



Environmental Protection Division
Ecology and Air Quality Group
P.O. Box 1663, MS J978
Los Alamos, New Mexico 87545
(505) 665-8855/FAX: (505) 665-8858

Date: September 8, 2006
Refer to: ENV-EAQ:06-246

Mr. Ted Schooley
Program Manager
New Source Review
Air Quality Bureau
New Mexico Environment Department
2048 Galisteo Street
Santa Fe, NM 87505

**SUBJECT: IDEA ID NO. 856 – LOS ALAMOS NATIONAL LABORATORY
20.2.72 NMAC CONSTRUCTION PERMIT APPLICATION FOR 3 DIESEL-
FIRED GENERATORS**

Dear Mr. Schooley:

Enclosed are four (4) copies of the completed permit application forms and supporting documentation for three diesel-fired generators at Los Alamos National Laboratory (LANL). The permit filing fee of \$500 will be sent with a separate letter.

The three generators will be used periodically at Technical Area 33 (TA-33) to support experimental research activities in a fairly remote area. As shown in Attachment K – Air Dispersion Analysis of the application, maximum short-term emission rates from the generators, combined with emissions from all significant sources at LANL, do not cause or contribute to an exceedance of any National or New Mexico Ambient Air Quality Standard.

If you have any questions concerning this permit application, please contact Jackie Hurtle in LANL's Ecology and Air Quality Group (ENV-EAQ) at 665-4380.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Wilburn'.

Dianne Wilburn
Group Leader
Ecology and Air Quality Group

Enclosure

Cy:

Ray Jermance, FME-TR, J570

Karen Bintz, IAT-2, J570

Rick Costa, SSS-AE-VO2, A199

Steve Fong, DOE-LAAO, A316

Phil Wardwell, LC/GL, A187

Jackie Hurtle, ENV-EAQ, J978

Bill Blankenship, ENV-EAQ, J978

Steve Story, ENV-EAQ, J978

Margie Stockton, ENV-EAQ, J978

Ned Jerabek, NMED-AQB, 2048 Galisteo Street, Santa Fe, NM 87505

J. Van Prooyen, ADPADOPS, A102

IRM-RMSSO, A150

ESH&Q File, K491

ENV-EAQ TA-33 Generator Application File

ENV-EAQ File

20.2.72 NMAC CONSTRUCTION PERMIT APPLICATION
FOR
OPERATION OF THREE (3) DIESEL-FIRED GENERATORS
AT LANL TECHNICAL AREA 33 (TA-33)
LOS ALAMOS NATIONAL LABORATORY

Operated by:

Los Alamos National Security, LLC
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Owned by:

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

September 2006

PREFACE

Los Alamos National Security, LLC, operator of Los Alamos National Laboratory (LANL) for the National Nuclear Security Administration, (an entity of the U.S. Department of Energy), is submitting this application to the New Mexico Environment Department, Air Quality Bureau for a 20.2.72 NMAC Construction Permit to operate three (3) diesel-fired generators at Technical Area 33 (TA-33). This application includes a description of the generators, emissions estimates and dispersion modeling results.

The generators will be operated intermittently to provide power for experiments and research activities within the International Applied Technology (IAT) Division. Emissions from the diesel-fired generators are the only source of air pollutants from these research activities. This application includes two 20-kw generators that were relocated to LANL from the Nevada Test Site in 2005 but have not been operated since being relocated here. A 225-kw generator is also included that has been present at this location, first as a rental unit, and then purchased by LANL. In the past it was used as a stand-by unit and exempt from permitting under NMAC 2.20.72.202(B). Hours of operation have been tracked to document the generator was used less than 500 hours per year while on-site at LANL. However, programmatic needs have changed and LANL plans to use this generator to support research activities.

LANL is proposing operational limits on the generators to minimize allowable emissions. Proposed allowable emission limits are: 11 pounds per hour (2.75 tons/year) of nitrogen oxides (NO_x), 0.74 pounds per hour (0.18 tons/year) of sulfur oxides (SO_x), 0.78 pounds per hour (0.2 tons/year) of particulate matter (PM), 2.4 pounds per hour (0.6 tons/year) of carbon monoxide (CO), and 0.9 pounds per hour (0.23 tons/year) of volatile organic compounds (VOC). Dispersion modeling was conducted to assess offsite impacts due to emissions of these criteria pollutants from the generators. The modeling was based on the 3 generators operating simultaneously along with all of LANL's other sources. The results of the air dispersion modeling analysis showed no exceedances of any National Ambient Air Quality Standards, or New Mexico Ambient Air Quality Standards.

TABLE OF CONTENTS

PROJECT OVERVIEW

PERMIT APPLICATION FORMS

- Part 1: General Information
- Part 2: Required Attachments
- Part 3: Production and Control Equipment
- Part 4: Emission Calculations
- Part 5: Fuel
- Part 6: Material Storage and Handling
- Part 7: Emissions Measurements
- Part 8: Certification

- Attachment A - Process Flow Diagram
- Attachment B - Plot Plan of LANL TA-33
- Attachment C - Emission Calculations
- Attachment D - Background Information Used for Emissions Calculations
- Attachment E - Topographic Map Showing LANL TA-33
- Attachment F - Proof of Public Notice
- Attachment G - Process Description
- Attachment H - PSD Applicability Analysis
- Attachment I - Applicable Regulation Summary
- Attachment J - Malfunction Plan
- Attachment K - Air Dispersion Modeling

Laboratory Overview

The Los Alamos National Laboratory (LANL, or the Laboratory) is located in Los Alamos County, in north central New Mexico, approximately 25 miles northwest of Santa Fe. The Laboratory is situated on the Pajarito Plateau, consisting of a series of finger-like mesas separated by deep east-west canyons. Mesa tops range in elevation from 7,800 feet in the western portion of the site to 6,200 feet in the east. The Jemez Mountains rise rapidly west of the site to over 10,000 feet. The land surrounding LANL is largely undeveloped and consists primarily of the Santa Fe National Forest and Bandelier National Monument. To the north and east of the TA-33 site are the communities of Los Alamos, White Rock, and San Ildefonso Pueblo.

LANL is a scientific laboratory of the National Nuclear Security Administration (NNSA), an entity within the Department of Energy. The Laboratory is managed and operated for the NNSA by Los Alamos National Security, LLC (LANS). Laboratory staff members are integrated into multidisciplinary teams, organized into divisions and groups, targeted at finding solutions to problems of national importance. LANL's core mission is nuclear stockpile stewardship, with certification responsibility for the nation's nuclear weapons stockpile.

The International Applied Technology (IAT) Division will operate these generators. The IAT Division mission is to apply science and engineering to national security challenges through the creation, delivery and support of innovative detection and energy-projection systems for remote applications in space and around the world. IAT reports to the Associate Director for Threat Reduction.

Overview of TA-33 Diesel-Fired Generators

The IAT Division plans to operate the 3 diesel-fired generators at Technical Area 33 (TA-33) to support experimental research activities. Two of the generators (Gen-20kw-a and Gen-20kw-b) were purchased in Nevada and used at the Nevada Test Site. They were

relocated to LANL in the summer of 2005, but have not been operated since being relocated here. The 225-kw generator has been used solely to provide stand-by emergency power and tracked as an exempt source under NMAC 2.20.72.202(B). Future plans call for this generator to be used for programmatic experiments. Therefore it no longer meets the definition of emergency stand-by and requires permitting. Table 1 provides summary information on the generators included in this permit application.

The generators will be used intermittently to provide power for planned research activities at this site. The research will not involve the use, generation, or emissions of any regulated air pollutants beyond the emissions originating from the generators. The research activities involve using electrical equipment only.

Emissions of criteria pollutants and hazardous air pollutants were estimated based on emission factors from AP-42. LANL is requesting federally enforceable limits on operation of the generators to limit allowable emissions. LANL requests these operational limits be expressed as hours of operation per generator. Each unit will be limited to less than 500 hours per year. LANL will maintain a log book that documents operation and number of hours run each month for each generator.

Table 1. Summary of TA-33 Generators Included in this Application

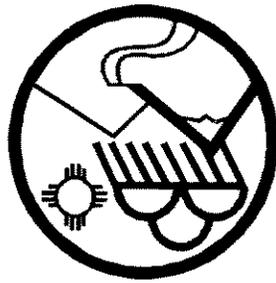
Generator	Make	Size (kw)	Year Relocated to TA-33	Historical Status
Gen-20kw-a	Kohler	20	2005	Portable, trailer mounted. Moved to LANL from Nevada in 2005. Has not yet operated at LANL.
Gen-20kw-b	Kohler	20	2005	Portable, trailer mounted. Moved to LANL from Nevada in 2005. Has not yet operated at LANL.
Gen-225kw	Caterpillar	225	2004	Emergency stand-by. Hours tracked and documented at under 500 hrs/yr.

20.2.72 NMAC Application Forms

Mail Application To:

New Mexico Environment Department
 Air Quality Bureau
 New Source Review Unit
 2048 Galisteo
 Santa Fe, NM 87505

Phone (505) 827-1494
 http://www.nmenv.state.nm.us



Application No. 657564636

AIRS No. _____

For NMED use only

Air Quality Permit Application And Notice Of Intent Universal (General) to Construct or Modify

Acknowledgement: I acknowledge that a pre-application meeting is available to me upon request

X Permit filing fee enclosed. Check No.: _____

Part I – General Information

I-A: Company Information

1	Company name: Los Alamos National Security, LLC, for the U.S. Department of Energy		Date application notarized: <u>9/7/06</u>
2	Facility name: Los Alamos National Laboratory		SIC code (4 digits): 9711
3	Company mailing address: Ecology & Air Quality Group, P.O. Box 1663, MS J978, Los Alamos, NM 87545		
4	Contact person: Dianne Wilburn	Title: Group Leader, Ecology & Air Quality Group	
5	Phone No: (505) 667-6952	Fax No: (505) 665-8858	E-mail: dwwilburn@lanl.gov

I-B: Current Facility Status

1	This application is for (check one): New Facility. <input checked="" type="checkbox"/> Modification to an existing facility. or Revision		
2	Has this facility already been constructed? <input checked="" type="checkbox"/> Yes No	If yes, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes No	
3	Is the plant currently shut down? Yes <input checked="" type="checkbox"/> No	If yes, give month and year of shut down (MM/YY): NA	
4	Was this facility constructed before 1972 and operated since 1972? <input checked="" type="checkbox"/> Yes No		
5	Does this facility have an operating permit under 20 NMAC 2.70? <input checked="" type="checkbox"/> Yes No	If yes, the permit No. is: P-100	
6	Has this facility been issued a No Permit Required (NPR)? <input checked="" type="checkbox"/> Yes No	If yes, the NPR number is: 2195A, 2195L	
7	Has this facility been issued a Notice of Intent (NOI)? <input checked="" type="checkbox"/> Yes No	If yes, the NOI Number is: 2597	
8	Does this facility have a construction permit (20 NMAC 2.72, Section 200.A or 200.B) <input checked="" type="checkbox"/> Yes No		
	• If yes, the permit No. is: 632, 634-M2, 1081-M1, 2195, 2195B-M1, 2195F, 2195 G, 2195H, 2195N		
9	Has this facility been issued a general permit (GCP-1, GCP-2.)? <input checked="" type="checkbox"/> Yes No	If yes, the registration No. is: GCP 3-2195G	
10	Is this a "major source" under the PSD rules? Yes <input checked="" type="checkbox"/> No Unsure.	Is this a "major source" under Title V (20 NMAC	
	• 2.70)? <input checked="" type="checkbox"/> Yes No Unsure.	Is this a major modification under the PSD rules (20 NMAC 2.74)? Yes <input checked="" type="checkbox"/> No Unsure.	
11	If Yes or Unsure to any of the questions in question No. 10, contact the AQB to see if a pre-application meeting is required.		

Table I-B: Current Facility Status (continued)

12	What is the facility's maximum input capacity, specify units (reference here and list capacities in Attachment L if more room is required)			
• Current	Hourly: 3.1 MMBtu/hr (a)	Daily: 74.4 MMBtu/24-hr (a)	Annually: 1550 MMBtu/yr (c)	
• Proposed	Hourly: 3.1 MMBtu/hr (a)	Daily: 74.4 MMBtu/24-hr (a)	Annually: 1550 MMBtu/yr (c)	
13	What is the facility's maximum production rate, specify units (reference here and list capacities in Attachment L, if more room is required)			
• Current	Hourly: 265 kw/hr (b)	Daily: 6,360 kw/24-hr	Annually: 132,500 kw/yr (c)	
• Proposed	Hourly: 265 kw/hr (b)	Daily: 6,360 kw/24-hr	Annually: 132,500 kw/yr (c)	

- (a) Input capacity based on maximum fuel consumption rate for each generator based on manf. specs. and heat value of fuel oil of 137,000 Btu/gal
 (b) Sum of nameplate rating of all 3 generators.
 (c) Annual input and output based on limit of 500 hrs operation per year per generator.

Table I-C: Facility Location Information

1	Section: 22	Range: 6E	Township: 19N	County: Los Alamos	Elevation (ft): 6437
2	UTM Zone: 12 or X13	UTMH (record to one tenth of a km): NAD'27 Easting 388631 m		UTMV (record to one tenth of a km): NAD '27 Northing 3959175 m	
OR	Latitude (deg., min., sec.):		Longitude (deg., min., sec.):		
3a	Name and zip code of nearest New Mexico town: 87544				
3b	Distance and Direction from nearest New Mexico town: Take State Road 4 past White Rock going West toward Bandelier. LANL Technical Area 33 (TA-33) is about 10 road miles West of White Rock on State Highway 4.				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): The facility is <u>10</u> (distance) miles <u>West</u> (direction) of <u>White Rock</u> (nearest town).				
5	Status of land at facility (check one): Private Indian/Pueblo <input checked="" type="checkbox"/> Government (DOE)				
6	Name of nearest Class I area to the facility (see Figure 1.0): Bandelier Wilderness				
7	Shortest distance from facility boundary to the boundary of the nearest Class I area (record to one tenth of a km): 2.3 km				

Table I-D: Proposed Operating Schedule (Note: the operating schedule (D1, D2) shall become a condition of the permit)

1	Facility maximum operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 5	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 500	
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$): Start:			AM PM	End: AM PM
3	Month and year of anticipated start of construction: December 2006				
4	Month and year of anticipated construction completion: December 2006				
5	Month and year of anticipated startup of new or modified facility: December 2006				
6	Will this facility operate at this site for more than one year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

Table I-E: Other

1	Is this application in response to a Notice of Violation (NOV)? Yes <input checked="" type="checkbox"/> No	
•	If yes, NOV date: N A	NOV Tracking No: N A
2	Is air quality dispersion modeling being submitted with this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	Does this facility require an "Air Toxics" permit under 20 NMAC 2.72, Part IV, Tables A and/or B in Part V? Yes <input checked="" type="checkbox"/> No	
4	Will this facility be a source of federal Hazardous Air Pollutants? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
•	If yes, list applicable subparts in 40 CFR 61 & 63: No subparts of 40 CFR 61 & 63 are applicable to the generators.	

Part II – Required Attachments

The following Attachments are required, please label each accordingly. A complete application shall include:

Attachment A A process flow sheet and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. Numbering system should cross reference with Attachment B.

Attachment B A plot plan drawn to scale, showing emissions points, structures, tanks, and fences of property owned, leased, or under direct control of the applicant.

Attachment C All calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. Reference where emission factors were obtained. If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units the calculations represent.

Attachment D Information Used to Determine Emissions

- If manufacturer data are used, include specifications for emissions units and control equipment.
- If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- If an older version of AP-42 is used, include a complete copy of the section.
- If an EPA document or other material is referenced, include a complete copy.
- Fuel specifications sheet.
- If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, 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.

Attachment E A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 5km (3.1 miles)	The nearest occupied structure(s)
Topographic features of the area	Access and haul roads
The name of the map	Facility property boundaries
A scale	The area which will be restricted to public access

Attachment F Proof of public notice: Include a copy of the certified letter receipts, a list of the places where the public notice has been posted, and: (see guidance document)

a sample of the letters sent to land owners	a sample and verification of the local postings
a sample of the letters sent to municipalities	a copy of the display ad and its affidavit of publication
a copy of the announcement sent to a local radio station	a copy of the classified ad and its affidavit of publication

Attachment G A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process.

Attachment H A PSD applicability determination for all sources. For PSD major sources applying for a significant permit revision, use the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

- Attachment I** A discussion demonstrating compliance with each applicable state & federal regulation. If there is a state or federal regulation for your facility's source category that does not apply to your facility, explain why. For example 40 CFR 60 Subpart OOO (crushers), 40 CFR 63 Subpart HHH (HAPs), or 20 NMAC 2.74 (PSD major sources).
- Attachment J** A preliminary operational plan defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown.
- Attachment K** An air quality dispersion modeling demonstration (if applicable) as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines.
- Attachment L** Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field.

Submit the original signed and notarized copy of the application package and;

- 1) One working copy for department use, and
- 2) One copy if air dispersion modeling is included (include disks with input and output files), and
- 3) One copy if public notice was required, and
- 4) If subject to PSD review under 20 NMAC 2.74 (PSD) one copy for US EPA, one copy for each federal land manager affected (NPS, USFS, FWS, USDI), and one copy for each affected regulatory agency other than the Air Quality Bureau.

Part III – Production and Control Equipment

Table III-A: Regulated Equipment (Unit and stack numbering must correspond throughout the application package.)

Note: If applying for a NOI under 20 NMAC 2.7.3, equipment exemptions under 2.7.2, 202 do not apply, and all equipment should be listed here.

Unit No.	Manufacturer	Model No.		Type (Source Description)	Capacity (Specify Units)	For Each Piece of Equipment, Check One	Applicable State Reg. (s) 20 NMAC 2.X, ...	Replacing Unit No.
		Date of Manufacture / Reconstruction (MM/DD/YY)	Serial No.					
Cien-20kw-a	Kohler		20EORZ	Kohler Diesel Generator #20EORZ	20 KW (26.8 HP)	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	20.2.3 NMAC 20.2.7 NMAC 20.2.61 NMAC 20.2.70 NMAC 20.2.72 NMAC 20.2.73 NMAC	
		02-2005	2025460					
Cien-20kw-b	Kohler		20 EORZ	Kohler Diesel Generator #20EORZ	20 KW (26.8HP)	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	Same as above	NA
		05-2005	2025461					
Cien-225kw	Caterpillar		RGH010	Caterpillar Diesel Generator XQ225	225 KW (302 HP)	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	Same as above	NA
		10-1999	E36CLC12					

Table III-B: 20 NMAC 2.72, 202.B Exempted Equipment (If exempt under 20 NMAC 2.72, 202.B.5, list emission rates in Table IV-A.)

(Unit and stack numbering must correspond throughout the application package.)

Note: This table is applicable only if applying for a 20 NMAC 2.72 permit. Exemptions under 20 NMAC 2.72, 202 do not apply to facilities requesting a NOI under 20 NMAC 2.73. See application form instructions and Exemptions Procedure for instructions on this form.

Unit No.	Manufacturer	Model No.		Type (Source Description)	Capacity (Specify Units)	For Each Piece of Equipment, Check One	Site Specific 20 NMAC 2.72-202 Exemption (e.g. 2.72.202.B.5)	Other Required Information
		Date of Mfg. (MM/DD/YY)	Serial No.					
				NONE		<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
						<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		

Part IV - Emission Calculations

Table IV-A: Unit Emissions Rates List Toxic Air Pollutants (TAPs) In Table IV-C (Unit and stack numbering must correspond throughout the application package.) Include tank-flashing emissions estimates.

Unit No.	Potential emission rate (PER) (Uncontrolled) Based on 8760 hours/gen/year							Potential to emit (PTE) ² (Controlled) Based on limit of 500 hours/gen/year						
	TSP lb/hr ton/yr	PM10 lb/hr ton/yr	NOx lb/hr ton/yr	CO lb/hr ton/yr	VOC lb/hr ton/yr	SOx lb/hr ton/yr	Lead □ H ₂ S lb/hr ton/yr	TSP lb/hr ton/yr	PM10 lb/hr ton/yr	NOx lb/hr ton/yr	CO lb/hr ton/yr	VOC lb/hr ton/yr	SOx lb/hr ton/yr	Lead □ H ₂ S lb/hr ton/yr
Gen-20kw-a	0.06 0.26	0.06 0.26	0.83 3.63	0.18 0.78	0.07 0.29	0.06 0.24		0.06 0.01	0.06 0.01	0.83 0.21	0.18 0.04	0.07 0.02	0.06 0.01	
Gen-20kw-b	0.06 0.26	0.06 0.26	0.83 3.63	0.18 0.78	0.07 0.29	0.06 0.24		0.06 0.01	0.06 0.01	0.83 0.21	0.18 0.04	0.07 0.02	0.06 0.01	
Gen-225kw	0.66 2.91	0.66 2.91	9.33 40.85	2.01 8.83	0.75 3.30	0.62 2.72		0.66 0.17	0.66 0.17	9.33 2.33	2.01 0.5	0.75 0.19	0.62 0.16	
Totals →	0.78 3.43	0.78 3.43	10.99 48.11	2.37 10.39	0.89 3.88	0.74 3.2		0.78 0.20	0.78 0.20	10.99 2.75	2.37 0.58	0.89 0.23	0.74 0.18	

¹ (PER) or "Potential Emission Rate" means the emission rate of a source at its maximum capacity to emit a regulated air contaminant under its physical and operational design, provided any physical or operational limitation on the capacity of the source to emit a regulated air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its physical and operational design only if the limitation or the effect it would have on emissions is enforceable by the Department pursuant to the Air Quality Control Act or the federal Act.

² (PTE) or "Potential to emit" means the maximum capacity of a stationary source to emit a regulated air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a regulated air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitations or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source. 20 NMAC 2.72, 300.E. PTE does include reductions in emissions due to federally enforceable limits.

Table IV-B: Stack Exit and Fugitive¹ Emission (PTE) Rates for Pollutants and Stack Exit Conditions List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table IV-C. (Unit and stack numbering must correspond throughout the application package.) Include tank-flashing emissions estimates.

Stack No.	Unit No.(s) from Table III-A	Stack Exit Emission Rates for Criteria Pollutants										Stack Exit Conditions (Not Applicable for Fugitives)			
		TSP lb/hr	PM10 lb/hr	NOx lb/hr	CO lb/hr	VOC lb/hr	SOx lb/hr	□ Lead □ H ₂ S lb/hr	Orientation (H=Horizontal V=Vertical)	Height Above Ground (ft)	Flow Rate (acfm)	Moisture by Volume (%)	Inside Diameter or L x W (ft)		
		ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	Rain Caps (Yes or No)	Temp. (F)	(dscfm)	Velocity (ft/sec)			
S-1	Gen-20kw-a	0.06	0.06	0.83	0.18	0.07	0.06		H	2	200		0.1		
S-2	Gen-20kw-b	0.01	0.01	0.21	0.04	0.02	0.01		Yes	1000		424			
		0.06	0.06	0.83	0.18	0.07	0.06		H	2	200		0.1		
S-3	Gen-22.5kw	0.01	0.01	0.21	0.04	0.02	0.01		Yes	1000		424			
		0.66	0.66	9.33	2.01	0.75	0.62		V	6.5	2150		0.25		
		0.17	0.17	2.33	0.5	0.19	0.16		No	860		730			
Totals →		0.78	0.78	10.99	2.37	0.89	0.74								
		0.20	0.20	2.75	0.58	0.23	0.18								

¹ List all fugitives that are associated with the normal, routine, or non-emergency operation of the facility.

Table IV-C: Stack Exit Emission Rates for HAPs and TAPs (Describe Stack Exit Conditions in Table IV-B)

(Unit and stack numbering must correspond throughout the application package.) Include tank-flashing emissions estimates

		Specify the name of the HAP or TAP as it appears in Section 112. (b) of the 1990 CAAA or 20 NMAC 2.72 Subpart V in the space provided below.											
Stack No.	Unit No.(s)	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>	HAP <input type="checkbox"/> TAP <input type="checkbox"/>
		lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr	lb/hr ton/yr
		<p>Note: HAP emission estimates are shown in Attachment C for the combustion of diesel fuel. Total annual HAP emissions are 0.0009 tpy for the 3 generators based on operating 500 hr/generator/year. There are no AP-42 emission factors for TAPs and emissions are minimal.</p>											
TOTAL		→											

Only list TAPs that have a PER greater than the threshold emission rate listed in 20.2.72.502, Tables A and B

Table VI-B: Liquid Storage Tank Data (Use additional sheets if necessary.) (Unit and stack numbering must correspond throughout the application package.)
 Include appropriate tank-flashing, modeling input data. Use an addendum to this table for unlisted data categories.

Tank No.	Date Installed/Modified (MM/YY)	Materials Stored	Roof Type (Table VI-C)	Seal Type (Table VI-C)	Capacity ¹		Diameter (M)	Vapor Space (M)	Color (Table VI-C)		Annual Through-put (gal/yr)	Turnovers per year
					(bbl)	(M ³)			Roof	Shell		
T-1 (for Gen-225kw)	TBD	Diesel Fuel Oil	FX	A	7.1	1.1	TBD	TBD	Black	Black	9,100	1
Note: Tank T-1, associated with Gen-225kw is an integral component of the generator and not a separate piece of equipment. Gen-20kw-a and Gen-20kw-b either run off fuel from the truck or have very small integral fuel tanks of 10-20 gallon capacity.												
						(300 gallons)						

Table VI-C: Liquid Storage Tank Data Codes

Roof Type	Seal Type, Welded Tank Seal Type	Seal Type, Riveted Tank Seal Type	Roof, Shell Color	Paint Cond.
FX, Fixed Roof	1, Mechanical Shoe Seal	3, Vapor-mounted resilient seal	WH, White	Good
IF, Internal Floating Roof	A, Primary only	A, Primary only	AS, Aluminum (specular)	Poor
EF, External Floating Roof	B, Shoe-mounted secondary	B, Weather shield	AD, Aluminum (diffuse)	
P, Pressure	C, Rim-mounted secondary	C, Rim-mounted secondary	LG, Light Gray	
			MG, Medium Gray	
			BL, Black	
			OT, Other	

¹0.159 M³ = 42.0 gal = 1.00 bbl

Certification

Part VIII – Certification

Company Name: Los Alamos National Security, LLC, for the U.S. Department of Energy

I, Dianne Wilburn and Karen Bintz, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 7th day of September, 2006, upon my oath or affirmation, before a notary of the State of New Mexico.

Dianne Wilburn
Signature

Dianne Wilburn

Printed Name

9/7/06
Date

Group Leader, Ecology & Air Quality Group

Title

Karen Bintz
Signature

Karen Bintz

Printed Name

9/7/06
Date

Group Leader, Applied Electrodynamics Group

Title

Scribed and sworn before me on this 7th day of September, 2006.

My authorization as a notary of the State of New Mexico expires on the 10th day of June, 2010.

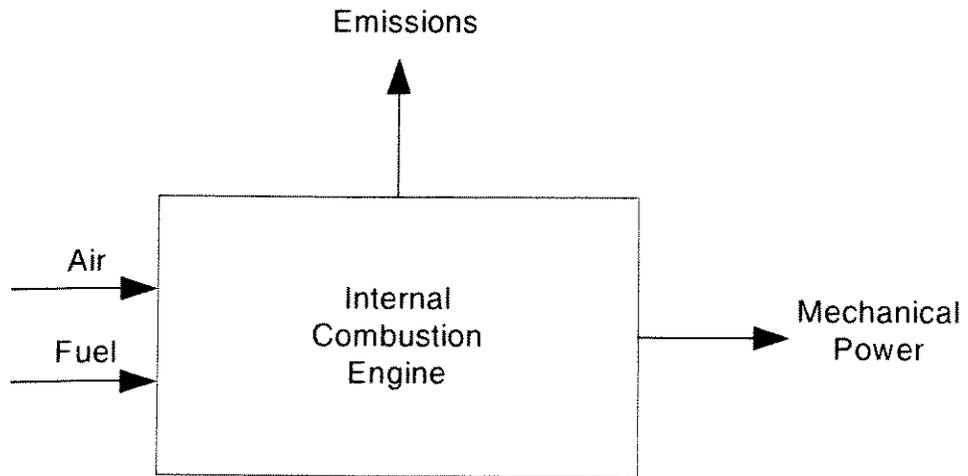
Taylor A. Valdez
Notary's Signature

9-7-06
Date

Taylor A. Valdez
Notary's Printed Name

Attachment A – Process Flow Diagram

Process Flow Diagram for Internal Combustion Sources

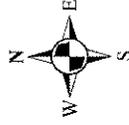


Attachment B – Plot Plan

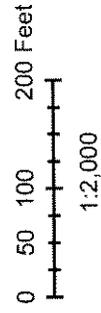
The 3 generators are portable and will be used at various locations throughout TA-33. The plot plan presented shows planned locations where the generators will likely be used the most.

TA-33 Plot Plan

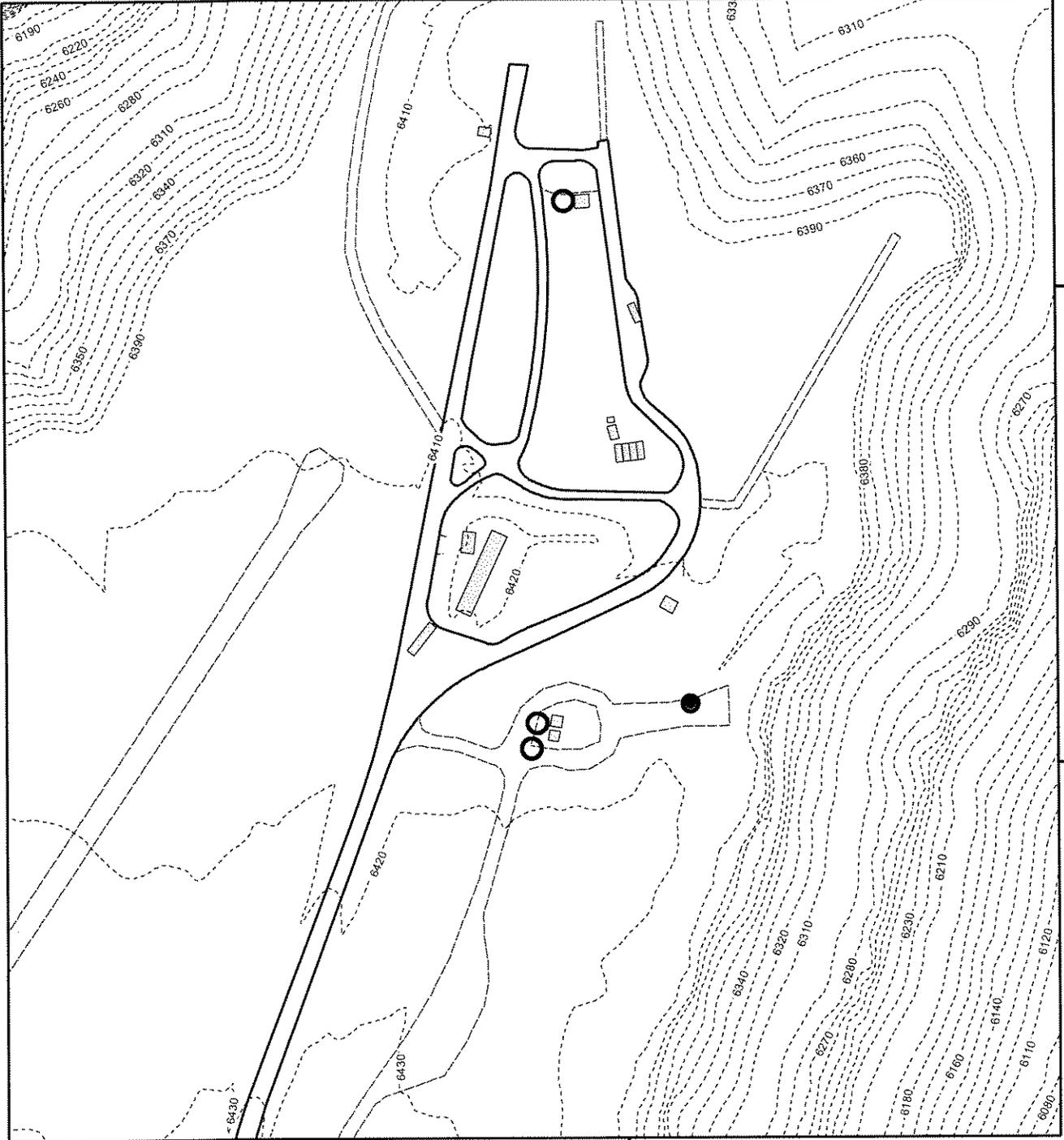
- 1500 kW Generator (Permit # NSR2195-F)
- 20-225 kW Generators
- Paved Road/Parking
- - - 10FT Contour
- - - Dirt Road
- ▭ Building



New Mexico State Plane Coordinates,
Central Zone,
North American Datum 1983.
Grid Coordinates in NAD 27 UTM



THE DATA HEREIN HAS BEEN OBTAINED FROM SOURCES
WHICH ARE BELIEVED TO BE RELIABLE, BUT ITS ACCURACY AND
COMPLETENESS ARE NOT GUARANTEED. THE DATA
MAY CONTAIN SOME NONCONFORMITIES, DEFECTS,
ERRORS, AND/OR OMISSIONS.



3959342

3959178

388578

388742

Attachment C – Emission Calculations

Emission factors from AP-42, Section 3.3 Gasoline and Diesel Industrial Engines, Table 3.3.1, were used to calculate emissions from the generators. Tables C-1 and C-2 present AP-42 emission factors for criteria pollutants and hazardous air pollutants. A copy of the relevant section of AP-42 is included in Attachment D of this application.

Table C-1. Emission Factors from AP-42 Section 3.3, Gasoline and Diesel Industrial Engines (Table 3.3-1)

Pollutant	Emission Factor (lb/hp-hr)	Emission Factor (grams/kw-hr) ^a
NO _x	0.031	18.85
CO	0.00668	4.06
SO _x	0.00205	1.25
PM ₁₀	0.0022	1.34
VOC	0.0025	1.52

(a) To convert from lb/hp-hr to grams/kw-hr multiply by 0.608 and then by 1000

Table C-2. HAP Emission Factors from AP-42 Section 3.3, Gasoline and Diesel Industrial Engines (Table 3.3-2)

Pollutant	Emission Factor ^a (lb/MMBtu)	Emission Factor ^a (lb/kw-hr)
Benzene	9.33E-04	3.19E-06
Toluene	4.09E-04	1.40E-06
Xylenes	2.85E-04	9.72E-07
1,3-Butadiene	3.91E-05	1.33E-07
Formaldehyde	1.18E-03	4.03E-06
Acetaldehyde	7.67E-04	2.62E-06
Acrolein	9.25E-05	3.15E-07
Naphthalene	8.48E-05	2.89E-07
PAH	1.68E-04	5.73E-07

(a) To convert from lb/MMBtu to lb/kw-hr multiply by 3414 and then divide by 10⁶

The proposed allowable emissions for criteria pollutants based on operating limits of 500 hours per year per generator are shown in Table C-3.

Table C-3. Proposed Allowable Emissions from LANL TA-33 Generators

Unit	NOx	NOx	CO	CO	SOx	SOx	PM ₁₀	PM ₁₀	VOC	VOC
	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
20kw-a	0.83	0.21	0.18	0.04	0.06	0.01	0.06	0.01	0.07	0.02
20kw-b	0.83	0.21	0.18	0.04	0.06	0.01	0.06	0.01	0.07	0.02
225 kw	9.33	2.33	2.01	0.50	0.62	0.16	0.66	0.17	0.75	0.19
Total	10.99	2.75	2.37	0.58	0.74	0.18	0.78	0.20	0.89	0.22

Emissions of hazardous air pollutants (HAPs) were also estimated using AP-42 emissions factors. HAP emissions based on limiting operations to no more than 500 hours per year per generator are shown in Tables C-4 and C-5.

Table C-4. Summary of HAP Emissions from 3 TA-33 Generators (lb/hr)

Generator	Benzene lb/hr	Toluene lb/hr	Xylenes lb/hr	1,3- Butadiene lb/hr	Formaldehy de lb/hr	Acetaldehy de lb/hr	Acrolein lb/hr	Naphthalene lb/hr	PAH lb/hr	Total HAPs lb/hr
20kw-a	6.37E-05	2.79E-05	1.95E-05	2.67E-06	8.06E-05	5.24E-05	6.32E-06	5.79E-06	1.15E-05	2.70E-04
20kw-b	6.37E-05	2.79E-05	1.95E-05	2.67E-06	8.06E-05	5.24E-05	6.32E-06	5.79E-06	1.15E-05	2.70E-04
225 kw	7.17E-04	3.14E-04	2.19E-04	3.00E-05	9.06E-04	5.89E-04	7.11E-05	6.51E-05	1.29E-04	3.04E-03
Total	8.44E-04	3.70E-04	2.58E-04	3.54E-05	1.07E-03	6.94E-04	8.37E-05	7.67E-05	1.52E-04	3.58E-03

Table C-5. Summary of HAP Emissions from 3 TA-33 Generators (tons/yr)^a

Generator	Benzene tons/yr	Toluene tons/yr	Xylenes tons/yr	1,3- Butadiene tons/yr	Formaldehy de tons/yr	Acetaldehy de tons/yr	Acrolein tons/yr	Naphthalene tons/yr	PAH tons/yr	Total HAPs tons/yr
20kw-a	1.59E-05	6.98E-06	4.86E-06	6.67E-07	2.01E-05	1.31E-05	1.58E-06	1.45E-06	2.87E-06	6.76E-05
20kw-b	1.59E-05	6.98E-06	4.86E-06	6.67E-07	2.01E-05	1.31E-05	1.58E-06	1.45E-06	2.87E-06	6.76E-05
225kw	1.79E-04	7.85E-05	5.47E-05	7.51E-06	2.27E-04	1.47E-04	1.78E-05	1.63E-05	3.23E-05	7.60E-04
Total	2.11E-04	9.25E-05	6.45E-05	8.84E-06	2.67E-04	1.73E-04	2.09E-05	1.92E-05	3.80E-05	8.95E-04

(a) Ton per year emissions based on proposed operating limit of 500 hrs/year.

Attachment D – Background Information for Emission Calculations

1. AP-42, Section 3.3 – Gasoline and Diesel Industrial Engines, October 1996.
Tables 3.3.1 and 3.3.2
2. Emission Calculation Spreadsheets

Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES^a

Pollutant	Gasoline Fuel (SCC 2-02-003-01, 2-03-003-01)		Diesel Fuel (SCC 2-02-001-02, 2-03-001-01)		EMISSION FACTOR RATING
	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	
NO _x	0.011	1.63	0.031	4.41	D
CO	0.439	62.7	6.68 E-03	0.95	D
SO _x	5.91 E-04	0.084	2.05 E-03	0.29	D
PM-10 ^b	7.21 E-04	0.10	2.20 E-03	0.31	D
CO ₂ ^c	1.08	154	1.15	164	B
Aldehydes	4.85 E-04	0.07	4.63 E-04	0.07	D
TOC					
Exhaust	0.015	2.10	2.47 E-03	0.35	D
Evaporative	6.61 E-04	0.09	0.00	0.00	E
Crankcase	4.85 E-03	0.69	4.41 E-05	0.01	E
Refueling	1.08 E-03	0.15	0.00	0.00	E

^a References 2.5-6.9-14. When necessary, an average brake-specific fuel consumption (BSFC) of 7.000 Btu/hp-hr was used to convert from lb/MMBtu to lb/hp-hr. To convert from lb/hp-hr to kg/kw-hr, multiply by 0.608. To convert from lb/MMBtu to ng/l, multiply by 430. SCC = Source Classification Code. TOC = total organic compounds.

^b PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be ≤ 1 µm in size.

^c Assumes 99% conversion of carbon in fuel to CO₂ with 87 weight % carbon in diesel, 86 weight % carbon in gasoline, average BSFC of 7.000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and gasoline heating value of 20,300 Btu/lb.

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES^a

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene ^b	9.33 E-04
Toluene ^b	4.09 E-04
Xylenes ^b	2.85 E-04
Propylene ^b	2.58 E-03
1,3-Butadiene ^{b,c}	<3.91 E-05
Formaldehyde ^b	1.18 E-03
Acetaldehyde ^b	7.67 E-04
Acrolein ^b	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene ^b	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzot(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,i)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

^a Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-05-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.

^b Hazardous air pollutant listed in the *Clean Air Act*.

^c Based on data from 1 engine.

Summary of Criteria Pollutant Emissions from 3 Generators at TA-33

Generator	NOx		CO		SOx		PM ₁₀		VOC	
	lb/hr	Proposed tons/year ^a	lb/hr	Proposed tons/year ^a	lb/hr	Proposed tons/year ^a	lb/hr	Proposed tons/year ^a	lb/hr	Proposed tons/year ^a
20kw-a	0.83	0.21	0.18	0.04	0.06	0.01	0.06	0.01	0.07	0.02
20kw-b	0.83	0.21	0.18	0.04	0.06	0.01	0.06	0.01	0.07	0.02
225 kw	9.33	2.33	2.01	0.50	0.62	0.16	0.66	0.17	0.75	0.19
Total	10.98	2.75	2.37	0.59	0.73	0.18	0.78	0.20	0.89	0.22

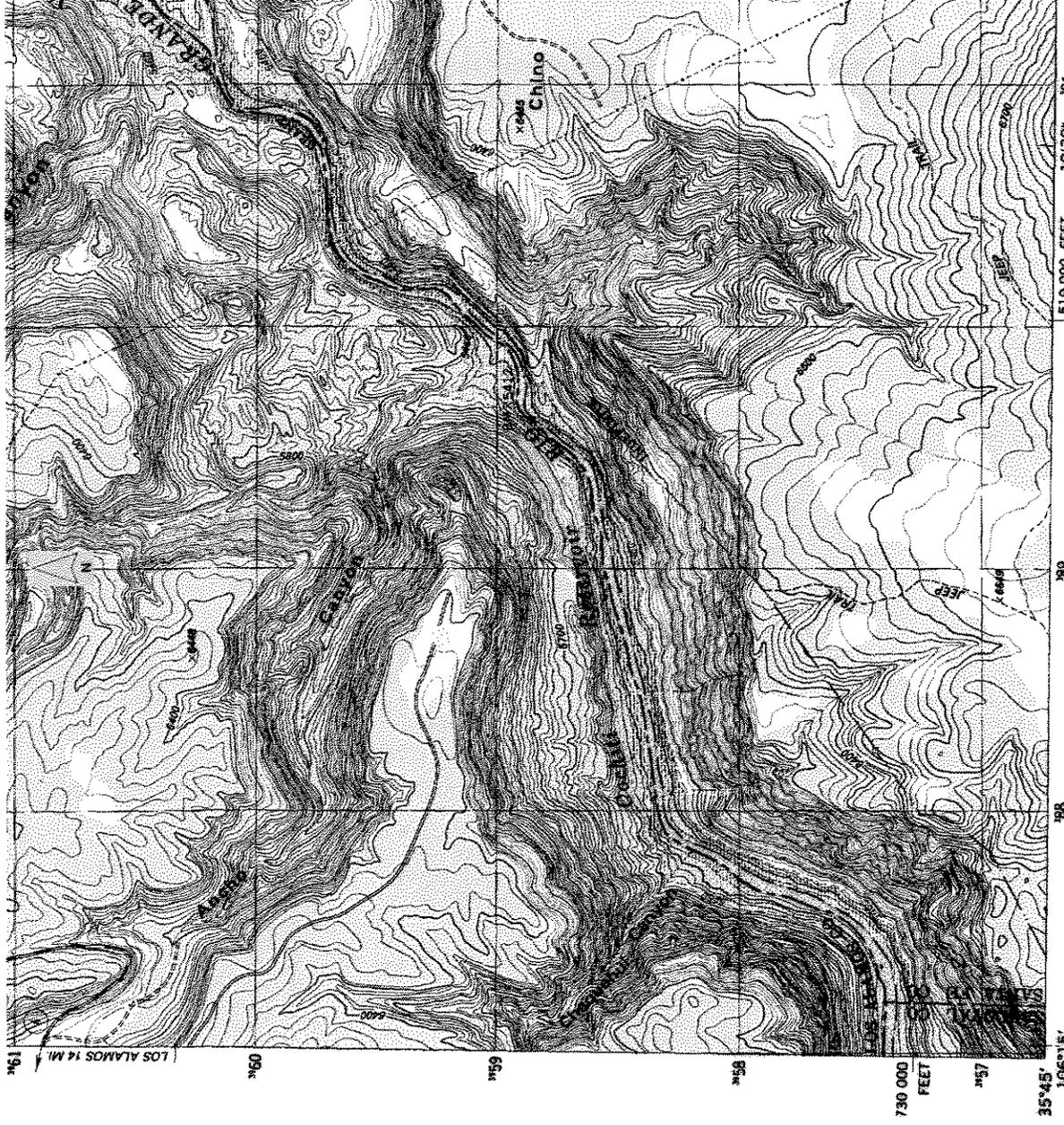
(a) Proposed emission limit based on operating limit of 500 hrs/year.

Generator	NOx		CO		SOx		PM ₁₀		VOC	
	lb/hr	NOx PER tons/year ^b	lb/hr	CO PER tons/year ^b	lb/hr	SOx PER tons/year ^b	lb/hr	PM ₁₀ PER tons/year ^b	lb/hr	VOC PER tons/year ^b
20kw-a	0.83	3.63	0.18	0.78	0.06	0.24	0.06	0.26	0.07	0.29
20kw-b	0.83	3.63	0.18	0.78	0.06	0.24	0.06	0.26	0.07	0.29
225 kw	9.33	40.85	2.01	8.82	0.62	2.72	0.66	2.91	0.75	3.30
Total	10.98	48.11	2.37	10.39	0.73	3.20	0.78	3.43	0.89	3.89

(b) Potential Emission Rate (PER) is based on 8760 hours/year

Attachment E – Topographical Map

Attachment E



Topographic map of TA-33 showing approximate location of TA-33 Generators site (as yellow dot).

Attachment F – Proof of Public Notice

This attachment contains copies of the public notice provided by Los Alamos National Laboratory for operation of 3 diesel-fired generators at TA-33. When all public notice requirements are completed, documentation will be provided to NMED. Public notice includes:

- Certified letters to approximately 450 property owners near LANL property boundary.
- Public notice in local newspaper and radio.
- Posting of public notice in four (4) publicly accessible places.
- Certified letters to all cities, counties, and pueblos within a ten (10) mile radius.

Sample Letter to Nearby Property Owners

**Certified Mail XXXX XXXX XXXX XXXX
RETURN RECEIPT REQUESTED**

Dear Madam or Sir:

This letter is to notify you that Los Alamos National Security, LLC, operator of Los Alamos National Laboratory (LANL) for the U.S. Department of Energy, is preparing to apply with the New Mexico Environment Department, Air Quality Bureau for a 20.2.72 NMAC Construction Permit to operate three (3) diesel-fired generators at Technical Area 33 (TA-33). This notice is a requirement of the permitting process, under the New Mexico Administrative Code, Title 20 - Environmental Protection, Chapter 2 - Air Quality, Part 72 - Construction Permits. We are providing this notice to you because you were identified as an owner of property which is located at or near the boundary of Los Alamos National Laboratory.

Los Alamos National Laboratory expects to submit the permit application to the New Mexico Environment Department's Air Quality Bureau in September 2006. Once submitted, the application will be available on line at http://www.airquality.lanl.gov/Op-Permit/Construction_Permits.shtml. The location of the generators included in this permit application is Township 19 North, Range 6 East, Section 22, approximately 10 road miles west of White Rock in Los Alamos County.

The purpose of the generators is to provide stand-alone power for experimental research projects. The generators will be operated intermittently to support experimental research activities. LANL is proposing operational limits on the generators to limit emissions. The generators will be limited to no more than 500 hours of operation per year per generator. Maximum emissions based on the proposed allowable limits and operation of all three generators at the same time are: *11.0 pounds per hour (2.75 tons/year) of nitrogen oxides (NO_x), 0.74 pounds per hour (0.18 tons/year) of sulfur oxides (SO_x), 0.78 pounds per hour (0.2 tons/year) of particulate matter (PM), 2.4 pounds per hour (0.6 tons/year) of carbon monoxide (CO), and 0.9 pounds per hour (0.23 tons/year) of volatile organic compounds (VOC)*. The maximum operation schedule for the generators will be 25 hours per day, with an annual limit of 500 hours per year per generator. Dispersion modeling was conducted to assess offsite impacts due to emissions of criteria pollutants from these generators. The results of this modeling analysis showed no exceedances of any ambient air quality standards.

The permit applicant and operator is the Los Alamos National Security, LLC at P.O. Box 1663, MS J978, Los Alamos, New Mexico 87545. The owner of the facility is the U.S. Department of Energy, Los Alamos Area Office, 528 35th Street, Los Alamos, NM 87544.

Comments and inquiries about the permit application or the permitting process can be addressed to:

Program Manager, New Source Review
New Mexico Environment Department, Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505
(505) 827-1494.

If sending written comments to the Department, please be sure to note the company name and site name, or a copy of this letter along with your comments so the Department can determine the permit application to which your comments refer. Also include your mailing address in your response. The Department will also publish notice later in the permit process after it has had the opportunity to review the application and its air quality impacts.

Sincerely,

Dianne Wilburn, Group Leader
Ecology and Air Quality Group
Environmental Protection Division
Los Alamos National Laboratory
P.O. Box 1663, MS J978
Los Alamos New Mexico, 87545

Sample Letter to Municipality, County and Tribal Governments

**Certified Mail XXXX XXXX XXXX XXXX
RETURN RECEIPT REQUESTED**

Dear (Municipal, County, or Tribal Official):

This letter is to notify you that the Los Alamos National Security, LLC, operator of Los Alamos National Laboratory (LANL) for the U.S. Department of Energy, is preparing to apply with the New Mexico Environment Department, Air Quality Bureau for a 20.2.72 NMAC Construction Permit to operate three (3) diesel-fired generators at Technical Area 33 (TA-33). This notice is a requirement of the permitting process, under New Mexico Administrative Code, Title 20 - Environmental Protection, Chapter 2 - Air Quality, Part 72 - Permits.

Los Alamos National Laboratory expects to submit the permit application to the New Mexico Environment Department's Air Quality Bureau in September 2006. The location of these sources is Township 19 North, Range 6 East, Section 22 approximately 10 road miles west of White Rock in Los Alamos County.

The purpose of the generators is to provide stand-alone power for experimental research projects. The generators will be operated intermittently to support experimental research activities. LANL is proposing operational limits on the generators to limit emissions. The generators will be limited to no more than 500 hours of operation per year per generator. Maximum emissions based on the proposed allowable limits and operation of all three generators at the same time are: *11.0 pounds per hour (2.75 tons/year) of nitrogen oxides (NO_x), 0.74 pounds per hour (0.18 tons/year) of sulfur oxides (SO_x), 0.78 pounds per hour (0.2 tons/year) of particulate matter (PM), 2.4 pounds per hour (0.6 tons/year) of carbon monoxide (CO), and 0.9 pounds per hour (0.23 tons/year) of volatile organic compounds (VOC)*. The maximum operating schedule for the generators will be 24 hours per day, with an annual limit of 500 hours per year per generator. Dispersion modeling was conducted to assess offsite impacts due to emissions of criteria pollutants from these generators. The results of this modeling analysis showed no exceedances of any ambient air quality standards.

The permit applicant and operator is Los Alamos National Security, LLC at P.O. Box 1663, MS J978, Los Alamos, New Mexico 87545. The owner of the facility is the U.S. Department of Energy, Los Alamos Area Office, 528 35th Street, Los Alamos, NM 87544.

Comments and inquiries about the permit application or the permitting process can be addressed to:

Program Manager, New Source Review
New Mexico Environment Department, Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505
(505) 827-1494.

If sending written comments to the Department, please be sure to note the company name and site name, or a copy of this letter along with your comments so the Department can determine the permit application to which your comments refer. Also include your mailing address in your response. The Department will also publish notice later in the permit process after it has had the opportunity to review the application and its air quality impacts.

Sincerely,

Dianne Wilburn, Group Leader
Ecology and Air Quality Group

Environmental Protection Division
Los Alamos National Laboratory
P.O. Box 1663, MS J978
Los Alamos New Mexico, 87545

For Newspaper, Radio and Posting

NOTICE OF AIR QUALITY PERMIT APPLICATION

Pursuant to the requirements of Title 20 of the New Mexico Administrative Code, Chapter 2, Part 72 (20.2.72 NMAC – Construction Permits, Section 203.B), Los Alamos National Security, LLC, operator of Los Alamos National Laboratory (LANL) for the U.S. Department of Energy, hereby announces the intent to apply to the New Mexico Environmental Department's Air Quality Bureau for an air quality permit to operate three (3) diesel-fired generators at Technical Area 33 (TA-33). The expected date of application submittal to NMED is September 2006.

The location of these generators is Township 19 North, Range 6 East, Section 22, approximately 10 miles west of White Rock in Los Alamos County.

The purpose of the generators is to provide stand-alone power for experimental research projects. The generators will be operated intermittently to support experimental research activities. LANL is proposing operational limits on the generators to limit emissions. The generators will be limited to 500 hours of operation per year per generator. Maximum emissions based on the proposed allowable limits and operation of all three generators at the same time are: *11.0 pounds per hour (2.75 tons/year) of nitrogen oxides (NO_x), 0.74 pounds per hour (0.18 tons/year) of sulfur oxides (SO_x), 0.78 pounds per hour (0.2 tons/year) of particulate matter (PM), 2.4 pounds per hour (0.6 tons/year) of carbon monoxide (CO), and 0.9 pounds per hour (0.23 tons/year) of volatile organic compounds (VOC).* The maximum operating schedule for the generators will be 24 hours per day, with an annual limit of 500 hours per year per generator.

The permit applicant and operator is Los Alamos National Security, LLC at P.O. Box 1663, MS J978, Los Alamos, New Mexico 87545. The owner of the facility is the U.S. Department of Energy, Los Alamos Area Office, 528 35th Street, Los Alamos, NM 87544.

Comments and inquiries about the permit application or the permitting process can be addressed to:

Program Manager, New Source Review
New Mexico Environment Department, Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505
(505) 827-1494.

Please refer to the company name and site name, as used in this notice when making inquiries so the Department can determine the permit application to which your comments refer. Also include your mailing address in your response. The Department will also publish notice later in the permit process after it has had the opportunity to review the application and its air quality impacts.

NOTICIA DE SOLICITUD PARA UN PERMISO DE CALIDAD DEL AIRE

En cuanto a los requisitos del Título 20 del Código Administrativo de Nuevo México, Capítulo 2, Sección 72 (20.2.72 NMAC—Permisos de Construcción, Sección 203.B), Seguridad Nacional de Los Alamos, LLC, operador del Laboratorio Nacional de Los Alamos (LANL) para el Departamento de Energía de los Estados Unidos, en este documento se anuncia el intento de someter un pedido al Departamento del Ambiente de Nuevo México, la Agencia de Calidad del Aire, para un permiso de calidad de aire para operar tres (3) generadores operados por diesel en el Area Técnica 33 (TA-33). La fecha esperada de someter la aplicación a NMED es septiembre de 2006.

La localización de estos generadores es Municipio 19 Norte, Cordillera Este, Sección 21, aproximadamente 10 millas al oeste del pueblo de White Rock en el Condado de Los Alamos.

El propósito de los generadores es de proveer la potencia única para proyectos de investigaciones experimentales. Los generadores se pondrán a operar intermitentemente para apoyar actividades de investigaciones experimentales. LANL propone límites de operación de los generadores para limitar emisiones. Se limitará la operación de los generadores a 500 horas de operación por año por cada generador. Emisiones máximas basadas en los límites propuestos permitidos de los tres generadores al mismo tiempo son lo siguiente: 11,0 libras por hora (2,75 toneladas por año) de óxidos de nitrógeno (NOx), 0,74 libras por hora (0,18 toneladas por año) de óxido de azufre (SOx), 0,78 libras por hora (0,2 toneladas por año) de materia particulada (PM), 2,4 libras por hora (0,6 toneladas por año) de monóxido carbono (CO) y 0.9 libras por hora (0,23 toneladas por año) de compuestos orgánicos volátiles (VOC). El horario máximo de operación de los generadores será de 24 horas al día con un límite anual de 500 horas por año para cada generador.

El solicitante del permiso y operador es Los Alamos National Security, LLC, P.O Box 1663, MS J978, Los Alamos, New Mexico, 87545. El dueño de la facilidad es el U.S. Department of Energy, Los Alamos Area Office, 528 35th Street, Los Alamos, NM 87544.

Comentarios y preguntas sobre el proceso para recibir el permiso se pueden dirigir a:

Program Manager, New Source Review
New Mexico Environment Department, Air Quality Bureau
2048 Galisteo Street
Santa Fe, NM 87505
(505) 827-1494.

Favor de indicar el nombre de la compañía y su localización, como se utiliza en esta noticia, cuando tiene preguntas para que el Departamento pueda determinar cual es la aplicación de permiso a que se refiere en sus comentarios. También, favor de incluir su dirección de correo en su respuesta. El Departamento también publicará una noticia más

tarde en el proceso de obtener el permiso después que haya tenido la oportunidad de repasar la aplicación y su impacto sobre la calidad del aire.

General Posting of Notices – Certification

I, _____, the undersigned, certify that on {DATE}, I posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the town of Los Alamos, Los Alamos County, State of New Mexico on the following dates:

1. Facility Entrance to Technical Area 33, Building 114 {DATE},
2. Los Alamos Public Library {DATE},
3. Los Alamos County Building {DATE},
4. Los Alamos National Laboratory (LANL) Outreach Center Community Reading Room {DATE}.

Signed this ____ day of _____, _____.

Signature

Date

Printed Name Title

Submittal of Public Service Announcement – Certification

I, _____, the undersigned, certify that on **{DATE}**, I submitted a public service announcement to **{RADIO NAME}** that serves the town of **Los Alamos, Los Alamos County**, State of New Mexico, in which the source is or is proposed to be located and that **{RADIO NAME} Responded that it would air the announcement on (DATE)**.

Signed this ____ day of _____, _____.

Signature _____
Date

Printed Name _____
Title

Attachment G – Process Description

LANL plans to operate 3 diesel-fired generators at Technical Area 33 (TA-33) to provide stand alone power to mission critical experimental research conducted by the International Applied Technology (IAT) Division. The site is remote and commercial power is not reliably available to conduct this research. The generators will be used intermittently to provide power for planned research activities at this site. The research will not involve the use, generation, or emissions of any regulated air pollutants beyond the emissions originating from the generators. The research activities involve using electrical equipment only.

With this permit application LANL is requesting federally enforceable limits on operation of the generators to limit allowable emissions. LANL requests these operational limits be expressed as hours of operation per generator. Each unit will be limited to less than 500 hours per year. LANL will maintain a log book that documents the operation and number of hours run each month for each generator.

Attachment H – PSD Applicability Analysis

NMED implements the federal Prevention of Significant Deterioration (PSD) permit program under 20.2.74 NMAC. The PSD requirements apply to new major stationary sources or new projects defined as major modifications. The PSD program is intended to limit new air emissions in areas which are already in attainment of National Ambient Air Quality Standards (NAAQS) and also provide special protection for designated Class I areas.

The initial Title V operating permit for LANL (Operating Permit No. P100) was issued by NMED in April 2004, and Mod 1 was issued on June 15, 2006 (No. P100M1). As requested by LANL, the permit contains enforceable facility-wide limits which serve to define the Laboratory as a minor stationary source for PSD purposes. This means modifications to LANL, such as this generator permit, cannot be a *major modification* as defined by 20.2.74 NMAC and subject to the PSD permitting. In order to trigger PSD review at a minor stationary source, a modification would in and of itself have to meet the definition of *major stationary source*. The thresholds which define a *major stationary source* are potential emissions equal to or greater than 250 tons per year of a regulated pollutant (or 100 tons per year if the source is a type listed in Table 1 of 20.2.74 NMAC). The highest maximum potential emission rate for a regulated pollutant from the diesel-fired generators at TA-33 is 2.75 tons of NO_x per year. Therefore, the PSD permit requirements do not apply to this modification at LANL.

Attachment I –Applicable Regulations

This permit application for installation of three diesel-fired generators at TA-33 is being submitted to meet the requirements of 20.2.72 NMAC–Construction Permitting. This section provides a summary of air quality regulations that potentially apply to installation and operation of these generators.

20.2.3 NMAC – Ambient Air Quality Standards

The simultaneous operation at maximum permitted capacity of all three generators will not cause or contribute to any exceedance of any National or New Mexico Ambient Air Quality Standard. Air quality dispersion modeling was conducted assuming all three generators were operating simultaneously. Compliance was shown with all ambient standards. The dispersion modeling analysis is included in Attachment K to this application.

20.2.7 NMAC – Excess Emissions During Malfunction, Startup, Shutdown or Scheduled Maintenance

Operation of the generators during startup and shutdown will be conducted in a manner to minimize any excess emissions. The equipment will only be used by trained personnel and will be operated using detailed operating specifications to ensure safety of the operators. In the event of any excess emissions, LANL will comply with the notification requirements specified in 20 NMAC 2.7, Section 110.

20.2.18 NMAC – Oil Burning Equipment – Particulate Matter

This regulation does not apply to the small diesel-fired generators. It applies to units with a rated heat input capacity greater than 250 MM Btu/hr.

20.2.33 NMAC – Gas Burning Equipment – Nitrogen Dioxide

This regulation applies to boilers with a heat input of greater than 1 million MMBtu per year per unit. This regulation does not apply to small diesel-fired generators.

20.2.34 NMAC – Oil Burning Equipment – Nitrogen Dioxide

This regulation also applies to boilers with a heat input of greater than 1 million MMBtu per year per unit. This regulation does not apply to small diesel-fired generators.

20.2.61 NMAC – Smoke and Visible Emissions

This regulation will be applicable to the diesel-fired generators. The regulation limits visible emissions to less than 20% opacity. Opacity readings will be taken periodically during scheduled cold startup on fuel oil. LANL has employees on-site that are certified EPA Method 9 opacity readers.

20.2.70 NMAC – Operating Permits

LANL was issued a Title V operating permit in April 2004 (Operating Permit P100), and Mod 1 to the permit on June 15, 2006 (No. P100M1). The conditions within the New Source Review (NSR) permit issued for this application will be incorporated into LANL's operating permit subsequent to issuance of the NSR permit. As required by 20.2.70 NMAC, LANL will submit to NMED a permit modification for the Title V permit no later than 12 months from commencing operation.

20.2.72 NMAC – Construction Permits

The submittal of this application fulfills the requirements of this regulation to obtain an NSR permit prior to the start of construction of a new or modified source.

20.2.73 NMAC – Notice of Intent and Emission Inventory Requirements

This application meets the requirements of this regulation to submit a Notice of Intent (NOI) for the proposed project. Estimated actual emissions from these generators will be reported to NMED in the annual emissions inventory for LANL.

20.2.74 NMAC – Permits – Prevention of Significant Deterioration (PSD)

A PSD permit is not required for this project. See Attachment H of this application for a discussion of PSD applicability.

20.2.77 NMAC – New Source Performance Standards

This regulation adopts by reference the federal New Source Performance Standards (NSPS) at 40 CFR Part 60. There are no NSPS standards which apply to these small diesel-fired generators. The EPA published a final NSPS for Internal Combustion Engines in July 2006. However, the 3 generators included in this permit application were manufactured and installed prior to the date of applicability of this NSPS.

20.2.78 NMAC – National Emission Standards for Hazardous Air Pollutants

This regulation adopts by reference the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61. There are no NESHAP standards which would apply to these diesel-fired generators.

20.2.82 NMAC – Maximum Achievable Control Technology Standards for Source Categories of Hazardous Air Pollutants

This regulation adopts by reference the federal Maximum Achievable Control Technology (MACT) standards at 40 CFR Part 63. There are no MACT standards which would apply to these small diesel-fired generators.

Attachment J – Malfunction Plan

The 3 diesel-fired generators will be 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 generators during startup, shutdown, and malfunction will be in place, and will be made available to NMED upon request.

Attachment K – Air Dispersion Modeling

Attachment K
Air Dispersion Modeling Analysis

This report is a summary of the air dispersion analysis performed by LANL's Ecology and Air Quality (EAQ) group in support of a New Source Review (NSR) permit application for three diesel-fired generators at Technical Area (TA)-33. The purpose of the analysis is to demonstrate whether the proposed maximum permitted emissions will cause or contribute to an exceedance of any National or New Mexico Ambient Air Quality Standard.

Narrative summary of the proposed construction, modification, or revision.

LANL proposes to operate three diesel-fired generators within the boundaries of TA-33. The generators are needed for electrical power to support experimental research activities in this remote area where power is not otherwise available. The generators will be operated intermittently. There are no air emissions which will occur from the research activities other than from fuel combustion from the generator engines. Two of the generators are rated at 20 kilowatts, and the third generator has a rating of 25 kilowatts. In the permit application, LANL has requested an enforceable permit restriction limiting each generator to 500 hours of operation per year.

List of file names of the model input, output, and other files used.

The following Table 1 lists the file names of the files used in this analysis.

Table 1. File Names for ISCST3 Modeling

<u>Filename</u>	<u>Description</u>
9gCO33.inp 9gCO33.out	Input and output files for significance level evaluation of CO emissions from TA-33 miscellaneous generators
9g10PM33.inp 9g10PM33.out	Input and output files for significance level evaluation of PM10/TSP emissions from TA-33 miscellaneous generators
9gSOx33.inp 9gSOx33.out	Input and output files for significance level evaluation of SOx emissions from TA-33 miscellaneous generators
9gNOx33.inp 9gNOx33.out	Input and output files for significance level evaluation of NOx emissions from TA-33 miscellaneous generators
TA33ROI.inp TA33ROI.out	Input and output files for ROI determination of NOx emissions from TA-33 miscellaneous generators
TA33cNO2.inp TA33cNO2.out	Input and output files for evaluation of the cumulative impact of NOx from TA-33 New Generators and all

significant LANL sources	
SUR_NO2.inp SUR_NO2.out	Input and output files for evaluation of the cumulative impact of NOx from surrounding NOx sources (to 65km)
LOSAL95.met	The meteorological data file used in the modeling analysis
Agua Fria, Bland, Canada, Cochiti Dam, Espanola, Frijoles, Guaje Mountain, Horcado Ranch, Montosa Peak, Puye, Valle Toledo, White Rock	United States Geological Survey (USGS) digital elevation model (DEM) file used to supply terrain heights for sources, receptors, and buildings included in the model analysis. The metadata supplied with these files indicates that the elevations are in the UTM Zone 13, NAD27 coordinate system.

Discussion of Modeling Approach, Justification, Model Options, and Types of Analysis

The February 2006 version of the “New Mexico Air Quality Bureau – Dispersion Modeling Guidelines” (NMAQB Guidelines) was reviewed prior to this analysis. In addition to the procedures and requirements provided in the NMAQB Guidelines, the procedures given in the EPA’s Guideline on Air Quality Models (40 CFR Part 51, Appendix W) were followed.

Models Used and their Justification

The ISCST3 model was used in the dispersion analysis. LANL also employed a graphical user interface to the ISC model produced by Lakes Environmental to more effectively implement the ISCST3 model. The following runs were conducted:

- screening analysis to determine if significance levels were exceeded and area extent of significance levels
- analyses of radius of impact (ROI), (for those pollutants exceeding the significance level at locations outside the facility fence line) and the cumulative impacts for all LANL Permitted sources
- modeling runs to determine the cumulative impacts from surrounding sources (to 65km) for a cumulative impact analysis (CIA)

Model Options and their Justification

The following modeling options were used in the dispersion analysis:

- The modeling options specified in the modeling protocol were used.
- Under source type options, we selected and used the type POINT for all generators. We used the actual (known) stack parameters for the 225 kW generator. We selected a conservative set of stack parameters for the two small generators and grouped them as one source.
- MSGPRO—The NMAQB Guidelines recommend selecting this option when using meteorological data from the Bureau's archive. This option allows the ISCST3 model to continue running in the event that missing data is encountered in the meteorological data file. With this option selected, ISCST3 treats missing data similarly to "calms". Although this option was selected, examination of the meteorological data file did not reveal any missing data.
- HE>ZI—This option addresses the potential problem that occurs when the receptor elevation is lower than stack base elevation, which can occur at Los Alamos due to the terrain complexity. In this situation, the mixing layer height (ZI), which is terrain following, may be lower than the effective plume height (HE), which is horizontal. This affects the plume "reflection" calculation in ISCST3, leading to erroneously large concentrations. By selecting this option, the model limits the plume centerline height to be less than the mixing layer height, resulting in realistic concentrations.
- The conservative "simple and complex" terrain option is selected by omitting the NOSMPL and NOCMPL keywords on the model option control pathway. Using this method allows ISCST3 to implement both simple (receptor height below stack height) and complex (receptor height above plume height) terrain algorithms when calculating concentrations. For intermediate terrain (receptor height between stack height and plume height), ISCST3 will calculate

concentrations using both simple and complex terrain algorithms, and the higher of the two concentrations is selected.

Discussion of the Meteorological Data including identification of the source

One year of meteorological data was supplied from an on-site met tower located at TA-6. The distance from the tower to the release site is about 10 km. The file consists of hourly surface data from the LANL met-tower and mixing height data from Albuquerque International Airport. Meteorological data for 1995 was used because it is the most recent annual data set quality assured and formatted for model input by NMED. LANL does have on-going meteorological measurements, but a more recent annual data set would not equate to a better data set or change the model results in any appreciable way.

USGS Map Showing Location of Facility

Attachment E to this permit application shows a copy of a 7.5 minute USGS topographical map with the location of the site of operations at TA-33.

Description of the Site, Building Dimensions and a Plot Plan

Site Description

The three generators included in this permit application will be operated at TA-33, which is about 4 miles southwest of White Rock. A plot plan is provided as Attachment B to this permit application. To simplify input to the dispersion model, the two smaller generators, which are co-located, were grouped as one source (and one source location). The coordinates used in the modeling analysis for the 2 smaller generators (source ID TA33_4_5) and the 225 kW generator (source ID TA33_H9) are provided in Table 2.

Table 2. Point Source Data used for TA-33 Generators as Input to the Dispersion Modeling Analysis

Source ID	UTM-E (m)	UTM-N (m)	Elevation (m)
TA33_H9	388830	3959190	1947.0
TA33_4_5	388650	3959200	1956.5

Criteria Pollutants Emitted by the Source.

The criteria pollutants emitted are nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), and particulate matter (TSP and PM₁₀). Table 3 provides emission rates for the pollutants included in the modeling analyses. Attachment C – Emission Calculations of this application provides a complete description of the basis for these emission rates.

Table 3. Pollutant Emission Rates Used in the Dispersion Modeling Analysis

Source ID	NO _x (gr/sec)	CO (gr/sec)	SO _x (gr/sec)	PM ₁₀ (gr/sec)	TSP (gr/sec)
TA33_H9	1.175	0.254	0.078	0.084	0.084
TA33_4_5	0.209	0.045	0.014	0.015	0.015

Averaging Time for Each Regulated Pollutant

The averaging times used in the modeling were 1 hour, 3 hours, 8 hours, 24-hours, and annual.

If modeled stack parameters differ from those listed in the report, explain why.

To simplify input into the model, the two small generators were grouped into a single source with conservative assumptions made in regards to the stack parameters used for modeling. The permit application forms provide the actual stack parameters for each of the three generators and Table 4 shows the stack parameters that were supplied to the ISCST3 model.

Table 4. Point Source Parameters Used as Input to the Dispersion Modeling Analysis

Source ID	Height (m)	Diameter (m)	Velocity (m/s)	Temperature (K)
TA33_H9	1.98	0.08	200	860
TA33_4_5	0.61	0.03	100	810

Modeling Results

Discussion of Screening Analysis for Significance Levels Determination

The annual average SO_x concentration was below the significance level of 1 µg/m³ for SO₂ at or beyond the site boundary. The radius of impact for the 1 µg/m³ concentration level only extended about 500m from the site of operations. The 24-hour average SO_x concentration was below the significance level of 5 µg/m³ at or beyond the site boundary. The radius of impact for the 5 µg/m³ concentration level only extended about 600m from the site operations. The 3-hour average SO_x concentration was below the significance level of 25 µg/m³ at and beyond the site boundary. The radius of impact for the 25 µg/m³ concentration level only extended about 500 m from the site operations.

Both the annual average PM₁₀ and TSP concentrations were below the significance level of 1 µg/m³ at or beyond the site boundary. The radius of impact for the 1 µg/m³ concentration level only extended about 600 m from the site of operations. The 24-hour average PM₁₀ and TSP concentrations were below the significance level of 5 µg/m³ at or beyond the site boundary. The radius of impact for the 5 µg/m³ concentration level only extended about 400 m from the site operations.

The 8-hour CO significance level was not exceeded nor was there any corresponding ROI. The 1-hour CO significance level was not exceeded nor was there any corresponding ROI. This demonstrated compliance with NAAQS and NMAAQs for SO₂, CO, PM₁₀ and TSP pollutants (and averaging times), and further analysis is not required. However, as shown in Table 5, the significance levels for NO₂ were exceeded for the 24-hour averaging period. The modeling domain for the screening analysis and the location and extent of the NO_x impacts are shown in Figure 1. The results from the screening analysis are given in Table 5.

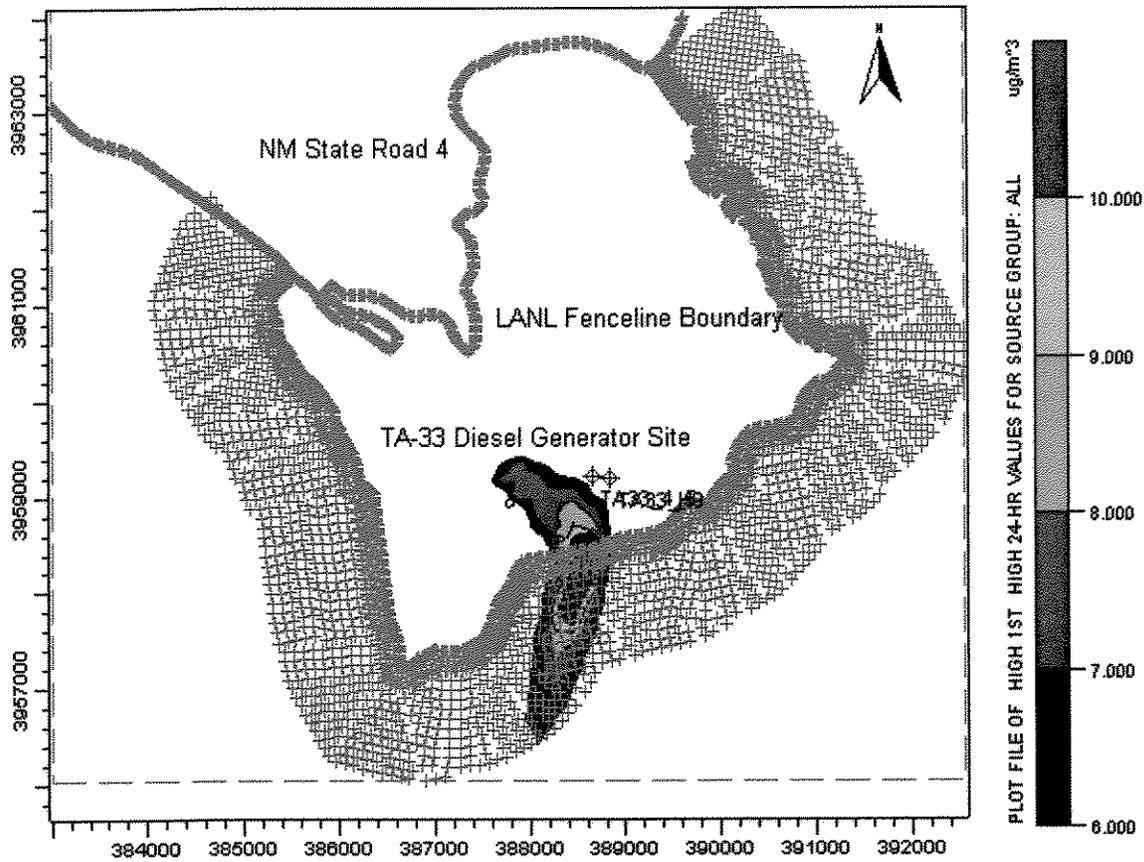


Figure 1. Modeling Domain for TA-33 Generators Site showing fine grid receptor grid along LANL’s southern property boundary.

Table 5. Highest Offsite Air Quality Impacts of Emissions from the TA-33 New Generators Site and (significance levels).

	NO ₂	SO ₂	CO	PM ₁₀	TSP
	µg/m ³				
1-hour maximum average			<40 (2000)		
3-hour maximum average		4.1 (25)			
8-hour maximum average			<10 (500)		
24-hour maximum average	6.6 (5)	1.1 (5)		1.2 (5)	1.2 (5)
Annual geometric mean					0.01 (1)
Annual arithmetic mean	0.08 (1)	0.01 (1)		0.01 (1)	

Discussion of Radius of Impact Determination for NO₂

For these particular new sources, the resulting concentrations for NO_x exceeded the significance level for the 24-hour averaging period (significance level = 5 µg/m³). The distance from the center of LANL to the furthest extent of the significant impact was

about 10 km. Thus the area to be included for the cumulative impact analysis is about 20 km wide. A map showing the radius of impact is given as an attachment to this modeling report. The ambient ration method, as discussed in the Modeling Guidelines, was used to reduce the ROI.

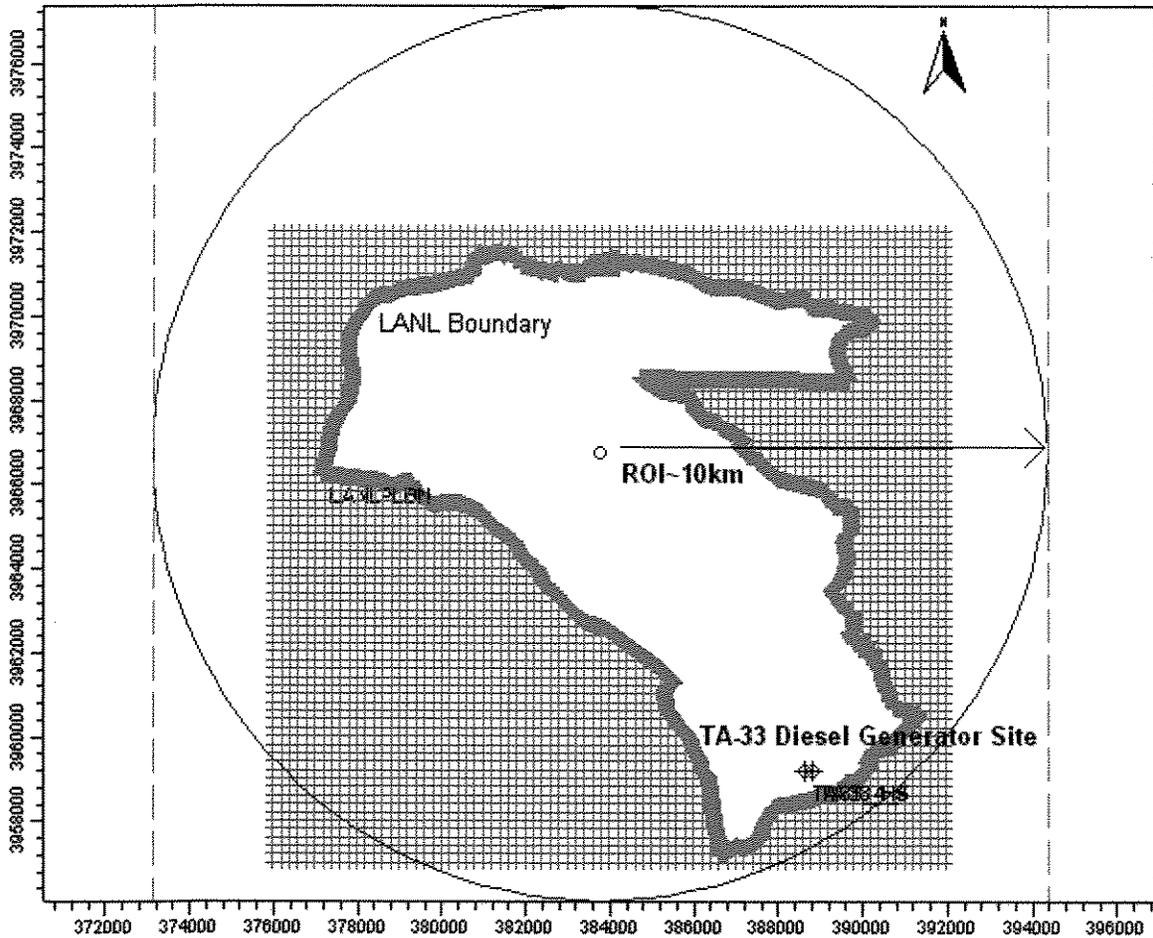


Figure 2. Modeling domain for determining the Radius of Impact due to NOx emissions from the TA-33 Generators Site.

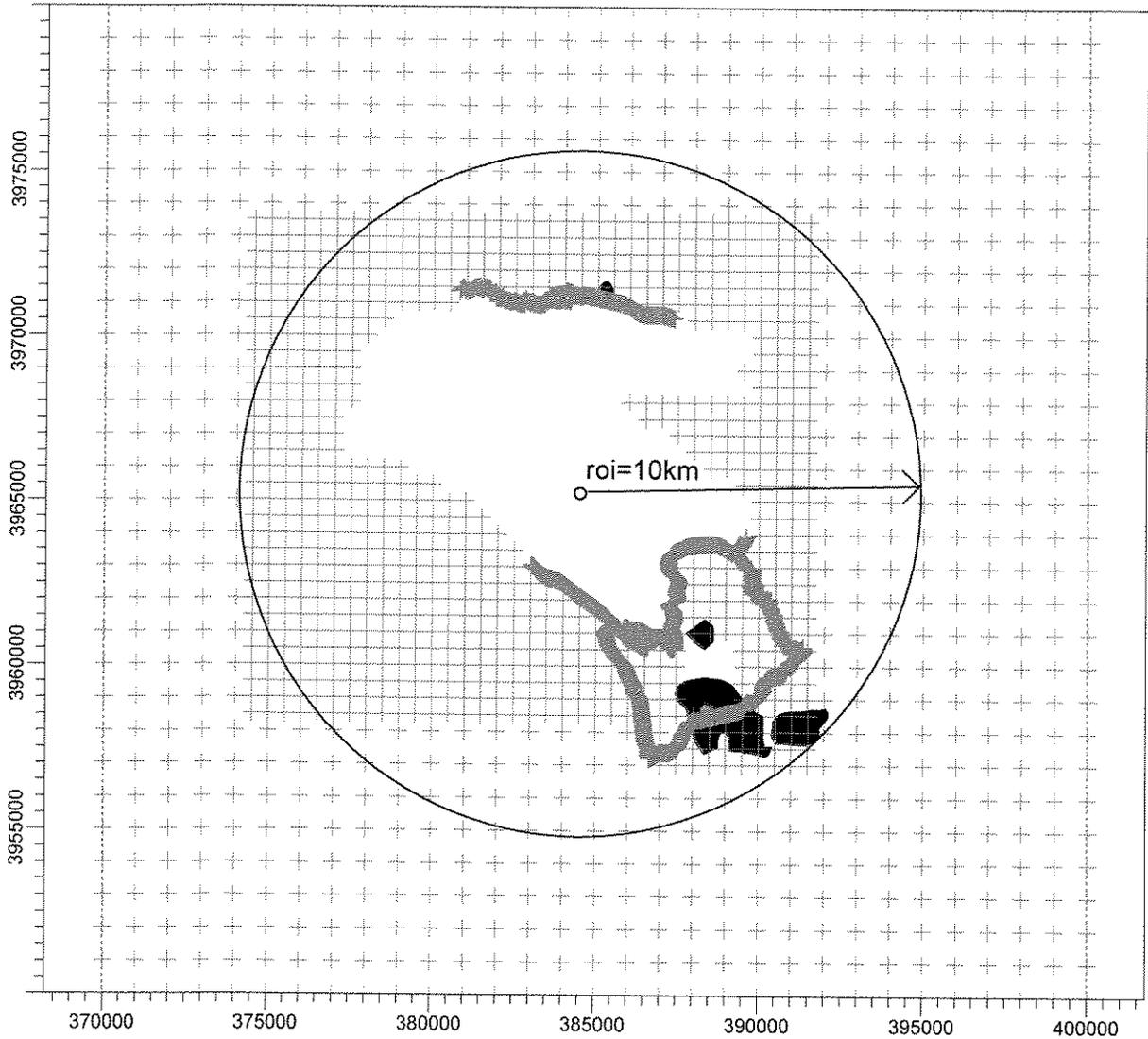
Cumulative Impact Analysis

The results of the modeling run for the cumulative impacts of all LANL NOx sources were combined with the modeling run for surrounding non-LANL NOx sources (to 65 km) receptor locations. The results from this cumulative impacts analysis are provided in Table 6. The eight locations provided in the table represent receptors where the highest offsite NOx concentrations occur, as determined in this current set of modeling analysis and in previously submitted modeling analyses.

The highest overall offsite concentration of NO_x for the annual averaging period was about 4.5 µg/m³ or about 6% of the NMAAQS. The highest overall offsite concentration was about 44 µg/m³ or about 29% of the NMAAQS. Note, these values have not been adjusted for NO₂ conversion. Thus the results from the cumulative impacts analysis show that maximum impacts from the new TA-33 generators along with significant LANL NO_x sources combined with surrounding NO_x sources (to 65 km) do not exceed applicable NAAQS or NMAAQS.

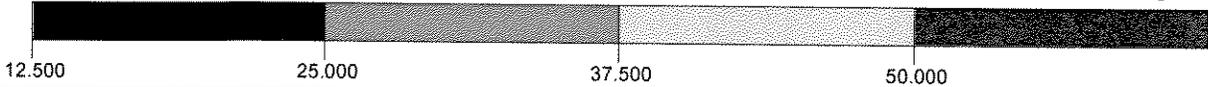
PROJECT TITLE:

**TA-33 Generators ISCST3 ROI evaluation for NOx
Cumulative impacts of significant LANL NOx sources.**



PLOT FILE OF HIGH 1ST HIGH 24-HR VALUES FOR SOURCE GROUP: ALL

ug/m³



COMMENTS: Map showing approximate radius of impact for the 24-hour NOx Significance Level	SOURCES: 16	COMPANY NAME: DOE/Los Alamos National Laboratory	
	RECEPTORS: 3086	MODELER: Meteorology and Air Quality Group	
	OUTPUT TYPE: CONC	SCALE: 1:204,619 	
	MAX: 43.3525 ug/m³	DATE: 5/10/2006	PROJECT NO.:

Attachment to Air Dispersion Analysis

A list of sources and their ISCST3 identification as used in the cumulative modeling analysis.

	Descriptive Name	ISCST3-ID	note
1	Power Plant, 1st Exhaust Stack	TA3_22_1	
2	Power Plant, 2nd Exhaust Stack	TA3_22_2	
3	TA-33 Diesel Generator	TA33_DG1	
4	TA-21-357 Boilers (3)	TA21_B3	
	TA-21 Rock Crusher	TA21_RC1	1
5	TA-60 Asphalt Plant	TA60_AP1	
6	TA-59-1 Boilers (2)	TA59_B2	
7	TA-55-6 Boilers (2)	TA55_B2	
8	TA-53-385 Boilers (2)	TA53_B2	
9	TA-50-2 Boiler	TA50_B1	
10	TA-48-1 Boilers (3)	TA48_B3	
11	TA-16-1484 Boilers (2)	1484_B2	
12	TA-16-1485 Boilers (2)	1485_B2	1
	TA3-38 Carpenter Shop	TA3_38C	2
	TA15-563 Carpenter Shop	T15_563C	2
	TA52-11 Data Disintegrator	TA52_PS	2
13	TA-3 Combustion Turbine	TURBINE	3
14	TA-55 CMR-R Facility Boilers (5)	CMRRSTK1	3
15	TA-33 225 kW Generator	TA33_H9	
16	TA-33 20 kW Generators (2)	TA33_4_5	

notes:

1 These sources are no longer in operation.

2 These sources have Particulate Matter emissions only.

3 Construction of these sources is not yet complete and they have not been operated