

Data Base Summary (Statement of Basis)
NSR Permit

Activity Type	Size	PSD	¹ NSP S	¹ NESH AP	¹ 20 NMAC	¹ Monit.	¹ Rcrd.	¹ Rpt.
Regular-New	B	MIN			X	X	X	X

¹ Enter "X" if column applies

Identify:

Size: A (Maj >100 TPY PTE), B (Min <100 TPY PER), SM (Synthetic Minor < 100TPY PTE)

PSD: NEW (New Facility), MIN (Minor Mod), MAJ (Major Mod)

PERMIT WRITER: Michael Schneider
DATE: January 9, 2007
PERMIT NO. 2195-P
IDEA ID No. 856 - PRN20060014
AS ID No. 350280001
SIC CODE: 9711: National security
FACILITY TYPE: FED-Dept of Energy
COMPANY: U.S. Department of Energy National Nuclear Security Administration
FACILITY: Los Alamos National Laboratory
APPLICATION DATE: September 7, 2006
RECEIVE DATE: September 18, 2006
RULED INCOMPLETE: Not Applicable
RULED COMPLETE: October 17, 2006
APP. SENT TO FIELD OFFICE: October 17, 2006
PSD APP. SENT TO EPA: Not Applicable
PUBLIC NOTICE: October 21, 2006
COMMENTS DUE: November 20, 2006
ANALYSIS REVIEW BEGINS: March 9, 2007
ANALYSIS REVIEW ENDS: April 8, 2007
PUBLIC HEARING: July 12, 2007

PERMIT DUE: January 15, 2007
PERMIT ISSUED:
FACILITY LOCATION: This facility is located in the town of Los Alamos in Los Alamos County, New Mexico.
UTM ZONE: 13
UTMH: 383000
UTMV: 3969300
ELEVATION: 6437 ft
COUNTY: Los Alamos

CONTACT NAME: Dianne Wilburn
Phone: 505-667-6952
Fax: 505-665-8858
Email: dwwilburn@lanl.gov

CONTACT ADDRESS: PO Box 1663
 MS J978
 Los Alamos, New Mexico 87545

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

Pollutant	Emissions (tons per year)	Emission Type
Sulfur Dioxide	< 1	Allowable
Carbon Monoxide	< 1	Allowable
Nitrogen Dioxide	3	Allowable
Volatile Organic Compounds (VOC)	< 1	Allowable
Particulate Matter (total suspended)	< 1	Allowable
Particulate Matter (10 microns or less)	< 1	Allowable
Particulate Matter (2.5	< 1	Potential

microns or less)		
------------------	--	--

Total HAPS and NM TAPS that exceed one ton per year (for information only, not an enforceable condition):

Pollutant	Emissions (tons per year)	Emission Type
Not Applicable	Not Applicable	Not Applicable

AIR POLLUTION CONTROL DEVICES:

Subject Item ID	Subject Item Type	Comments
Not Applicable	Not Applicable	Not Applicable

EQUIPMENT SPECIFICATIONS (Active):

Unit No. TEMPO SI No.	Unit Type	Manufacturer	Model No.	Serial No.	Yr of Construction	Yr of Manufacture r	Operating Rate Max/Site	Operating Capacity Max/Site	Subject Item Status	Subject Item Description
EQPT119 Gen-20kw-a	Internal combustion engine	Kohler	20EORZ	2025460	2/1/2005	2/1/2005	26.8 hp / 26.8 hp	20 kW / 26.8 hp	Active	Kohler Diesel Generator 20EORZ
EQPT120 Gen-20kw-b	Internal combustion engine	Kohler	20EORZ	2025461	5/1/2005	5/1/2005	26.8 hp / 26.8 hp	20 kW / 26.8 hp	Active	Kohler Diesel Generator 20EORZ
EQPT121 Gen-225kw	Internal combustion engine	Caterpillar	RGH010	E36CLC12	10/1/1999	10/1/1999	302 hp / 302 hp	225 kW / 302 hp	Active	Caterpillar Diesel Generator XQ225

EMISSIONS:

Pollutant Permitted (Allowable) Emissions per piece of equipment or Subject Item as represented by applicant.

Unit No.	NO ₂ (pph)	NO ₂ (tpy)	CO (pph)	CO (tpy)	VOC (pph)	VOC (tpy)*	PM ₁₀ (pph)	PM ₁₀ (tpy)	TSP (pph)	TSP (tpy)	SO ₂ (pph)	SO ₂ (tpy)
Unit Gen-20kw-a (EQPT119)	0.8	0.2	0.2	0.04	0.07	0.02	0.06	0.01	0.06	0.01	0.06	0.01
Unit Gen-20kw-b (EQPT120)	0.8	0.2	0.2	0.04	0.07	0.02	0.06	0.01	0.06	0.01	0.06	0.01
Unit Gen-225kw (EQPT121)	9.3	2.3	2.0	0.5	0.8	0.2	0.7	0.2	0.7	0.2	0.6	0.2

Emission Calculation Review:

LANL requests allowable emissions for three engines based on 500 hours annually for each engine. Two of these engines are 27 HP Kohler Diesel Generators (Model No. 20 EORZ) and the third engine is a 302 HP Caterpillar Diesel Generator (Model RGH010). LANL used AP-42 Emission factors from Section 3.3. Gasoline and Diesel Industrial Engines to calculate criteria and hazardous air pollutant emissions. The values are in horsepower and kilowatt hours. One kilowatt is equal to approximately 1.34 horsepower. The two Kohler engines are equivalent to 27 HP each and the Caterpillar engine is approximately 302 HP. The equation used to calculate emissions is as follows: Emission factor lb/hp-hr * hp = lbs/hr for each pollutant. Annual emissions are calculated taking lb/hr * 500 hours/year / 2000 = tpy for each pollutant. I reviewed all criteria emission calculations and found them to be correct (see attached sheets). HAP emissions from these engines are negligible as expected given their small size and limited annual operating hours.

February 26, 2007, the modeling section asked that I verify the basis for the stack velocities of 424 and 730 feet per second as these values are three to five times higher than what we typically see (approximately 150' per second). I put a call into LANL asking for clarification.

I asked LANL and they provided Kohler emissions data for the two smaller engines and Caterpillar data. These data are significantly less than the values found in AP-42 as shown below. Therefore, it appears that LANL used conservative emission factors to calculate allowable emissions by using AP-42 emission factors.

Emission Factor (grams/kw-hr)	NO_x	CO	PM
AP-42	18.85	4.06	1.34
Kohler	8.8	2.9	0.37
Caterpillar	6.7	0.54	0.14