-	0.35 gm/24hr	3.5 gm/yr
TA-16-207	-	-	-	-	-	-	-	-	-	-	10 gm/24hr	-
TA-35-87	-	-	-	-	-	-	-	-	-	-	10 gm/24hr	-
Target Fabrication TA-35-213	-	-	-	-	-	-	-	-	-	-	0.00018 gm/hr	0.36 gm/yr
Plutonium Facility TA-55-PF4	-	-	-	-	-	-	-	-	-	-	0.12 gm/24hr	2.99 gm/yr
TA-16-1484-BS-1 TA-16-1484-BS-2 TA-48-1-BS-1 TA-48-1-BS-2 TA-48-1-BS-6 TA-53-365-BHW-1 TA-53-365-BHW-2 TA-55-6-BHW-1 TA-55-6-BHW-2 TA-59-1-BHW-1 TA-59-1-BHW-2 TA-50-2-BS-1 All other boilers	-	-	-	-	-	-	-	-	-	-	-	-
TA-3-22-1 TA-3-22-2 TA-3-22-3	-	-	-	-	-	-	-	-	-	-	-	-

Emission Unit No.[76]	ALLOWABLE AIR POLLUTANT EMISSION RATES (after control equipment) [77]											
	Total HAPs		Formaldehyde		n-Hexane		Benzene		Toluene		Beryllium	
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY		
TA-3-22 Boilers Combined	-	-	-	-	-	-	-	-	-	-	-	-
TA-3-22-CT-1	-	-	-	-	-	-	-	-	-	-	-	-
TA-33-G-1	-	-	-	-	-	-	-	-	-	-	-	-
TA-33-G-2	-	-	-	-	-	-	-	-	-	-	-	-
TA-33-G-3	-	-	-	-	-	-	-	-	-	-	-	-
TA-33-G-4	-	-	-	-	-	-	-	-	-	-	-	-
TA-15-563	-	-	-	-	-	-	-	-	-	-	-	-
TA-3-38	-	-	-	-	-	-	-	-	-	-	-	-
TA-55-DG-1	-	-	-	-	-	-	-	-	-	-	-	-
TA-52-11	-	-	-	-	-	-	-	-	-	-	-	-
Facility-wide	-	24 combined HAPs 8 any single HAP	-	-	-	-	-	-	-	-	-	-
Totals[j]	-	-	-	-	-	-	-	-	-	-	-	-

SECTION 7, Continued - AIR POLLUTION EMISSION RATES [78]: (20.2.70.300.D.5.c NMAC)
(List all Air pollution units of plant, including the units listed in Sections 3 thru 6, and tank-flashing emissions estimates.) (Use additional sheets if necessary)

Emission Unit No.[79]	ALLOWABLE AIR POLLUTANT EMISSION RATES (after control equipment) [80]											
	Aluminum											
	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY	PPH	TPY
Plutonium Facility TA-55-PF4	0.12 gm/24hr	2.99 gm/yr	-	-	-	-	-	-	-	-	-	-
Totals[j]												

SECTION 8 - STACK PARAMETERS [81]: (20.2.70.300.D.5.h NMAC)
(Complete this section for all regulated equipment vented to a stack) (Use additional sheets if necessary)

Stack No. [82]	Emission Unit No. [83]	Stack Height (ft) [84]	Stack Inside Exit Diameter (ft) [85]	Stack Direction [86]	STACK EXIT GAS CONDITIONS [87]			
					Temp. (ºF)	Velocity (ft/sec) [88]	Flow Rate (ft^3/sec) [89]	Moisture % by Vol
1	TA-60-BDM	20.0	24” x 21 in Square	Vertical	300.2	124.3	-	-
FE-1	Sigma Facility TA-3-66						-	-
1	Beryllium Test Facility TA-3-141	50	5	Vertical	70	47.0	-	1.0
	TA-16-207	N/A	-	-	-	-	-	-
	TA-35-87	N/A	-	-	-	-	-	-
1	Target Fabrication TA-35-213	71	1.0	Vertical	70	38.3	-	1.28
North	Plutonium Facility TA-55-PF4	50.0	30” x 48” Square	Vertical	72	28.9	-	-
1	TA-3-22-1 TA-3-22-2	68.0	7.7	Vertical	415.4	57.2	-	-
2	TA-3-22-3	68.0	7.7	Vertical	415.4	28.6	-	-
3	TA-3-22-CT-1	58.4	10 feet square	Vertical	921	73.6	-	-
							-	

Stack No. [82]	Emission Unit No. [83]	Stack Height (ft) [84]	Stack Inside Exit Diameter (ft) [85]	Stack Direction [86]	STACK EXIT GAS CONDITIONS [87]			
					Temp. (ºF)	Velocity (ft/sec) [88]	Flow Rate (ft^3/sec) [89]	Moisture % by Vol
1	TA-33-G-1	60.0	1.33	Vertical	851.0	170.6	-	-
1	TA-33-G-2	2.0	1.0[k]	Horizontal	1000.4	0[j]	-	-
1	TA-33-G-3	2.0	1.0[k]	Horizontal	1000.4	0[j]	-	-
1	TA-33-G-4	8.7	0.43	Vertical	980.6	210.0	-	-
1	TA-15-563	36.1	0.8	Vertical	69.8	28.2	-	-
1	TA-3-38	20.0	3.0	Vertical	69.8	0.0	-	-
South	TA-55-DG-1	50.0	30” x 48” Square	Vertical	72	28.9	-	-
1	TA-52-11	25.9	3.28	Vertical	69.8	0.0	-	-

SECTION 9 - COMPLIANCE MONITORING DEVICES AND EQUIPMENT[90]: (20.2.70.300.D.5.e NMAC) (Use additional sheets if necessary)

Monitor Unit No. [91]	Parameter To Be Monitored [92]	Pollutant To Be Monitored or Measured [93]	Type of Monitor or Instrument [94]	Monitor Manufacturer and Model Number	Range [95]	Sensitivity [96]	Accuracy [97]	Monitored Emission Unit No. [98]	Location of Monitor [99]
1	Particulate Emissions	Beryllium	Continuous Air Monitor (CAM)	Graseby Anderson Model RF-02-111	N/A	0.005µg	approx. 20%	TA-3-141	Sampling probe located on exhaust stack, filter sent to lab weekly
1	Fuel Flow	N/A	Volumetric Flow Meter	Equimeter Model 4" T-18 MK II	0-9,999,999 ft^3	1 ft^3	1%	TA-55-6-BHW-1	Fuel Inlet 12 feet from burners. Readings taken monthly
1	Fuel Flow	N/A	Volumetric Flow Meter	Equimeter Model 4" T-18 MK II	0-9,999,999 ft^3	1 ft^3	1%	TA-55-6-BHW-2	Fuel Inlet 12 feet from burners. Readings taken monthly
1	Natural Gas Fuel Flow	N/A	Volumetric Flow Meter	ABB/Bailey/Fisher & Porter Model 10SM1000 Swirlmeter and 50VM1000 Vortex 4 Flow Computer	3-210 kSCF/hr	0.02 kSCF/hr	0.5%	TA-3-22-1 TA-3-22-2 TA-3-22-3	Fuel Inlet 40 feet prior to burners, recorder in control room
2	No. 2 Fuel Oil Fuel Flow	N/A	Volumetric Flow Meter	Bailey Model BQ74221	4-1576 gal/hr	2 gal/hr	5%	TA-3-22-1 TA-3-22-2 TA-3-22-3	Fuel Inlet 10 feet prior to burners, recorder in control room
1	Kilowatt/hours	N/A	Kilowatt-hour Meter	Square-d CM-4000 Circuit Monitor (PowerLogic)	-	-	0.001kWH	TA-33-G-1	Switchgear enclosure
	Hours	N/A	Hour Meter	Various	-	-	-	TA-33-G-2 TA-33-G-3 TA-33-G-4	On Generator

SECTION 10 - STRATOSPHERIC OZONE PROTECTION PROGRAM (Title VI, Clean Air Act Amendments)
Please answer the following questions to determine the applicability of 40 CFR 82, Subparts A through G, to your facility.

1. Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substances? ___X___yes _____no

2. Does any air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs? ____X_____yes _____ no (If the answer is yes, describe what type of equipment and how many units are at the facility.)

Refrigerant Type	Number of Units [1]
CFC-11	3
CFC-12	10
HCFC-123	25
HCFC-22	172
HFC-134A	20
R-401A	4
R-401B	1
R-404A	1
R-502	4
R-507A	2

[1] The number of units will change due to retrofitting, replacements, and disposals and should be considered estimates.

3. Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 82. 152)? ___X___ yes _____no

4. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40CFR Part 82, Subpart A through G.)

   40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners
   40 CFR Part 82, Subpart F, Recycling and Emissions Reduction
   40 CFR Part 82, Subpart H, Halon Emissions Reduction

SECTION 11 - CERTIFICATION[100]

I, Richard Watkins, hereby certify on behalf of Los Alamos National Security, LLC, that the information and data submitted in this application package (Elements 1 through 23, and any additional information provided in the application package) are as complete, true and accurate as possible, to the best of my personal knowledge and professional expertise and experience.

Signed this 7th day of April, 2008, upon my oath of affirmation, before a notary of the State of New Mexico .

_____ _____

SIGNATURE (Richard Watkins) DATE

Richard Watkins	Associate Director, ESH&Q	Los Alamos National Security
PRINTED NAME	Title	Company

Subscribed and sworn to before me on this _____ day of _____, 20_____.

My authorization as a Notary of the State of _____ expires on the _____ day of _____, 20_____.

_____ _____

NOTARY'S SIGNATURE DATE

_____ _____

NOTARY'S PRINTED NAME NOTARY SEAL

FOOTNOTES FOR LANL OPERATING PERMIT RENEWAL APPLICATION FORMS

(a) LANL does not process raw materials.

(b) There are no tanks at LANL that have applicable requirements. All tanks at LANL are insignificant activities.

(c) There are no material storage areas at LANL that have applicable requirements.

(d) Permit Condition 2.3.3.1 from P100M1 LANL Operating Permit

(e) These boilers and process heaters are exempted as insignificant activities, but are listed to show that the gas usage limit of 870 MMscf/yr takes into account these units as well as the remaining boilers and heaters from Section 2.3.

(f) Filters are purchased on a contractual basis. Contracts are awarded using cost and specification considerations. All HEPA filters must have a manufactures filtration efficiency rating of 99.97. Control efficiency for HEPA filters is 99.95 as measured particle filter efficiency testing. The discrepancy between manufactures filtration efficiency and installed efficiency rating is due to a small amount of leakage around the seal of an installed filter. The following is a list of some of the manufactures currently providing filters to the Laboratory: Cambridge, Cam-Farr, Flanders, Donaldson; and American Air. Model numbers will vary between manufacturer and change as new models are introduced.

(g) Operations are not emitted into the air.

(h) Natural Gas/Fuel Oil.

(i) Natural gas and Fuel oil combined.

(j) Total emissions are not calculated because LANL has facility-wide emission limits on criteria and HAP emissions.

(k) Default values (NMED modeling guidelines for horizontal stacks).

If additional space is required for any item, please use a separate sheet of paper and clearly identify to which item the information pertains. The electronic form will expand and the pages will be renumber as needed.

[2] "Company" means the name by which this organization conducts business in New Mexico.

[3] "Owner" as defined in 20.2.70.300.D.2 NMAC.

[4] "Plant or Facility Name" means the name by which the company identifies this particular facility.

[5] "Operator of Plant" as defined in 20.2.70.300.D.2 NMAC.

[6] "Responsible Official" as defined in 20.2.70.300.D.2 NMAC.

[7] "Person to contact at the site" means the person who is knowledgeable about the permit and who is normally present at the plant site during normal business hours. This person's name will be retained by the Bureau for future contacts concerning this facility.

[8] "Company Air Permit Contact" means a company official, or an individual who is authorized by the company, who knows about the air quality permit applicability and requirements including the air pollution sources and emissions estimation calculations, etc.

[9] Please list the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship.

[10] "Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.

[11] "Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.

[12] Specify why this source must have an 20.2.70 NMAC operating permit--is it: a major source; subject to section 111 or section 112 of the federal Act; an acid rain source; or in a source category designated by the Administrator. See "Who Must Apply" section of this application package and 20.2.70.201NMAC for details.

[13] "Permanent Source" means a source, which operates at least 12 months or more at this site.

[14] See 20.2.70.7 NMAC. for the definition of this term. For portable or moveable equipment include serial numbers or other positive means of identification of that particular set of equipment. Include the Standard Industrial Classification (SIC) codes for the type of plant. 20.2.70 NMAC permits may be obtained for portable operations such as asphalt concrete plants, portable internal combustion or turbine engines, rock crushers and other types of portable equipment. There will be procedures placed in the permit relating to notification of the Bureau by the permittee prior to relocation.

[15] Describe the primary products of this plant; the raw materials used; and the process(es) used to transform the raw materials into the final product.

[16] SIC codes are Standard Industrial Classification codes. Give SIC code for plant primary process.

[17] SIC codes are Standard Industrial Classification codes. Give SIC code for plant secondary process (if any).

[18] Alternative operating scenarios are changes in process, materials, operations or products. See 20.2.70.300.D.5.i NMAC for more information.

[19] Plant's maximum allowable capacity is the greatest allowable production rate of the plant. The hourly or daily capacity as well as the annual capacity should be stated. How these numbers were determined should also be stated. Example: they might be based on the federally enforceable limits placed on the plant by the conditions of this permit and its 20.2.72 NMAC permit, the design capacity of the plant operating at 8760 hours per year, or a specified applicable requirement. The plant capacity will be a condition of the permit and used to evaluate future modifications to the permit and to determine the emissions fee.

[20] Provide either the UTM coordinates or the longitude and latitude for your facility. It is also acceptable to provide both.

[21] State the distance, in meters, from the nearest plant boundary to the closet residence, school or other occupied structure. The plant boundary is the point at which public access to the plant is restricted. This restriction may be a fence, a wall etc.

[22] 20.2.70.300.D.4NMAC requires that this application be accompanied by a U.S. Dept. of the Interior Geological Survey topographic quadrangle map or equivalent showing the exact location of the plant site or modification. A 7.5-minute topographic quadrangle map is suggested.

[23] Sections 2A and 2B: Raw Materials Processed and Materials Produced This section addresses any feed stocks or raw materials used in the plant process, and materials or products (not including solid or liquid waste products) that are generated. As an example, sour natural gas is the raw material and sweet pipeline quality gas and natural gas liquids are the products. Some unit numbers will correspond to process equipment, as for example where a stream is "refined", such as sour gas to sweet gas, or rock crushing with rock aggregate feed and various products are produced in stages (crushers, screens). Calculations made to determine the values shown on the form are to be shown and referenced in Package Element-5 (Emissions Calculations).

[24] (These apply to both 2A and 2B) Corresponding to emissions, process or operational unit numbers as shown in Package Element-4 (Process Flow Sheets).

[25] What are the raw materials of this plant? Example: crude oil, sour gas, raw ore, etc.

[26] List each component with weight percentages and chemical compositions (if known), or attach separate analysis sheet.

[27] Provide typical particle size distribution for aggregates, pumice dust, etc. and average moisture content. State how moisture content was determined.

[28] Barrels per day, thousands of standard cubic feet per day, tons per hour, etc. Reference process flow sheets requires in Package Element-S, including material balances. For emission purposes, maximum values are more appropriate than average quantities.

[29] What are the finished products of this plant? Example: gasoline, diesel fuel, sweet gas, etc.

[30] Section 3A: Liquid Storage Tanks - Material Data This section is used to describe any liquid materials that are stored at the plant and are sources of gaseous emissions. This includes raw feed stocks, and intermediate and final product storage. If your plant has no tanks which to store petroleum based liquids, volatile organic compounds, or other toxic or hazardous materials, write "NA" on the top of the form. This information is requested for the calculation and characterization of fugitive emissions. EPA's reference AP-42 Section 12 lists reference data for liquid storage tanks. The emissions data for the tanks should be provided in Sections 6 and 7 of this application form.

[31] The tank number to be assigned by applicant for each tank. Give a unique tank number for each tank. These are

the same numbers as are used in Package Element-4 (Process Flow Sheets) to identify each tank.

[32] Give the trade name or commonly used name for the liquid stored in the tanks. Example: Stoddard Solvent, fuel oil. If the tank is used to store more than one material, use a separate line for each material and provide all the requested date for each material.

[33] Identify each component (including sulfur) and give its weight percent. If space is insufficient, attach analysis sheet. The material name and tank number should be clearly identified on any attachments.

[32a] Source Classification Code: each equipment unit, control device or emission unit shall be identified by an individual code. See Link to US EPA SCC codes. http://www.epa.gov/ttn/chief/codes/index.html#scc

[34] Section 3B: Liquid Storage Tanks - Tank Data
Use tank number(s) from Section 3A.

[35] Date (mo/yr) tank was originally installed or constructed. If the tank was later modified or reconstructed, provide the date this work was done and attach a separated description of the modifications or reconstruction.

[36] Use the following abbreviations: Fixed Roof--FX, lnternal Floating Roof--IF, External Floating Roof--EF, Pressure--P.

[37] Select the appropriate number and letter from the following list that describes the tank and seal type (Example: "2b" indicates welded tank, liquid mounted resilient seal with weather shield);
Note: For pressure tanks, enter control pressure (in psia).

WELDED TANK SEALS

1. Mechanical shoe	2. Liquid mounted resilient	3. Vapor mounted resilient
a. Primary only	a. Primary only	a. Primary only
b. Shoe mounted secondary	b. Weather shield	b. Weather shield
c. Rim mounted secondary	c. Rim mounted secondary	c. Rim mounted secondary

RIVETED TANK
4. Mechanical shoe seal
   a. Primary only
   b. Shoe mounted secondary
   c. Rim mounted secondary

[38] This applies to raised roof tanks only. Give the average distance from liquid surface to tank roof. For all other tanks, write "NA".

[39] Use the following abbreviations: White--WH, Aluminum (specular--AS, Aluminum (diffuse)--AD, Light Gray--LG, Medium Gray--MG, Black--BL, Other--OT.

[40] Describe the condition of the paint on the tank as either 'Good' or 'Poor'.

[41] Describe the condition of the paint on the tank as either 'Good' or 'Poor'.

[42] Turnover= annual throughput (gal)
tank capacity (gal)

[43] Section 4A: Solid Material Storage- Material Data
This section is used to describe any solid stored material used in the plant process, which are sources of particulate emissions. This includes raw feed stocks, intermediate and final product storage. If there is no solid material storage at the plant, write "NA" at the top of the form. Emissions data for solid material that is stored on the plant site should

be provided in Sections 6 and 7.

[44] Individual storage unit numbers are assigned by the applicant in Package Element-4 (process Flow Sheets). These same unit numbers are used in this Section and in Sections 6 and 7 to identify the storage units.

[45] State which process, operation or emissions unit is served and whether transfer equipment is used. Example: open feed conveyor.

[46] Examples of storage type: silo, open pile, shed, enclosed building, enclosed weigh bin or surge bin.

[47] Give the chemical composition of the material being stored. If space is insufficient, attach analysis sheet. The material name and storage unit number should be identified clearly in any attachments.

[48] Section 4B: Solid Material Storage - Storage Data This section is used to describe the transfer of solid material in the facility process or operation, if emissions result.

[49] Use the same storage unit numbers in Section 4A.

[50] Examples of transfer or transport method:

Incoming: how material is loaded into the storage unit. Example: truck, rail car, front-end loader.

Outgoing: how material is moved from the storage area to the process area. Example: closed pneumatic feed, closed gravity feed, open gravity feed, enclosed screw conveyor, front end loader, open or enclosed belt conveyor, truck.

[51] State what kinds of dust-control methods are used in the storage or transfer of material. Example: silo bin filters, telescoping stacker chutes, enclosures, dust pickup to baghouse etc. If the storage unit is equipped with a stack, provide the stack parameters in Section 8 (Stack Parameters). Stack data shall be provided at all times.

[52] Section 5: Fuel Usage and Fuel Data This section provides information on all the fuel usage for all process equipment at the facility. Flares and waste burners are not listed here unless supplemental fuel is used to sustain combustion. In that case, only the supplemental or auxiliary fuel data is given here.
A material balance for combustion within the plant is required to complete this Section and should be attached to this Section. Show calculations in Package Element -- 5.

Only equipment that uses fuel is listed in this section and/or that are subject to a MACT or NSPS.

[53] Corresponding to emissions, process, or operational unit numbers as shown in Package Element --- 4 (Process Flow Sheets).

[54] State the type of equipment - e g. Boiler, diesel engine, furnace, gas engine, gas turbine, oven, space heater, etc.

Dehydrators should be represented as Unit XXXA, Deyh Still Vent/flash tank, and Unit XXXB, Dehy Reboiler. Stack data for both units shall be submitted. If the reboiler is normally considered as exempt/insignificant with emissions less than 1 tpy, but the Still Vent is subject to a MACT/NSPS, then the reboiler can not be exempt, since the MACT/NSPS applies to the entire dehydrator.

Non-fuel consuming equipment subject to MACT/NSPS requirements shall be listed and given an emissions unit number.

[55] Provide the maximum nameplate rate and the normal rate, if these rates are different, e.g. million btu/hr, HP etc. If these rates have been adjusted for altitude, this should be noted on the form. Use manufacturer's published derating procedures, and provide documentation.

[56] If auxiliary fuel or different fuel is used "on standby", the data for that fuel must also be provided.

[55a] Source Classification Code: each equipment unit, control device or emission unit shall be identified by an individual code. See Link to US EPA SCC codes

[57] Type of Fuel - e.g. Pipeline quality natural gas, LPG; No. 1,2,4, or 6 fuel oil; refinery gas; coal; wood; etc.

[58] Use the following units depending on the fuel type: Million cubic feet of gas; gallons of fuel oil; pounds of LPG; etc. State what units you are using.

[59] Use the following units depending on the fuel type: Btu/standard cubic foot for gas, Btu/lb for solid fuel, or Btu/gallon for liquid fuel.

[60] State both maximum percentage by weight and average percentage by weight. Sulfur content is not required if sweet pipeline quality natural gas is used as the fuel. Specify in "fuel type" that sweet pipeline quality gas is used and state specification under "sulfur". Provide fuel supplier specifications for sulfur content.

[61] State both maximum percentage by weight and average percentage by weight. Ash content is not required if sweet pipeline quality natural gas is used as the fuel.

[62] Section 6: Air Pollution Units and Control Equipment Data Each piece of equipment in the facility that emits any type of air pollutant must be listed in this section. The type of air pollutants shall include all regulated air pollutants; all fugitive emissions; and any hazardous or toxic air contaminants emitted at the facility. Do not include equipment or emissions listed in the List of Insignificant Activities. Also list air pollution control equipment, waste abatement equipment, process control capture equipment. Give efficiency data and efficiency determination methods for all these units.

[63] Use the process or operation equipment unit numbers that were assigned to each piece of equipment in Package Element - 4 (Process Flow Sheets). For fugitive emissions, describe the source of the emissions. For liquid tank and solid material storage, use the tank or storage unit number.

[64] Give process or Operation of this Unit. Example: boiler, catalyst regeneration units, flare, furnace, gas engine, iron melting cupola, material dryer, process fugitive, silo, smelter furnace, solvent cleaner, storage tanks, etc.

[65] Indicate 'Yes' if air pollution control equipment is installed, and provide control information in the following columns, and give controlled/allowable emission rates in Section 7.

[66] Identify each air pollution control equipment with a number that corresponds to the identification in Package Element-5.

[67] Specify the requirement(s) that is (are) applicable to this process, operation or emission unit. See 20.2.70 NMAC for list of applicable requirements. Example: 20.2.71.X.X NMAC; NSPS Subpart GG Paragraph x.x; 20.2.72 NMAC, Permit Condition x.x etc. Be as specific as possible. If there is insufficient room on the form, please attach a clearly identified additional sheet.

[68] Such as baghouse, cyclone separator, electrostatic precipitator, enclosures, scrubber, VOC incinerator, etc.

[69] Give air pollution control equipment manufacturer's name, model no., and serial no.

[70] Identify each pollutant by name which can be controlled by this control equipment, and give capture efficiency of this control equipment on each of these pollutants in % by weight.

[71] Field test results, manufacturer's data etc. Specify how the quantity of emitted pollutant was determined: from actual measurement (specify equipment used) of emissions (preferred), process material balances, equipment manufacturer's information, EPA emission factor, or other source. Show the calculations used to obtain the emission rates as stated in Package Element-5 (Emissions Calculations).

[72] Section 7: Air Pollution Emission Rates: List all emissions units given in the Section 6. For all these units give air pollutant emissions that are to be allowed by the permit.

The allowable emissions are the emissions released to the atmosphere from each air pollution source (or unit). Provide emissions rates from air pollution control equipment, waste abatement equipment, process control capture equipment, and from uncontrolled processes, operations or activities. These emissions are: pollutants for which the source is major, regulated air pollutants, and any hazardous or toxic air contaminants emitted as part of plant processes. Emissions from flares, sulfur recovery units, VOC incinerators, and wood waste burners must also be listed. These emissions shall also include fugitive process emissions and other fugitive or indirect emissions resulting from activities of this facility. Example: fugitive dust from haul roads that are a part of a process such as crushing or mining operations. Do not include emissions from Insignificant Activity Units (see Package Element - 10). Calculations made to determine the values shown on the form are to be shown and referenced in Package Element-5 (Emissions Calculations).

Enter tank-flashing emissions data (separate from other VOC entries) in section 7 with all supporting calculation in Element 5. The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

Sufficient information must be included for the department to evaluate, and verify, the process of operation, and emission rates for emission sources (or emission units), control equipment and stated control efficiencies of the control equipment involved. Include manufacturer's published emission data, control efficiency data, or test data in support of your calculations. Process flow sheets and other references are required, and attach any equipment layout and assembly drawings as necessary to describe all air pollution control equipment as stated in Package Element-4.

[73] List all emission units, including the units listed in Sections 3 thru 6. If multiple process units (with individual numbers) discharge to one control equipment unit, identify and group all those emission units on one line. For liquid tank and solid material storage, use the tank or storage unit number. Emissions from units that are alike or similar may be consolidated if there is no applicable requirement and emissions are calculated with the same emission factors.

[74] Pollutant: Identify each pollutant defined by EPA to be a regulated air pollutant that this source emits. Provide trade name or common name and chemical composition of the pollutant. Example: Particulate matter (PT), Particulate Matter under 10-micron size (PM_{10}), Particulate Matter under 2.5-micron size ($PM_{2.5}$),Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Hydrogen Sulfide (H2S), Nitrogen Oxides (NOx) (as nitrogen dioxide).etc. For Hazardous Air Pollutants (HAPS) provide CAS number also. "Allowable" values are based on maximum allowable production rates. List emissions rates in both pounds per hour and tons per year. Show any other emissions rates prescribed by applicable requirements. Yearly values are based on 8760 hours per year unless the applicant desires to restrict hours of operation as a permit condition. If the emission rate is limited by a federally enforceable applicable requirement, then provide the value of this rate. State on Section 7 form AND in Element 5, whether the VOC emission rate includes the HAPS or not. Specifically identify all HAPS that are not VOCs.

[75] Section 7: Air Pollution Emission Rates: List all emissions units given in the Section 6. For all these units give air pollutant emissions that are to be allowed by the permit.

The allowable emissions are the emissions released to the atmosphere from each air pollution source (or unit). Provide emissions rates from air pollution control equipment, waste abatement equipment, process control capture equipment, and from uncontrolled processes, operations or activities. These emissions are: pollutants for which the source is major, regulated air pollutants, and any hazardous or toxic air contaminants emitted as part of plant processes. Emissions from flares, sulfur recovery units, VOC incinerators, and wood waste burners must also be listed. These emissions shall also include fugitive process emissions and other fugitive or indirect emissions

resulting from activities of this facility. Example: fugitive dust from haul roads that are a part of a process such as crushing or mining operations. Do not include emissions from Insignificant Activity Units (see Package Element - 10). Calculations made to determine the values shown on the form are to be shown and referenced in Package Element-5 (Emissions Calculations).

Enter tank-flashing emissions data (separate from other VOC entries) in section 7 with all supporting calculation in Element 5. The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

Sufficient information must be included for the department to evaluate, and verify, the process of operation, and emission rates for emission sources (or emission units), control equipment and stated control efficiencies of the control equipment involved. Include manufacturer's published emission data, control efficiency data, or test data in support of your calculations. Process flow sheets and other references are required, and attach any equipment layout and assembly drawings as necessary to describe all air pollution control equipment as stated in Package Element-4.

[76] List all emission units, including the units listed in Sections 3 thru 6. If multiple process units (with individual numbers) discharge to one control equipment unit, identify and group all those emission units on one line. For liquid tank and solid material storage, use the tank or storage unit number. Emissions from units that are alike or similar may be consolidated if there is no applicable requirement and emissions are calculated with the same emission factors.

[77] Pollutant: Identify each pollutant defined by EPA to be a regulated air pollutant that this source emits. Provide trade name or common name and chemical composition of the pollutant. Example: Particulate matter (PT), Particulate Matter under 10-micron size (PM_{10}), Particulate Matter under 2.5-micron size ($PM_{2.5}$),Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Hydrogen Sulfide (H2S), Nitrogen Oxides (NOx) (as nitrogen dioxide).etc. For Hazardous Air Pollutants (HAPS) provide CAS number also. "Allowable" values are based on maximum allowable production rates. List emissions rates in both pounds per hour and tons per year. Show any other emissions rates prescribed by applicable requirements. Yearly values are based on 8760 hours per year unless the applicant desires to restrict hours of operation as a permit condition. If the emission rate is limited by a federally enforceable applicable requirement, then provide the value of this rate. State on Section 7 form AND in Element 5, whether the VOC emission rate includes the HAPS or not. Specifically identify all HAPS that are not VOCs.

[78] Section 7: Air Pollution Emission Rates: List all emissions units given in the Section 6. For all these units give air pollutant emissions that are to be allowed by the permit.

The allowable emissions are the emissions released to the atmosphere from each air pollution source (or unit). Provide emissions rates from air pollution control equipment, waste abatement equipment, process control capture equipment, and from uncontrolled processes, operations or activities. These emissions are: pollutants for which the source is major, regulated air pollutants, and any hazardous or toxic air contaminants emitted as part of plant processes. Emissions from flares, sulfur recovery units, VOC incinerators, and wood waste burners must also be listed. These emissions shall also include fugitive process emissions and other fugitive or indirect emissions resulting from activities of this facility. Example: fugitive dust from haul roads that are a part of a process such as crushing or mining operations. Do not include emissions from Insignificant Activity Units (see Package Element - 10). Calculations made to determine the values shown on the form are to be shown and referenced in Package Element-5 (Emissions Calculations).

Enter tank-flashing emissions data (separate from other VOC entries) in section 7 with all supporting calculation in Element 5. The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

Sufficient information must be included for the department to evaluate, and verify, the process of operation, and emission rates for emission sources (or emission units), control equipment and stated control efficiencies of the control equipment involved. Include manufacturer's published emission data, control efficiency data, or test data in support of your calculations. Process flow sheets and other references are required, and attach any equipment layout and assembly drawings as necessary to describe all air pollution control equipment as stated in Package Element-4.

[79] List all emission units, including the units listed in Sections 3 thru 6. If multiple process units (with individual numbers) discharge to one control equipment unit, identify and group all those emission units on one line. For liquid tank and solid material storage, use the tank or storage unit number. Emissions from units that are alike or similar may be consolidated if there is no applicable requirement and emissions are calculated with the same emission factors.

[80] Pollutant: Identify each pollutant defined by EPA to be a regulated air pollutant that this source emits. Provide trade name or common name and chemical composition of the pollutant. Example: Particulate matter (PT), Particulate Matter under 10-micron size (PM-10), Particulate Matter under 2.5-micron size (PM-2.5),Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Hydrogen Sulfide (H2S), Nitrogen Oxides (NOx) (as nitrogen dioxide).etc. For Hazardous Air Pollutants (HAPS) provide CAS number also. "Allowable" values are based on maximum allowable production rates. List emissions rates in both pounds per hour and tons per year. Show any other emissions rates prescribed by applicable requirements. Yearly values are based on 8760 hours per year unless the applicant desires to restrict hours of operation as a permit condition. If the emission rate is limited by a federally enforceable applicable requirement, then provide the value of this rate. State on Section 7 form AND in Element 5, whether the VOC emission rate includes the HAPS or not. Specifically identify all HAPS that are not VOCs.

[81] Section 8: Stack Parameters This section must be completed for all submittals. Note if information is updated. All equipment onsite that has a stack shall be listed, including insignificant activities.

[82] Use stack number from Package Element-4 (Process Flow Sheets). If there is a release point with no stack, state the location of the release point.

[83] If one stack serves multiple processes, operations, or emissions units, provide unit numbers for all emissions units discharging to this stack.

[84] Height above ground of the stack exit or release point.

[85] If stack is circular, give inside diameter at exit point in feet. If stack is not circular, provide actual exit dimensions.

[86] Give direction of the stack (vertical, horizontal, etc.). State whether rain cap is used.

[87] If conditions are not measured at actual stack exit, specify location at which measurements are made.

[88] Show calculations in sufficient detail to allow permit engineer to verify actual velocity values. These calculations should be shown in Package Element-5 and clearly identified

[89] Stack flow rate must be entered in cubic feet per second.

[90] Section 9: Compliance Monitoring Devices and Equipment Use this section to list all compliance monitoring devices and equipment used at the facility to verify emission rates and other permit terms and conditions. Use one line for each monitoring device and piece of equipment.

[91] List the unit number of the compliance-monitoring device as shown in Package Element-4 (Process Flow Sheets).

[92] This category addresses situations in which parametric monitoring devices measure substances or characteristics,

such as fuel flow, product flow, pressures, temperatures, etc. that are shown to be indicative of pollutant emissions.

[93] Indicate pollutant of concern whose emissions are to be monitored.

[94] State the type of the monitoring device. Example: Ultra Violet Photometric Analyzer, NDIR Photometer, Opacity Meter, EPA sampling Train (specify the sampling method number) etc.

[95] Highest and Lowest value the instrument can read. Example: 0-1,000 ppm, 0-50 g/m3, 0-100% opacity, etc.

[96] Sensitivity of the instrument. The minimum value change the instrument is capable of measuring and reading out.

[97] Accuracy of the instrument. How closely the instrument represents the actual value (as a percentage).

[98] Provide the unit number(s) (from Package Element-4 Process Flow sheets) of the emissions unit(s) being monitored by each device.

[99] Describe the physical location of the monitoring device and the recording device. Example: Monitor is located in ductwork 50 feet upstream from stack; recorder is located in operating control room; etc.

[100] No other certification is required in the application package.