Statement of Basis - Narrative
Title V Permit

Type of Permit Action: Title V Minor Permit Modification
Facility: Los Alamos National Laboratory
Company: U.S. Department of Energy National Nuclear Security Administration
Permit No(s).: **NSR:** 632, 634-M2, 1081-M1, 1081-M1-R1, 1081-M1-R3, 1081-M1-R5, 1081-M1-R6, 2195B-M3, 2195F-R4, GCP-3-2195G, 2195H, 2195N-R2 and 2195P-R2; **TV:** P100-R2M1 and P100-R2M4
Tempo/IDEA ID No.: 856 - PRT20190005
Permit Writer: James E. Nellessen

Permit	**Date to Enforcement:** N/A-minor mod	**Date of Reply:** N/A
	Date to Applicant: May 24, 2019	**Date of Reply:** May 30, 2019
	Date to EPA: May 30, 2019	**Date of Reply:**
	Date to Supervisor: May 14, 2019	

1.0 Facility Process Description:

The Laboratory is a Research and Development (R&D) institution owned by the Department of Energy/National Nuclear Security Administration (DOE/NNSA) and operated by Los Alamos National Security, LLC. It falls under the Standard Industrial Classification (SIC) 8733 - Noncommercial Research Organization. The primary mission of the Laboratory is to ensure the integrity and safety of the United States' current stockpile of nuclear weapons and nuclear materials. Laboratory scientists and engineers accomplish this mission and other non-weapons related research through acquisition of annual funding from various federal departments to support R&D activities. 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;
• Internal combustion engines such as standby generators to provide emergency power to buildings and operations;
• Wastewater treatment;
• Asphalt production for road repair; and
• Electroplating, chemical milling, metallographic, machining and/or casting using beryllium in some of these processes.

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

Air Quality Permit Category and Purpose of Laboratory-Wide Emissions Caps:

- **The Laboratory is a Title V Major Source** because its potential to emit of stack emissions of NOx, CO, VOC, SOx, TSP (now PM), PM10, and PM2.5 is greater than 100 tons per year (tpy). It is subject to a Title V Operating Permit per regulation 20.2.70 NMAC.
- **The Laboratory is a minor source for Hazardous Air Pollutants (HAPs)** since its potential to emit is less than 25 tpy for all HAPs combined and less than 10 tpy of any single HAP (e.g. formaldehyde, benzene). Both fugitive and stack emissions are included in the total HAPs. A minor HAP source is also called an area source.
- **Table 106.B – Facility-Wide Allowable Emissions** of Permit P100-R2M1 includes HAP emissions caps to ensure that the Laboratory remains a minor HAP source. If major, it would be subject to different or additional requirements in federal National Emission Standards for Hazardous Air Pollutants (40 CFR 63).
- See definition of Major Source in 20.2.70.7.R NMAC in the Title V Permit Regulation http://164.64.110.239/nmac/parts/title20/20.002.0070.htm
- **The Laboratory is a minor source for the Prevention of Significant Deterioration (PSD)** Preconstruction Permit Regulation 20.2.74 NMAC because its total potential to emit of stack emissions of regulated air pollutants, other than HAPs, are less than 250 tons per year per pollutant. Table 106.B requires facility-wide emissions caps for each regulated new source review pollutant (20.2.74.7.AS NMAC, definition applies only to pollutants promulgated by the US EPA, not NM) to ensure that the Laboratory remains a PSD minor source.
- **The Laboratory is still subject to minor source pre-construction permits** in regulation 20.2.72 NMAC. However, the criteria used to determine when a minor source construction permit is required is based on the emissions from a particular functional area, responsible LANL operating group, and/or by source type, and not from the entire Laboratory. See section 3-Source Determination of this Statement of Basis for more details.

Actual Laboratory Emissions Are Less than Potential to Emit:
Based on emissions inventories submitted by the Laboratory, its actual emissions of regulated air pollutants, including HAPs, have been consistently less than its Potential to Emit allowed by the Title V permit. However, LANL has requested that the Title V permit still require enforceable emissions caps for the laboratory to ensure that it is designated as PSD and HAP minor source.

2.0 Description of the Air Quality Permit Modification and Revisions:

Summary of and Applicability of the Correct Permitting Path for this Title V Minor Permit Modification (20.2.70.404.B NMAC)

Modification - Addition of One Evaporative Sprayer at SERF
This Title V Minor Permit Modification application adds one (1) evaporative sprayer to the existing five evaporative sprayers at the facility (see permit Section A1500). This unit has a maximum spray capacity of 24 gallons/minute (local site capacity of 20 gallons/minute) will be located at the Sanitary Effluent Reclamation Facility (SERF) located at TA-60/Sigma Mesa.

Purpose of SERF Facility

The SERF treats water for reuse at the Laboratory which reduces the use of potable water and waste water discharge. The volume of reject water in the evaporation basins must be reduced through mechanical evaporation sprayers since the natural evaporation process does not remove the reject water quickly enough for optimal SERF reclamation process. A detailed description of the water purification process at SERF can be found at this internet link to a video: https://www.youtube.com/watch?v=Y9CgznV4EHY&feature=youtu.be

Note on TSP/PM: The New Mexico Ambient Air Quality Standard (NMAAQS) for total suspended particulate matter (TSP) was repealed on November 30, 2018 and so the standards are no longer in effect (and TSP is no longer subject to regulation in any LANL permit). TSP emission limits and emission caps are equivalent to Particulate Matter (PM) which is still a regulated air pollutant under Title V and Prevention of Significant Deterioration (PSD) permit regulations since PM is regulated in some subparts of 40 CFR 60 (New Source Performance Standards, NSPS). The evaporative sprayers are not subject to any Subparts in 40 CFR 60 and PM is not subject to an Ambient Air Quality Standard (AAQS).

For this TV minor permit modification, AQB will add a reference to PM in the Section A1500 conditions, and in the upcoming TV Renewal Permit (P100-R3) change the existing TSP lab-wide emissions cap for TSP to PM. The permittee has submitted an application for TV renewal that is being reviewed by the AQB.

Verification of Minor Modification: Adding the one sprayer at SERF qualifies as a TV minor permit modification because it meets all the criteria in 20.2.70.404.B (1)(a) to (f) NMAC as follows. Minor Permit Modifications are ones that:

(a) Do not violate any applicable requirements: **The addition of the sprayer is not subject to a minor NSR permit per 20.2.72 NMAC because the maximum emission rates of all pollutants with a New Mexico or National Ambient Air Quality Standard (NM/NAAQS) from all six sprayers would be less than 10 pph and 25 tpy per pollutant. 20.2.72 NMAC applies only to pollutants with an AAQS. Neither TSP nor Particulate Matter (PM) are subject to an ambient air quality standard. Also, no permit condition, federal regulation, nor state regulation prohibits installation of the unit and modification of the Title V permit.**

(b) Do not involve relaxation of existing monitoring, reporting, or recordkeeping requirements in the permit: **The addition of the sprayer will not relax any of the existing conditions for monitoring, reporting, and recordkeeping (Section A1500), nor is the sprayer subject to any federal or state regulation that prohibits the addition of the sprayer. Wording is being added to Condition A1502 to clarify the implementation of the condition, it does not relax or change any existing requirements.**

(c) Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis: **The unit is not subject to any emissions standards required**

by PSD or nonattainment and is not subject to any state or federal emissions standards. Therefore, no case-by-case determination on an emission limit or standard is required.

(d) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the permittee has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include any federally enforceable emissions cap assumed to avoid classification as a title I modification and any alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Act: **The addition of the evaporative sprayer would not change any existing applicable requirements, emissions limits, or emissions caps in the permit.**

(e) Are not title I modifications: **No NSPS, NESHAPs, or MACTs apply to the sprayer unit and construction of the unit is not subject to PSD or nonattainment permitting.**

(f) Are not required by the Department to be processed as a significant modification pursuant to subsection C of 20.2.70.404 NMAC: **Addition of the sprayer is not required to be processed as a significant permit modification in 20.2.70.404.C(1)(a) through (d).**

Evaporative Sprayers at TA-60 SERF:
The change to the Title V permit adds one evaporative sprayer to be used in the synthetically lined evaporating water holding basins at the SERF located within Technical Area 60. The sprayers enhance the evaporation of the high Total Dissolved Solid (TDS) reverse osmosis reject water from the system that purifies wastewater for reuse in the Strategic Computing Complex Cooling Towers. The sprayers are sources of fugitive (not from a stack) particulate matter (PM) emissions and PM10 (particles that form from the water droplets) as well as Hazardous Air Pollutants (HAPs) and New Mexico Toxic Air Pollutants (NM TAPs) released from the evaporating water. The application shows that there are no PM emissions of PM2.5 size.

Air emissions from the evaporative sprayers are not subject to minor source construction permit under 20.2.72 NMAC because air emission rates from all sprayers combined are less than 10 pph and 25 tpy of Particulate Matter less than 10 microns (PM10), and Particulate Matter less than 2.5 microns (PM2.5)(applies only to pollutants with NAAQS/NMAAQS); and there are no other sources of regulated air pollutants at the SERF. Mass emission limits for the sprayer units listed in Table A1500.A are not necessary since the SERF facility is not subject to new source review permit requirements per 20.2.72, 20.2.74, or 20.2.79 NMAC. The permittee shall demonstrate compliance with the emission rates represented in the permit application through emissions inventory records and maintenance and repair of the units.

<u>SERF Equipment is Subject under the Title V Operating Permit:</u>
The calculated PM10 Potential to Emit (PTE) for the five existing sprayers was 0.3 tons per year (and 0.0 tpy of PM2.5). The new (sixth) sprayer has a calculated PM10 PTE of 8.4 tpy (and 0.0 tpy of PM2.5). Hence, the total PM10 PTE for all 6 sprayers is 8.7 tpy (0.0 tpy PM2.5), below the 25 tpy NSR threshold. The calculated PM PTE for the five existing sprayers was 6.1 tpy, and the new sixth sprayer is 128.8 tpy. The sprayers are not a Title V Insignificant Activity and have been

added to the Title V permit. PM is a regulated air pollutant under Title V and PSD. An explanation of these calculations is located in Section 15 of this Statement of Basis.

HAPs and NM TAPs from SERF:
Emissions of HAPs are not subject to a minor source construction permit because that regulation does not apply to HAPs, but the Title V regulation does. NM TAPs are also not subject to a construction permit since no NM TAP is emitted at the lb/hr permitting thresholds listed in Tables A and B located at 20.2.72.502 NMAC.

Emissions Inventory reporting shall conform to 20.2.1.116 NMAC which is cited as an applicable requirement in the Title V permit. The language from 20.2.1.116 NMAC is shown below to address concerns about the cumulative effect of rounding down emission estimates for the emissions inventory reporting and compliance with emission caps.

20.2.1.116 SIGNIFICANT FIGURES:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least five significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) if the first digit to be discarded is less than the number five, the last digit retained shall not be changed;

(2) if the first digit discarded is greater than the number five, or if it is the number five followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; and

(3) if the first digit discarded is exactly the number five, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.

D. The final result of the calculation shall be expressed in the units of the standard.

3.0 Source Determination:

Title V, PSD, NNSR Sources:

1. The emission sources evaluated include: The individual stationary air emission sources that are grouped to determine the Laboratory's air emissions for the Title V (20.2.70 NMAC), Prevention of Significant Deterioration (PSD) (20.2.74 NMAC), or Nonattainment (NNSR) 20.2.79 NMAC permit regulations includes all individual stationary sources of regulated air pollutants within the entire set of complexes and Technical Areas that, in total, comprise the Los Alamos National Laboratory (LANL).

Minor Construction Sources:

The minor source construction permit regulation at 20.2.72.7.EE NMAC defines the entire stationary source differently than the Title V, PSD, and NNSR permit regulations. The minor source regulation requires approval from the Secretary to consider the entire laboratory as one single stationary source. Therefore, for the minor source regulation, sources are grouped by each functional area (e.g., Sanitary Effluent Reclamation Facility), responsible LANL operating group (Utilities and Institutional Facilities Operations), and/or source type (asphalt plant), and not by the entire laboratory. The source definition from the minor source construction permit regulation: 20.2.72.7.EE: "Stationary source" or "source" means any building, structure, equipment, facility, installation (including temporary installations), operation or portable stationary source which emits or may emit any air contaminant. Any research facility may group its sources for the purpose of this

part at the discretion of the secretary. (underline added for emphasis)

2. Single Source Analysis:

A. SIC Code: Do the facilities belong to the same industrial grouping (i.e., same two-digit SIC code grouping, or support activity)? Yes, the entire laboratory falls under one SIC code which is 8733 Noncommercial Research Organizations.

B. Common Ownership or Control: Are the facilities under common ownership or control? Yes, the LANL operator is Los Alamos National Security, LLC and LANL's owner is US DOE NNSA and therefore it is under common ownership and control.

C. Contiguous or Adjacent: Are the facilities located on one or more contiguous or adjacent properties? All laboratory operations subject to air quality permitting are located on contiguous and/or adjacent properties.

3. Is the source, as described in the application, the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes? The entire Los Alamos National Laboratory (LANL) is considered the entire, single source for purposes of Title V 20.2.70, PSD 20.2.74, and Nonattainment 20.2.79 NMAC air permit regulations. However, pursuant to 20.2.72.7.EE NMAC, the source is defined as all stationary sources of regulated air emissions at the SERF which consists only of the spray evaporators authorized for operation in the evaporation ponds for the Sanitary Effluent Treatment Facility (SERF).

4.0 PSD Applicability:

LANL is a Prevention of Significant Deterioration (PSD) minor source. See the History Table for a summary of previous PSD applicability determinations. The additional emissions of TSP (PM) and PM10 from the sprayers are not high enough to trigger a PSD permit.

Hazardous Air Pollutants (HAPs) are not regulated under the PSD permit regulation. HAPs are regulated by source specific National Emission Standards for Hazardous Air Pollutants (NESHAP) promulgated by EPA with all applicable requirements incorporated into a Title V Operating Permit.

5.0 History (In descending chronological order, showing NSR and TV):

*The asterisk denotes the current active NSR and Title V permits that have not been superseded.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
*P100-R3	TBD	TV Renewal	Application ruled complete April 26, 2019 and will be reviewed for applicable requirements for the renewal.
*P100-R2M4	TBD	TV Minor Mod	To add one evaporative sprayer at the SERF facility.
*2195-R79	5/10/2019	NSR NOE	Add an electric powered thermal evaporator.
*2195-R78	4/23/2019	NSR NOE	For exempt heaters for personal comfort (each < 5 MMBtu/hr).
*2195-R77	11/20/2018	NPR	To add one thermal evaporator for the RLWTF.
*2195-R76	11/21/2018	NSR NOE	Exempt cooling tower, PM PER = 0.11 tpy.
P100-R2M3	10/17/2018	TV Admin	Update operator name to Triad National Security, LLC.
*2195-R75	10/11/2018	NPR	Add 4 Kubota diesel engines (all ≤ 10.5 hp) to TA-46.
*2195-R74	9/28/2018	NSR Admin	Triad National Security reported as operator of LANL.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
*2195B-M3	7/26/2018	Significant Permit Revision	Three phased TA-3 Power Plant Replacement: During Phase I the power plant will consist of three boilers, one combustion turbine, and minor NSR exempt equipment. In Phase 1 two new auxiliary boilers are authorized for construction (Units TA-3-22-4 and TA-3-22-5); two of the existing boilers (TA-3-22-1 and TA-3-22-2) will be permanently shut down. Phase 1 also includes installation of the exempt comfort heaters and makeup air heaters. Phase 2 is the piping upgrade and has no air emission sources. During Phase 3, the power plant will consist of two boilers and a combustion turbine fitted with a heat recovery steam generator (HRSG) with a natural gas fueled duct burner, and minor NSR exempt equipment
*2195-R73	7/18/2018	NSR NOE	Add three emergency generators at TA-50-184, TA-55-474 and TA-55-475.
P100-R2M2	5/7/2018	TV Admin	Update operator name to Los Alamos National Security, LLC, and Newport News Nuclear BWXT-Los Alamos, LLC.
*2195-R72	5/8/2018	NSR NOE	For 16 exempt gas-fired heaters (each < 5 MMBtu/hr) and change a solvent degreaser in permit to exempt status.
*2195-R71	6/12/2017	NSR NOE	For an emergency standby generator (Cummins) for TA-54-375.
*2195-R70	2/28/2017	NSR NOE	For 15 exempt gas-fired heaters (each < 5 MMBtu/hr).
*P100-R2M1	2/3/2017	Title V Minor Permit Modification	**TA 54 SVE:** This permit revision removed the conditions in Section A113 of the Title V Operating permit for the TA 54 MDL Soil Vapor Extraction (SVE) unit. This is because the requirement was completed to verify that the SVE air emissions are Title V Insignificant, activity number 1.a and 1.b. The condition required that the permittee, using data from the SVE stack, calculate and report the emission rates of HAPs and New Mexico TAPs. The SVE system is a Title V Insignificant Activity emissions of which must be included in the facility-wide HAPs emissions cap. The requirements of this condition were satisfied and no longer applied as of March 9, 2016. **Water Evaporator Sprayers TA-60:** Add 5 floating evaporative sprayers to the Title V permit (units TA-60-EVAP-1 to -EVAP-5) for the LANL Sanitary Effluent Treatment Facility (SERF). Existing sprayer unit TA-60-EVAP, model number 420, is not authorized to operate and was shut down as of June 28, 2016 and then decommissioned as per Voluntary Disclosure and Corrective Action received on 7-18-16. The TSP NMAAQS is not an applicable requirement in title V, however, TSP is a regulated air pollutant subject to Title V permitting (see 20.2.70.7.AC(a)). Also per 20.2.70.302.A(8) NMAC fugitive emissions, as well as stack emissions, from a source are also subject to regulation in the operating permit. Hazardous Air Pollutants (HAPs) from the evaporative sprayers are verified in Condition A1507.A by calculating the tons per year emission rates using hours of operation and the most recent water analysis. Although New Mexico TAP (NM TAP) emission rates are too low to regulate for this source, the permit still requires

Permit Number	Issue Date	Action Type	Description of Action (Changes)
			verification of these emission rates and reporting to the Air Quality Bureau. Numerical air emission limits from the evaporative sprayers are not appropriate because the emission rates are minimal; they are fugitive and cannot be directly measured; TSP and PM10 pollutants from this source do not require air dispersion modeling; and hazardous air pollutants (HAPs), including those from the evaporative sprayers, must be inventoried and reported from the entire Laboratory every 6 months. **Air emission rates estimated from ground water samples and reported in the application from the evaporative sprayers are:** 1.40 pph/6.12 tpy TSP; 0.07 pph/0.29 tpy PM10; ton per year (tpy) emissions of the following HAPs are: 0.0000000138 PCBs, 0.00000633 chloroform, 0.0000434 chloromethane, 0.000056 bromoform, 0.000129 cyanide, 0.000465 manganese, 0.00022 antimony, and 0.001 total HAPs. NM Toxic Air Pollutants (NMTAPs) are not subject to permit requirements since each TAP is below the regulatory threshold that requires a permit.
*2195-R69	8/5/2016	No Permit Required (NPR)	Addition of a minor NSR exempt vacuum plasma spraying chamber in Building 66 of Technical Area 3 consisting of a Medicoat AG spray chamber and a GPC Cyclone dust collector.
*2195-R68	3/31/2016	NSR NOE	For 1 exempt stand-by diesel generator at TA-63.
*2195-R67	3/31/2016	NSR NOE	For 7 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R66	7/22/2015	NSR NOE	A research project lasting three to six months regarding the February 2014 waste drum incident at the Waste Isolation Pilot Plant (WIPP). The project scope involved applying heat to four (4) drums containing surrogate non-radiological materials similar to the incident drum. Ignition may or may not occur. The drums are heated within steel transportation containers equipped with HEPA filtration.
*2195-R65	3/27/2015	NSR NOE	For 10 exempt gas-fired heaters (each < 5 MMBtu/hr).
P100-R2	2/27/2015	Title V Renewal	Renewal of Title V permit. Incorporates changes since P100R1M3 issued 4/26/13. Petitioners petitioned title V Permit No. P100-R2 to the Environmental Improvement Board and a hearing was completed. See hearing record under EIB 15-02(A). A copy of the final decision is in the permit file. **See statement of for P100R2 for information regarding fire fighter training and asbestos as it applies to the open burning regulation at 20.2.60 NMAC.**
*2195-R64	6/27/2014	NSR NOE	For 10 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195X	6/20/2014	NPR	spray evaporation system (TA-60-EVAP). This unit was decommissioned June 28, 2016.
*2195LR1	5/29/2014	NPR	Two soil vapor extraction units (TA-54-SVE, East and West).
*2195-R63	4/4/2014	NSR NOE	For 2 exempt stand-by generators at TA-55.
*2195-R62	1/15/2014	NSR NOE	For 1 exempt cooling tower for LANL Super Computing Complex (TA-3-2327).

Permit Number	Issue Date	Action Type	Description of Action (Changes)
*2195PR4	1/3/2014	Pre-Construction (NSR) Admin Rev	Temporary relocation of all diesel generators permitted under NSR permit 2195P.
*2195-R61	12/15/2013	NSR NOE	For 1 exempt gas-fired heater (< 5 MMBtu/hr).
*2195-R60	12/15/2013	NSR NOE	For 1 exempt gas-fired heater (< 5 MMBtu/hr).
*2195FR4	12/12/2013	Pre-Construction (NSR) Tech Rev	Replacement of stationary TA-33-G-1 with a portable unit. Eliminates 40 CFR Subpart ZZZZ applicability.
2195PR2 and 2195PR3	8/27/2013	Admin Rev	Temporary relocation of 2 20KW gensets from TA-33 to TA-39.
*2195-R59	5/14/2013	NSR NOE	For emergency stand-by diesel generator at TA-50-69.
*2195-R58	5/14/2013	NSR NOE	For 1 exempt gas-fired heater (< 5 MMBtu/hr).
P100R1M3	4/26/2013	Admin Rev	Removal of four retired boilers (TA-48-1-BS-2 & 6 and TA-59-1-BHW-1 &2) from list of regulated sources.
*2195-R57	3/18/2013	NSR NOE	For emergency stand-by diesel generator at TA-48-1.
P100R1M2	12/26/2012	Admin Rev	Retirement of four boilers (TA-48-1-BS-2 & 6 and TA-59-1-BHW-1 & 2) from list of regulated sources.
*2195-R56	12/26/2012	NSR NOE	For 4 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R55	11/8/2012	NSR NOE	For 4 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195PR1	11/20/2012	Admin Rev	NOE for two (2) process related, Honda gasoline-fired portable generators, and the capacity of 2.8 hp (2.1 KW) each for Technical Area No.33.
*2195-R54	10/5/2012	NSR NOE	For 10 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R53	10/5/2012	NSR NOE	For 1 exempt cooling tower at TA-53-2.
*2195NR2	9/25/2012	Tech Rev	Remove initial compliance testing on backup fuel oil.
P100R1M1	6/15/2012	Title V Significant Modification	Incorporates NSR 2195B-M2.
*2195-R52	6/12/2012	NSR NOE	For 1 exempt gas-fired heater (< 5 MMBtu/hr).
*2195-R51	5/2/2012	NSR NOE	For 2 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R50	12/30/2011	NSR NOE	For 1 exempt gas-fired heater (< 5 MMBtu/hr).
*2195-R49	12/30/2011	NSR NOE	For 1 exempt standby generator at RLWTF.
2195V	12/9/2011	NPR	Construct and operate portable MSS generator.
2195B-M2	11/1/2011	Tech Rev	Increase allowable annual natural gas fuel consumption by the Combustion Turbine and reduce annual allowable fuel oil usage.
*2195-R47	8/30/2011	NSR NOE	For 5 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R46	8/2/2011	NSR NOE	For 1 exempt water evaporator.
*2195-R45	7/28/2011	NSR NOE	For 1 exempt cooling tower at TA-55-6.
*2195-R44	4/27/2011	NSR NOE	For 4 exempt gas-fired heaters (each < 5 MMBtu/hr).
*2195-R42	12/1/2010	NSR NOE	For 1 exempt stand-by generator at TA-55-371.
2195U	9/20/2010	NPR	RLWTF (TA-50) Thermal Evaporation Unit.
2195T	12/16/09	NPR	Emergency Operation Center Portable Generator.
P100-R1	8/7/09	Title V Renewal	Incorporates changes since P100R1: 2195NR1, 2195F-R2, P100M2, and 2195P. Also includes 1081-M1-R6, prior to P100M1. For specific changes see 2.0 Description of this Modification above.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
2195B-M1R2	3/5/09	Technical Rev	Changed the method for monitoring emissions from the CT, from a calculation based on fuel usage to direct measurement of stack emissions using a portable analyzer. This permit supersedes all portions of Permit No. 2195B-M1-R1, except the portion requiring compliance tests.
2195B-M1R1	10/14/08	Admin Rev	This revision consists of establishing use and exempt status of the following two emergency generators: 1) 1100 kW Cummins Generator, Model KTA50-G2 Location: TA-16 Weapons Engineering Tritium Facility (WETF), Bldg. 980 2) 1250 kW Cummins Generator, Model DFLC-5554001 Location: TA-3 Power Plant, Bldg. 1404.
2195F-R3	5/28/08	Technical Rev	Modification to recordkeeping condition 4.a to record the kilowatt-hours produced on a daily basis instead of the hourly basis required by the current permit. This permit supersedes all portions of Air Quality Permit 2195F-R2, except the portion requiring compliance tests.
2195N-R1	12/20/07	Admin Rev - NOE	Processed exempt sources: (3) three 1500 kW Cummins diesel powered generators to be located at Technical Area 55, Chemistry and Metallurgy Research Replacement Facility (CMRR). Request received on Dec. 11, 2007. *(Note this letter should have been number 2195N-R2.)*
2195S	11/25/07	NPR	NPR for power generation in TA-49-G1. The portable generator shall consist of one 10 kW generator powered by a diesel engine rated at 20.2 kW (27 hp), Cummins Onan diesel fueled generator with a Kubota engine.
2195P	8/8/07	New NSR	Construction and operation of three electrical generator engines at Technical Area 33. The function of the generator engines is to provide electricity for experiments in support of classified research.
P100M2	7/16/07	Admin Amendment	Retired Beryllium operations at the Chemistry and Metallurgy Research Facility at TA-3-29.
2195Q	1/30/07	NPR	NPR for the construction and operation of two micro electric discharge machines used to create small holes in beryllium gaskets at LANL, TA-39-89. This application was submitted as a follow up to the Department's June 22, 2005 determination (See 2195-O) that the micro electric discharge machines required a permit.
*GCP-3- 2195G-R1	9/12/06	GCP-3	GCP-3-Rev.1 issued by NMED-AQB.
2195F-R2	6/26/06	Admin Rev	Corrected a typographical error on the generator serial number and model number.
P100-M1	6/15/06	Title V Modification	Removed the Paper Shredder located at TA-52-11 and replaced it with the Data Disintegrator; removed Boilers TA-16-1485-BS-1 and BS-2, and the portable rock crusher; and installed a new 25 MW simple cycle natural gas turbine at the Power Plant at TA-3. P100M1 supersedes permit P100.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
*Various	6/14/06	Admin Rev	Changed the name of the facility operator from the University of California to Los Alamos National Security, LLC (LANS). (632-R1, 634-M2-R1, 1081-M1-R7, NPR 2195A-R1, 2195B-M1R1, 2195F-R1, GCP-3-2195G-R1, 2195H-R1, NPR 2195L-R1, 2195N-R1, 2195R-24, NOI 2597-R1.)
*1081-M1R6	5/12/06	Technical Rev	Replaced permitted vacuum furnace (1081M1R3) with a CM Model 1712 electric furnace. Modifies 1081-M1.
2195K-R1	1/12/06	Admin Rev – Closed	Canceled permit 2195K due to LANL no longer needing to perform the types of testing and activities authorized by the permit.
2195J-R1	1/17/06	Admin Rev – Closed	Canceled permit 2195J due to LANL no longer needing to perform the types of testing and activities authorized by the permit. Request received on Jan. 12, 2006.
2195N	9/16/05	New NSR	Authorized the construction and operation of phases A and B of the Chemistry and Metallurgy Research Building Replacement ("CMRR") facility. This facility consists of the Radiological Laboratory /Office Building ("RLOB") and the Utility Building ("UB"). Together, the two buildings are identified as the RLUOB. The function of the UB is to provide utility infrastructure and support to the CMRR facility.
2195O	6/22/05	Denial of NPR – Closed	The proposed research activity will use Electric Discharge Machines (EDM) to cause a static discharge and form a 50-μm-diameter hole in a beryllium gasket submerged in dielectric fluid. The Micro EDM device meets the definition of a "Machine Shop" found at 40 CFR § 61.31(d) and therefore the proposed research activity is subject to 40 CFR Part 60, Subpart C, National Emission Standard (NESHAP) for Beryllium. Therefore, a construction permit is required.
2195K	3/29/05	New NSR – Closed	This permit application is in response to NMED's 8/19/03 request that LANL submit a permit application pursuant to 20.2.72 for existing open burning activities which would not be allowed under 20.2.60 Open Burning. Technical Area - 36 ("TA") Sled Track is part of LANL's Dynamic Experimentation ("DX") Division. Permit Closed with 2195K-R1.
2195J	3/29/05	New NSR – Closed	This permit application is in response to NMED's 8/19/03 request that LANL submit a permit application pursuant to 20.2.72 for existing open burning activities which would not be allowed under 20.2.60 Open Burning. TA-16 Flash Pad uses an open flame generated from propane burners on a concrete pad to ignite or burn residual HE material from equipment used at the LANL (e.g. piping, office furniture etc.,). Permit Closed with 2195J-R1.
2195B-M1	7/30/04	Regular Sig. Rev	Authorizes the modification and operation of the Technical Area – 3 Power Plant (TA-3). This permit supersedes all portions of Air Quality Permit No. 2195B-R1
P100	4/30/04	New Title V	New operating permit issued for the facility.
*2195H	10/22/03	New NSR	Authorized the construction and operation of a 1200 lb/hr Data Disintegrator at TA-52.
2195I	08/28/03	NOI – Withdrawn	Withdrawn - NOI proposing to install a screening plant at LANL.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
2195B-R2	5/15/03	Admin Rev - NOE	This revision consists of a change in the site support services subcontractor and operator of the TA 3-22 Power Plant. KSL Services will be the new subcontractor and operator effective February 2003. Request received on March 5, 2003.
741-R1	11/25/02	Admin Rev – Closed	Surrendered Air Quality Permit 741 for the facility. Request received on Oct. 25, 2002. The construction never took place; therefore, the permit is no longer needed.
635-R1	11/25/02	Admin Rev – Closed	Surrendered Air Quality Permit 635 for the facility. Request received on Oct. 25, 2002. The final beryllium activities were conducted in the facility in Jan. 2001; thus the machine shop will be decommissioned. No further beryllium activities will occur at the facility and the permit is no longer needed.
2195B-R1	11/21/02	Technical Rev	Revised/Replaced emission limits table 2.1 in Permit 2195B.
GCP-3-2195G	10/29/02	GCP-3	New General Construction Permit (GCP-3) for Hot Mix Asphalt Plants. An 80 tph asphalt plant
2195F	10/10/02	New NSR	Construction and operation of a diesel fired 1500 kW generator at TA-33.
2195E	7/17/02	NPR – Closed	NPR - Pug mill for soil remediation. The equipment was never installed and dropped from consideration. (Activity closed from Tempo on 6/7/06.)
*1081-M1-R5	02/21/02	Technical Rev	Modification of weld bead dress description.
2597	9/6/01	NOI	Replacement of two existing Keewanee 8.368 MMBTU/hr boilers with two Sellers 14.645 MMBTU/hr boilers at TA-55, PF6.
2195A	1/9/01	NOI – NPR	Construction and operation of a new woodshop as a separate facility. Results are too low to trigger 2.72 or 2.73. Second letter issued on Feb. 07, 2002 due to revised application, acknowledges NPR.
1081-M1R4	11/27/00	Admin Rev	Removed 77 HP standby generator that was added during revision 2 in Dec. 1998.
2195B	9/27/00	New NSR	Authorized the modification and operation of the Technical Area – 3 Power Plant.
*1081-M1R3	02/11/00	Technical Rev	Revision 1) limited Beryllium emissions based to throughput instead of cutting / machining time; 2) replaced the one hour emission limit with a 24 hour emission limit from 40 CFR 61, subpart C, section 61.32, i.e., 10 grams of Be per 24 hours; and 3) added a vacuum induction melt furnace operation for melting down classified shapes of machined Beryllium components. Supersedes many portions of 1081-M1 and 1081-M1-R1.
1081-M1R2	12/1/98	Admin Rev	Added 77 HP standby generator as an exempt source. Request received on Oct. 2, 1998.
*634-M2	11/2/98	Admin Rev	Revision consists of installing a 100 MBTU/hr evaporator for the purpose of reducing the volume of coolant waste generated. No revision number was assigned to this Admin Rev.
*634-M2	10/30/98	Modification	Modified permit for Be machining and foundry operations. Established maximum annual throughput of 10,000 lbs Be, facility-wide 24 hr and annual Be emission limits, Be control requirements, and continuous stack monitoring for Be. Application received on September 23, 1997. This permit supersedes all portions of Permit 634-M1.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
*1081-M1-R1	3/11/98	Revision	Required that emissions generated from weld cutting, dressing, and metallography operations be routed through HPA filtration having 99.95% control efficiencies and specified the testing requirements based on accessibility to the HEPA filters.
*1081-M1	7/1/94	Modification	Allowed for the use of lubricant baths instead of kerosene baths in the cutting and grinding operations. The original permit only allowed for grinding to eliminate rough edges. Cutting will produce less fine particles, and therefore is both cleaner and easier to control. Supersedes all portions of 1081, except the portion requiring compliance testing.
1081	11/25/92	New NSR	Authorized beryllium machining operation in TA-55, Building 4.
741	4/26/89	New NSR	Permit to construct a beryllium processing facility within TA 3-35. Closed with 741-R1.
634-M1	9/8/87	Modification	Maximum process rate is limited to 2.0 pph of beryllium and not to exceed the estimated emission rate specified in section 5 of the permit application. Supersedes permit 634.
636	3/19/86	New NSR – Closed	Construction and operation of a beryllium machine shop in TA-3, building102. LANL surrendered permit 636 on Feb. 20, 2004. Final beryllium activities were conducted at the facility in CY 2000.
635	3/19/86	New NSR – Closed	Modification of beryllium machine shop in TA 3, building 39. Closed with 635-R1.
634	3/19/86	New NSR	Construction and operation of a beryllium machine shop in TA-3, building141.
*632	12/26/85	New NSR	Construction and operation of a beryllium machine shop in TA-35, building 213.

6.0 **Public Response/Concerns:** In accordance with 20.2.70.400.A(2), which does not require that administrative and minor permit modifications to be published in a newspaper, the Air Quality Bureau has complied with the requirements for public participation procedures under 20.2.70.401 NMAC and 20.2.70.402.A; those requirements include notification to affected programs and to EPA. "The Department shall not issue an operating permit (including permit renewal or reissuance), minor permit modification or significant permit modification, until affected programs and the Administrator [EPA] have had an opportunity to review the proposed permit as required under this section." A notice of this permit modification was provided to EPA and to the affected programs. The deadline for comments from both the affected programs and EPA will be July 16, 2019.

7.0 **Compliance Testing History:**

N/A- Title V Minor modification to add new evaporative sprayers to evaporate water and reduce water volume in evaporation basins at the SERF. Air emissions from evaporative sprayers cannot be stack tested.

8.0 Startup and Shutdown:

A. If applicable, did the applicant indicate that a startup, shutdown, and emergency operational plan was developed in accordance with 20.2.70.300.D(5)(g) NMAC? Yes

B. If applicable, did the applicant indicate that a malfunction, startup, or shutdown operational plan was developed in accordance with 20.2.72.203.A.5 NMAC? No
C. Did the applicant indicate that a startup, shutdown, and scheduled maintenance plan was developed and implemented in accordance with 20.2.7.14.A and B NMAC? No
D. Were emissions from startup, shutdown, and scheduled maintenance operations calculated and included in the emission tables? No, there are no emissions from SSM for these units.

9.0 **Compliance and Enforcement Status [Title V only]:** As of email dated May 28, 2019, from Shannon Duran, Enforcement Manager, there are no outstanding Notices of Violation or Settlement Agreements.

10.0 **Air Dispersion Modeling:** Not applicable for this permitting action. Emissions from the new evaporative water sprayer are less than the NSR thresholds of 10 pph and 25 tpy of PM10 (PTE = 1.9 pph and 8.4 tpy; and PM2.5 is 0.0 pph and 0.0 tpy) and remains below those thresholds when added to the existing five sprayers (combined total of 1.95 pph and 8.7 tpy for PM10, and 0.0 pph and 0.0 tpy PM2.5). TSP and PM do not have ambient air quality standards that require modeling.

11.0 **State Regulatory Analysis (NMAC): This regulatory determination only applies to the SERF Facility at TA-60.**

20 NMAC	Title	Applies (Y/N)	Unit(s) or Facility	Comments
2.1	GENERAL PROVISIONS	Yes, Always	Entire Facility	The facility is subject to Title 20 Environmental Protection Chapter 2 Air Quality of the New Mexico Administrative Code so is subject to Part 1 General Provisions, Update to Section 116 of regulation for Significant figures & rounding. Applicable with no permitting requirements.
2.3	Ambient Air Quality Standards	No for TV	Entire Facility	20.2.3.9 NMAC, LIMITATION OF APPLICABILITY TO 20.2.70 NMAC. The requirements of this part are not applicable requirements under 20.2.70 NMAC, as defined by that part. This section does not limit the applicability of this part to sources required to obtain a permit under 20.2.72 NMAC, nor does it limit which terms and conditions of permits issued pursuant to 20.2.72 NMAC are applicable requirements for permits issued pursuant to 20.2.70 NMAC.
2.7	Excess Emissions	Yes, Always	Entire Facility	Applies to all of the facility's sources.
2.70	Operating Permits	Yes	Entire Facility	LANL a is major source as defined by the rule for NO2, CO, VOC, SO2, TSP, PM10, PM2.5, and greenhouse gas emissions and required to obtain a Title V operating permit. For each pollutant, this is based on potential to emit as opposed to actual emissions.
2.71	Operating Permit Fees	Yes	Entire Facility	Source is subject to 20.2.70 NMAC as cited at 20.2.71.109 NMAC.

20 NMAC	Title	Applies (Y/N)	Unit(s) or Facility	Comments
2.72	Construction Permits	Yes	Entire Facility	NSR Permits are the applicable requirement, including 20.2.72 NMAC.
2.73	NOI & Emissions Inventory Requirements	Yes, Always	Entire Facility	Applicable to all facilities that require a permit. PER > 10 tpy for all criteria pollutant
2.74	Permits-Prevention of Significant Deterioration	No	Entire Facility	Source is not one of the 28 listed – PTE > 250 tpy LANL has facility-wide emission limits in Title V operating permit that limit the potential to emit for PSD pollutants to below major source status for PSD purposes.
2.75	Construction Permit Fees	No	Entire Facility	This facility is subject to 20.2.72 NMAC or TV: No, In accordance with 20.2.75.11.E an annual NSR enforcement and compliance fee shall not apply to sources subject to 20.2.71 NMAC.
2.77	New Source Performance	No	See units subject to 40 CFR 60	Applies to any stationary source constructing or modifying and which is subject to the requirements of 40 CFR Part 60 and no subparts apply.
2.78	Emissions Standards for HAPs	No	See Units subject to 40 CFR 61	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 61 and no subparts apply.
2.79	Permits – Nonattainment Areas	No	Entire Facility	This facility is not located in a non-attainment area. Non-attainment Link
2.82	MACT Standards for Source Categories of HAPs	No	See Units subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR 63 and no subparts apply.

12.0 Federal Regulatory Analysis: This regulatory determination only applies to the SERF Facility at TA-60

Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Applies (Y/N)	Unit(s) or Facility	Comments
C	Federal Ambient Air Quality Standards	Yes	Entire Facility	Independent of permit applicability; applies to all sources of emissions for which there is a Federal Ambient Air Quality Standard.

NSPS Subpart (40 CFR 60)	Title	Applies (Y/N)	Unit(s) or Facility	Comments
A	General Provisions	No	See units subject to 40 CFR 60	Applies if any other subpart applies and no subparts apply

NESHAP Subpart (40 CFR 61)	Title	Applies (Y/N)	Unit(s) or Facility	Comments
A	General Provisions	No	See Units Subject to 40 CFR 61	Applies if any other subpart applies and no subparts apply.

MACT Subpart (40 CFR 63)	Title	Applies (Y/N)	Unit(s) or Facility	Comments
A	General Provisions	No	See Units Subject to 40 CFR 63	Applies if any other subpart applies and no subparts apply.

Miscellaneous	Title	Applies (Y/N)	Unit(s) or Facility	Comments
40 CFR 70	Title V - State Operating Permit Programs	No		Operating Permit Program – is not applicable – New Mexico State has full delegated authority and Title V is administered under 20.2.70 NMAC.

13.0 **Exempt and/or Insignificant Equipment that do not require monitoring**:

Title V - INSIGNIFICANT ACTIVITIES (Dated March 24, 2005) as defined by 20.2.70.7.P NMAC**:**

None associated with the Sanitary Effluent Reclamation Facility (SERF) that use evaporative sprayers.

14.0 **New/Modified/Unique Conditions** (Format: Condition#: Explanation): This TV Minor Modification Permit is a "short" form, for the purpose of focusing specifically on the conditions being revised/modified to address the evaporative sprayer being added. TV P100-R2M4 will be an addendum to the last full permit P100-R2M1 (issued Feb. 3, 2017).

A. A100, Introduction: Inserted language specifying that this permit action shall be attached to P100-R2M1 (meaning it is an addendum) and that all applicable requirements in P100-R2M1 (Parts A, B, and C) remain in effect unless specifically revised in P100-R2M4.
B. Table A1500.A, Regulated Sources (Evaporative Sprayers): Added the new evaporative sprayer TA-60-EVAP-6. Also, updated serial numbers, manufacture date, and construction date for sprayers 4 and 5.
C. A1502.A, Emission Limits Evaporative Sprayers: Revised the condition wording and language to include PM (for particulate matter) and clarifying language that emissions from the sprayers are fugitive emissions not subject to NSR permitting or count towards PSD applicability. Added additional clarifying language that HAPs emissions shall be reported in semi-annual reports, and that all types of particulate matter (PM, PM10,

and PM2.5) in emissions inventories be determined and reported separately from Table 106.B emissions. The new language serves as clarification to requirements that already exist.

D. A1507.A, Evaporative Sprayers – HAPs: Revised some wording to make clear this condition addresses HAPs emissions. Otherwise all requirements are the same.
E. A1507.B, Evaporative Sprayers Maintenance and Repair: Correct a typographical error, the requirement was intended to refer to Table 106.B (not Table 106.A).

15.0 **Permit specialist's notes on methods for the SERF sprayers (**notes carried forward from previous sprayer TV minor mod, P100-R2M1, with updates in yellow highlight**):**

A. There are no NSPS (40 CFR 60), NESHAPs (40 CFR 61), or MACTs (40 CFR 63) that apply to the evaporative sprayers.
B. Hazardous Air Pollutants (HAPs) from the water that is evaporated with the sprayers are regulated under the existing facility-wide (Laboratory-Wide) emissions cap.
C. New Mexico Toxic Air Pollutants (NM TAPs) have been detected in the basin water that is being evaporated, but water sampling in 2015 showed that the concentrations were less than the TAP air quality permitting thresholds located in Tables A and B found at 20.2.72.502 NMAC of the Construction Permit Regulation. Fluoride is 13% of the threshold and all other TAPs were at 1% of the threshold. See chart following Table 2-P of the P100-R2M1 application (and tabulated list in Section 6 of P100-R2M4 application).
D. The HAP and NM TAP emissions were calculated from analyses of the water in the basins conducted in both 2012 and 2015 for the LANL groundwater permit and/or shipment of water off-site. The concentrations in the water analyses were converted to emissions in pounds per hour assuming that all of the chemicals within the evaporating water was released into the air. All calculations assumed that 42.5% of the water in the spray evaporated: this value is the midpoint of the range in the manufacturer's specifications and is higher than the measured evaporation rate at the basins of 34%. The methods used to determine the concentrations in the water were: Gas Chromatograph/Mass Spectrometer method SW-846:8260B for Volatile Organic Compounds (VOC); Gas Chromatograph/Mass Spectrometer method SW846 3510C/8270D for Semi-volatile Organic Compounds (SVOCs); methods SW846 3005A/6010C, SW846 3005A/6020A, EPA 245.2 1974 and SM:A2340B for metals; method: EPA 350.1 for ammonia nitrogen; and method EPA 335.4 for cyanide. The permit contains a condition (A1507.A) that requires submission of a new water analysis form the basins to AQB every two years so that AQB can continue to verify the HAP and NMTAP emissions remain below reporting criteria.
E. Comparison of water concentrations of TAPs and HAPs from 2012 and 2015 showed consistency in the types of analytes detected and their concentrations to support and require sampling of the basin water every other year (see P100-R2M1 application, calculation worksheet, and email from Bill Blankenship 8/16/16).
F. The permit writer completed a technical review of the evaporative sprayer, the methods used to calculate air emissions, and the determinations provided by the applicant appear to be consistent with previous calculations for the SERF evaporative sprayers.

G. Figure 1, location of SVE and spray evaporators within LANL boundaries:

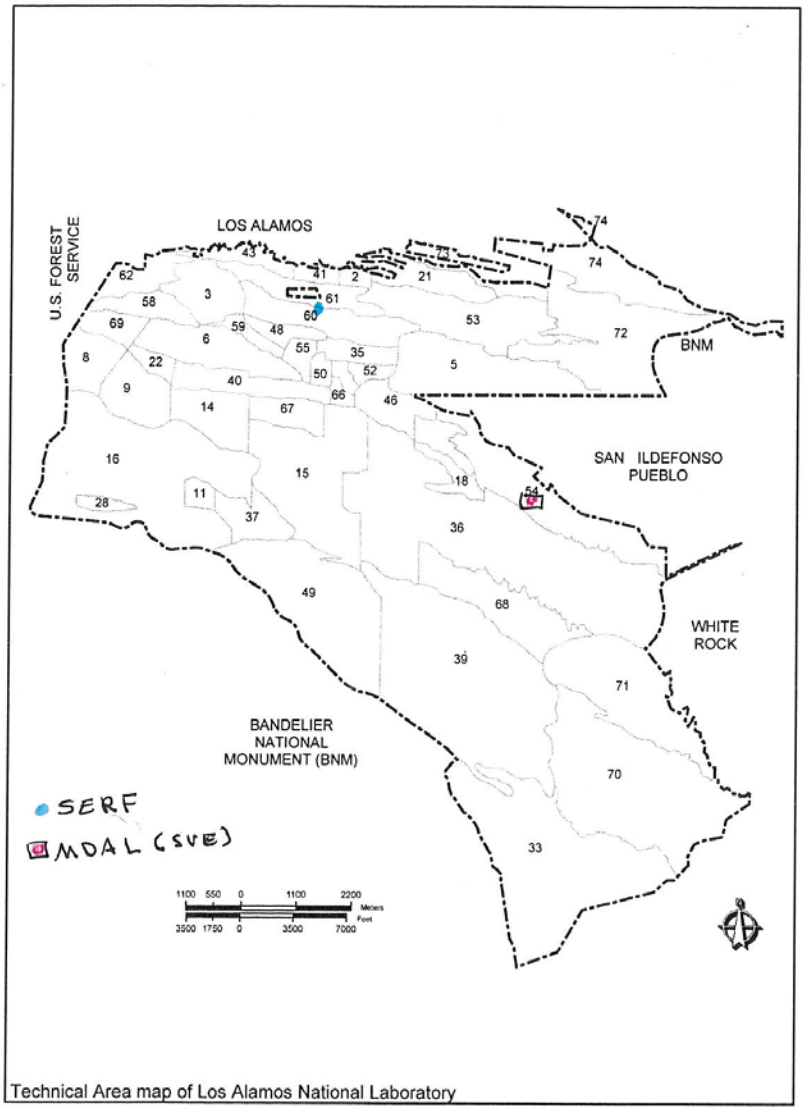

Figure 1.1-2 Technical Area Map of Los Alamos National Laboratory