

**NA-LA NEPA COMPLIANCE OFFICER (NCO) COMPLIANCE DETERMINATION FORM**  
**LAN No: 17-13**

<b>PROJECT/ACTIVITY TITLE:</b> TA-3 Modular Laboratory Building	<b>Accession No:</b> 20919 <b>PRID No:</b> 15P-0192 V1	<b>Date:</b> 12/26/2017
<b>PURPOSE:</b> The Department of Energy (DOE)/National Nuclear Security Administration (NNSA) is proposing to install a pre-constructed modular biosafety level (BSL) 2 facility, replete with offices and support spaces, to support bioscience work at Los Alamos National Laboratory (LANL). Aging bioscience facilities, mission requirements, and the goal to consolidate bioscience operations require modern bioscience research facilities to safely and efficiently continue LANL BSL-2 laboratory work.		
<b>Location:</b> Technical Area-3 at the site of the former Press Building (TA-3-35)	<b>Project Contact:</b> Jim Jones, ADPM, <a href="mailto:jjones@lanl.gov">jjones@lanl.gov</a> , (505)606-0606  Karen Musgrave, LANS EPC-ES, <a href="mailto:ksm@lanl.gov">ksm@lanl.gov</a> , (505) 606-1955	
<p><b>NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COVERAGE:</b> Department of Energy National Environmental Policy Act Implementing Procedures 10 Code of Federal Regulations Part 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions [there is one categorical exclusion to the proposed action]:</p> <p><i>B 3.12 Microbiology and biomedical facilities</i></p> <p>Siting, construction, modification, operation, and decommissioning of microbiological and biomedical diagnostic, treatment and research facilities (excluding Biosafety Level-3 and Biosafety Level-4), in accordance with applicable requirements and best practices (such as Biosafety in Microbiological and Biomedical Laboratories, 5th Edition, Dec. 2009, U.S. Department of Health and Human Services) including, but not limited to, laboratories, treatment areas, offices, and storage areas, within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Operation may include the purchase, installation, and operation of biomedical equipment (such as commercially available cyclotrons that are used to generate radioisotopes and radiopharmaceuticals, and commercially available biomedical imaging and spectroscopy instrumentation).</p> <p>A portion of the proposed facility footprint is addressed in a Compliance Order on Consent (Consent Order). The Consent Order is an agreement between the New Mexico Environment Department and DOE to remediate contaminated sites at LANL. The Consent Order is issued pursuant to the New Mexico's Hazardous Waste Act and Solid Waste Acts. The original Consent Order was issued in 2005 and superseded by a new Consent Order in 2016. The Consent Order specifies investigations, cleanup, and corrective measures to be conducted at LANL. The 2008 SWEIS, Appendix I evaluated environmental consequences of implementing the Consent Order under the No Action Alternative. Activities within a site designated under the Consent Order, including the 2016 Consent Order, are bounded by the 2008 SWEIS, (DOE/EIS-0380), Appendix I (Major Material Disposal Area, Remediation, Canyon Cleanups, and other Consent Order Actions).</p>		

**BACKGROUND**

Aging facilities, mission needs, and the LANL goal of consolidation similar mission operations have prompted the need for modern and additional bioscience research facilities at Los Alamos National Laboratory (LANL or the Laboratory) for continued BSL-2 laboratory work. Bioscience operations are currently conducted at TA-43, Health Research Laboratory, which is outdated and immediately adjacent to the Los Alamos townsite.

The proposed footprint for the modular facility is in a previously disturbed site and the former location of the Press Building<sup>1</sup> (building 03-35) (Figure 1) at LANL. A portion of the proposed footprint of the modular facility is addressed by the Consent Order<sup>2</sup> (Figure 2). This site is a consolidated unit (03-049(b)-00) and consists of a solid waste management unit (03-049(b)) and an area of concern (C-03-014). These units were consolidated because surface-water drainage from both sites collects in the same locations, and previous regrading and paving operations may have distributed contamination from one site to the other. Constituents of concern that were identified in soil samples are benzo[a]pyrene (a polycyclic aromatic hydrocarbon), polychlorinated biphenyls (PCBs), and cyanide<sup>3</sup>.

Nearly one hundred soil samples were taken by environmental health physicists in the footprint of the Press Building (TA-3 building 35) after the removal of building debris (Figure 3). A small amount of depleted uranium (U-238) was found in the soil removed from the trenches of the footprint of the Press Building. While the mean of the soil sampling results was below the 95 percent upper threshold limit<sup>4</sup> from the regional background values (2.22 pCi/g versus 2.29 pCi/g background), there were a several samples with higher than expected concentrations (maximum: 5.92 pCi/g)<sup>5</sup>. Because several of the samples were at concentrations higher than the 95 percent upper threshold limit, LANL is required to restrict release of the soil to the public. The measured U-238 concentrations in the soils (i.e., up to 5.92 pCi/g) are much lower than the screening action levels for construction workers (470 pCi/g), so radiological protections for workers would not be required<sup>6</sup>. The soils sampled from these trenches were placed back into the trenches and covered with approximately 6 feet of clean fill in accordance with LANL Procedure P101-17.0<sup>7</sup> and were not removed from the site.

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<sup>1</sup> Decontamination and Decommissioning of the structure 2015–2017 (15P-0174).

<sup>2</sup> Nelson, R. 2017, "RE: CEFC NEPA review," Email communication from Nelson, R. (LANL) to Musgrave, K. (LANL), Email, Los Alamos, New Mexico, October 5, 2017.

<sup>3</sup> LANL 2015. "Supplemental Investigation Report for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory, LA-UR-15-28015, December 2015.

<sup>4</sup> Occupational Safety and Health Administration: Permissible Exposure Limits. The threshold limit value of a substance is considered the level to which a worker can be exposed day after day for a working lifetime without adverse effects.

<sup>5</sup> Whicker, J. 2017 "RE: prs press building," Email communication from Jeff Whicker (LANL) to Karen Musgrave (LANL), Email, Los Alamos, New Mexico, October 11, 2017.

<sup>6</sup> LANL 2015, "Derivation and Use of Radionuclide Screening Action Levels, Revision 4," Los Alamos National Laboratory, LA-UR-15-24859, June 2015.

<sup>7</sup> P101-17 Excavation/Fill/Soil Disturbance, Revision 2 (issued April 6, 2015).

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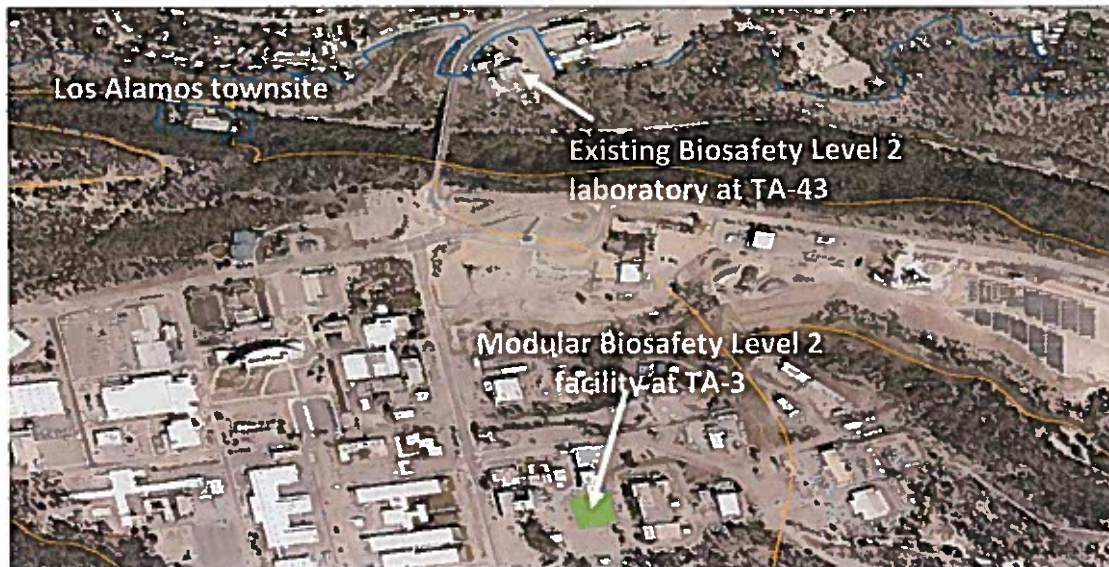


Figure 1. Location of the existing Biosafety Level 2 laboratory at TA-43 and the proposed new location for the modular Biosafety Level 2 facility at TA-3

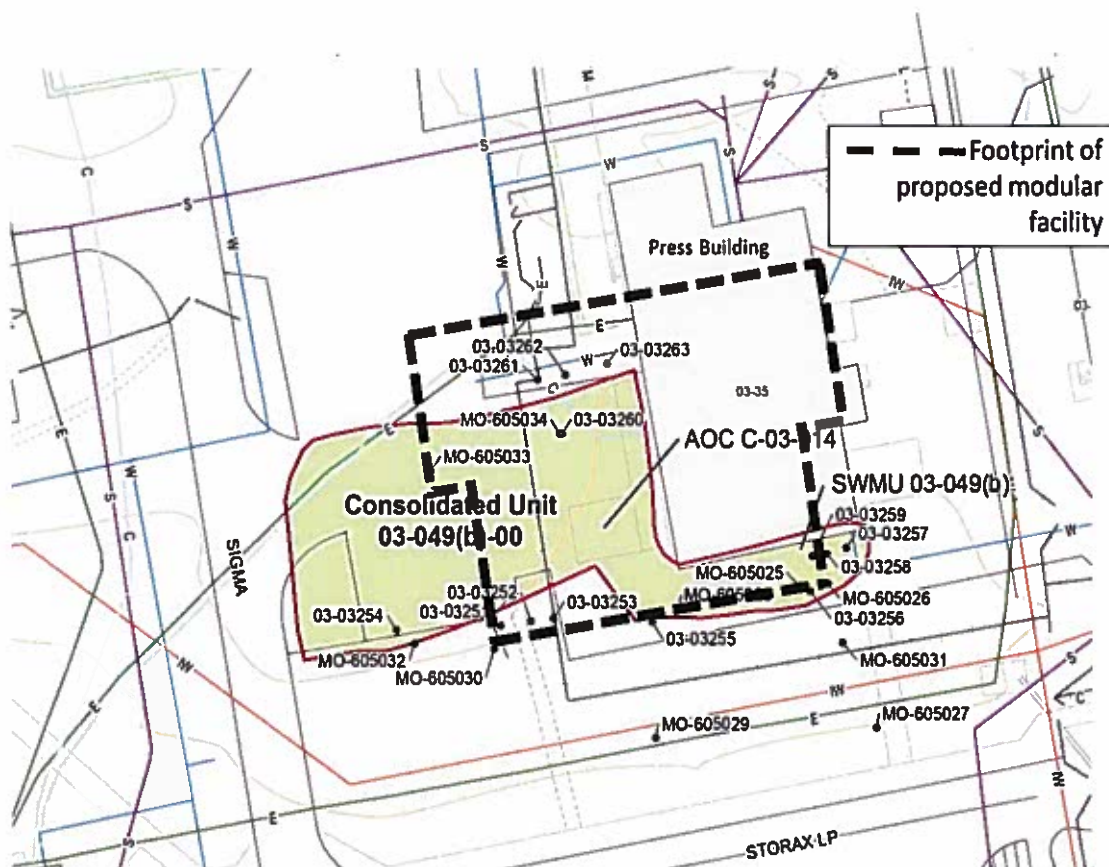


Figure 2. Location of the proposed modular facility in relation to the Consent Order site and the footprint of the former Press Building at TA-3 building 35



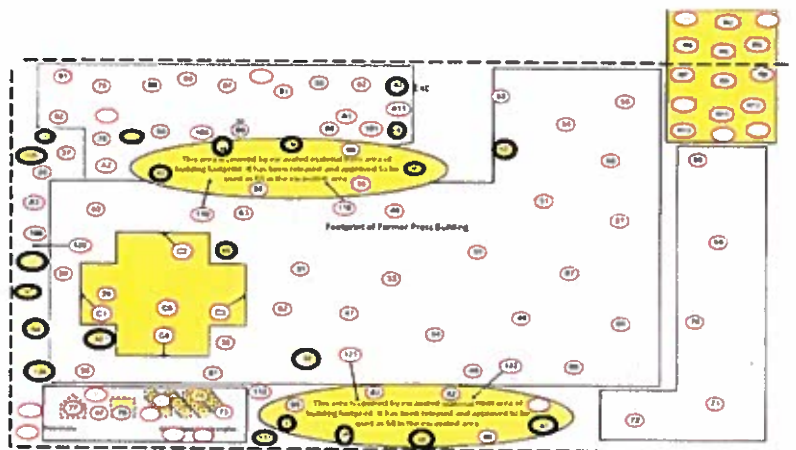


Figure 3. Circles indicate the radiological sampling locations of the former Press Building (TA-3 building 35). Black circles indicate areas with greater than background levels of depleted uranium. The soils from sampling were placed back in the trenches and were not removed from the site. Clean fill was placed on top of these trenches.

## DESCRIPTION OF PROPOSED ACTION

The Department of Energy (DOE)/National Nuclear Security Administration (NNSA) proposes to install a pre-constructed modular facility at TA-3. The proposed footprint for the modular facility is in a previously disturbed site and the former location of the Press Building<sup>8</sup> (building 03-35) (Figure 1). The proposed facility would provide approximately 10,000 to 14,000 square feet of space and house BSL-2 laboratories and office spaces. It is anticipated that 60 to 80 percent of the construction would be done off-site and a subcontractor would complete the installation/construction on-site. The facility will be Leadership in Energy and Environmental Design certified<sup>9</sup>.

As part of the decommissioning and demolition of the former Press Building, the proposed work area would be covered with a geotextile layer<sup>10</sup> (approximately 44,000 square feet) that would be placed on top of the soils containing contamination. Clean fill would be placed on top of the geotextile layer to provide an additional barrier to the contaminated soil. The New Mexico Environment Department (NMED) Risk Assessment Guidance for Site Investigations and Remediation considers the top 1 foot of soil in the industrial<sup>11</sup> risk scenario<sup>12</sup>. Therefore, placement of at least 1 foot of clean fill on top of any potentially contaminated soil would meet conditions for acceptable industrial risk; for the proposed project, 1-4 feet will be placed over the entire site. The 1-4 feet of clean fill would be compacted to provide a base for the installation of the proposed modular facility and structural fill around the facility. The utilities and the footings for the modular building

<sup>8</sup> Decontamination and Decommissioning of the structure 2015–2017 (15P-0174).

<sup>9</sup> Leadership in Energy and Environmental Design is a rating system devised by the United States Green Building Council to evaluate the environmental performance of a building and encourage market transformation towards sustainable design.

<sup>10</sup> A type of fabric used to separate types of soils or aggregates in order to prevent mixing or contamination.

<sup>11</sup> The industrial scenario typically is most appropriate for areas subject to continued LANL use, i.e., the workers in the proposed Biosafety Level 2 facility. ("Derivation of Authorized Limits for Land Transfer at Los Alamos National Laboratory," LA-UR-16-27038, September 2016.)

<sup>12</sup> NMED 2017, "The NMED Risk Assessment Guidance for Site Investigations and Remediation, Volume 1," New Mexico Environment Department, March 2017.

would penetrate into the contaminated soil beneath the geotextile layer and any soils that would be removed would be dispositioned appropriately.

Four biosafety levels represent combinations of laboratory practices and techniques, safety equipment, and laboratory facilities<sup>13</sup>. Only work at BSL-1 and -2 is performed at LANL<sup>14</sup>. Existing BSL-2 operations and staff currently located at TA-43 will be moved into the new modular facility at TA-3. Biosafety cabinets will be moved from TA-43 laboratories and installed in the new facility. Fume hoods will be pre-installed in the new facility. The new modular facility would include the following laboratories<sup>15</sup>:

- virology laboratory—research involving influenza strains
- cellular laboratory—activities involving human cell line studies
- two bacterial laboratories—activities involving bacterial strains, growth, and DNA extraction
- three molecular biology laboratories—activities include DNA preparation, electrophoresis, and polymerase chain reaction techniques
- two soils laboratories—activities include working with domestically collected soils

These activities are currently being performed at the BSL-2 laboratories at the TA-43<sup>16</sup> Health Research Laboratory. In addition to the laboratory spaces, approximately 16 office spaces are proposed at the new facility.

## IMPACT ASSESSMENT

See Table 1 below for an assessment of potential impacts.

**Table 1. Environmental Factors Checklist**

Environmental Factor	Analysis
Land Use	Relocation of equipment and operations would be compatible with existing land use.
Visual	The addition of the modular building would be consistent with the visual elements of TA-3.

<sup>13</sup> Biosafety Level 1 is appropriate for work with well-characterized agents that are not known to cause disease in healthy adult humans. A Biosafety Level 2 laboratory is necessary when programmatic work utilizes any human-derived blood, body fluids, tissues, or primary human cell lines where the presence of infectious agent may be unknown. Biosafety Level 3 is appropriate for work involving microbes that are known to cause serious and potentially lethal disease via inhalation. Biosafety Level 4 is the highest level of biosafety precautions and is appropriate for work with agents that are known to pose a high individual risk of life-threatening disease via the aerosol route, with no available vaccine or therapy.

<sup>14</sup> Department of Energy, "2008 Site-Wide Environmental Impact Statement for the Continued Operation of the Los Alamos National Laboratory, Los Alamos, New Mexico," Appendix C 3.3 Biosafety Levels, DOE/EIS-0380.

<sup>15</sup> Johnson, S. 2017, "RE: CEFC NEPA review," Email communication from Johnson, S. (LANL) to Musgrave, K. (LANL), Email, Los Alamos, New Mexico, August 30, 2017.

<sup>16</sup> Department of Energy, "2008 Site-Wide Environmental Impact Statement for the Continued Operation of the Los Alamos National Laboratory, Los Alamos, New Mexico," p. 3-37, DOE/EIS-0380.

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Environmental Factor	Analysis
<b>Geology and Soils</b> (geologic hazards, soil productivity, capability, erodibility, and mass failure)	Measures to manage the Consent Order site would be implemented and could include covering the soil with tarps to ensure soil or other material is not dispersed off-site by wind, storm water runoff, and vehicle or pedestrian traffic <sup>17</sup> . Any work that involves the Consent Order site will be documented and reported to the NMED in the Phase II Work Plan required by the 2016 Consent Order. Installation of the proposed modular facility on this site can proceed once the Consent Order site controls are in place (the geotextile layer and clean fill). Any soils from the Consent Order site that are disturbed will be managed within the boundary of the Consent Order site.
<b>Water</b> (surface and groundwater quality and quantity, groundwater recharge, streamflow regimes)	<p>The proposed work will require a National Pollutant Discharge Elimination System General Permit for storm water discharge from construction activities and an associated project-specific Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would be properly certified and implemented before a Notice of Intent to discharge storm water from construction activities can be submitted to the Environmental Protection Agency.</p> <p>The location of the proposed modular facility contains a Consent Order site. Best management practices for storm water prevention and/or soil erosion control would be used for all projects prior to the start of any soil disturbing activities within a Consent Order site to minimize potential contaminant migration. Non-structural best management practices would also be utilized, such as good housekeeping practices and use of properly trained personnel<sup>16</sup>.</p>
<b>Non - radiological Air Quality</b>	The SWEIS analyzed temporary and minor non-radiological air impacts from construction, primarily in the form of fugitive dust. Construction activities associated with the modular building are bounded within this analysis.
<b>Radiological Air Quality</b>	The Proposed Action will not result in an increase in radiological air emissions.
<b>Noise</b>	There would be a temporary and localized minor increase in the noise level during construction of the modular building.
<b>Ecological</b> (floodplains, wetlands, threatened or endangered species and habitat, migratory birds, exotic organisms)	Construction and operations would occur in a previously developed area and would not affect ecological resources.
<b>Human Health – Radiological Impacts on the Public</b>	There would be no change in current conditions.
<b>Human Health – Chemical Impacts on the Public</b>	There would be no change in current conditions.

<sup>17</sup> Water Quality subject matter expert's comments on PRID 15P-0192 V1, TA-3 Modular Laboratory Building.

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Environmental Factor	Analysis
<p><b>Human Health – Worker Health</b></p>	<p><b>Construction</b></p> <p>Because the area of potential effect contains a Consent Order site, sampling has been conducted at the site to identify any potential construction worker health risks. Constituents of concern potentially posing a risk to construction workers include PCBs and cyanide<sup>9</sup>. Results from the 2015 Upper Mortandad Canyon Aggregate Area Supplemental Investigation Report<sup>18</sup> determined that the risks for construction workers were acceptable<sup>17</sup>.</p> <p>Environmental health physics subject matter experts evaluated the radiological history of the building and conducted extensive soil sampling at the site after the Press Building was decommissioned and demolished. The measured U-238 concentrations in the soils (i.e., up to 5.92 pCi/g) are much lower than the screening action levels for construction workers (470 pCi/g), so radiological protections would not be required. However, prior to the construction of the proposed modular facility, controls will be in place to mitigate the risk of exposure. The geotextile layer and clean fill that would be placed over the site provide worker exposure protection. Risks from the construction of the proposed BSL-2 facility are bounded by the recommended categorical exclusion and 2008 LANL SWEIS.</p> <p>Construction workers installing utilities and the footings of the proposed building below the geotextile layer would be notified of potential hazards, qualified to do work in these areas, and would be required to wear appropriate personal protective equipment. General requirements for working within a Consent Order site are listed within LANL Procedure P101-17.0<sup>12</sup> and would be consulted prior to field activities<sup>19</sup>. Activities within a Consent Order site are bounded by the 2008 Site-Wide Environmental Impact Statement (SWEIS), Appendix I<sup>20</sup>.</p> <p><b>Operations</b></p> <p>During operations of the proposed facility, the barriers (the geotextile layer and clean fill) would be in place to prevent potential exposure to workers. The potential risk associated with a Consent Order site is bounded by the 2008 SWEIS, Appendix I<sup>19</sup>.</p> <p>Routine workplace hazards in a BSL-2 laboratory include accidental skin absorption, mucous membrane exposures, and ingestion of infectious materials. All activities involving infectious microorganisms are regulated by the National Institutes of Health, Centers for Disease Control and Prevention, the Institutional Biosafety Committee, and the Institutional Biosafety Officer. Laboratory personnel will follow LANL policies and procedures for biological safety<sup>21</sup>. DOE has previously determined that risk from operations in BSL-2 laboratories do not individually or cumulatively have a significant effect on the human environment<sup>22</sup>.</p>

<sup>18</sup> LANL 2015. "Supplemental Investigation Report for Upper Mortandad Canyon Aggregate Area," Los Alamos National Laboratory, LA-UR-15-28015, December 2015.

<sup>19</sup> Excavation/Fill/Soil Disturbance (Tier 3 Compliments Procedure 101-17.0) Revision 1, Los Alamos National Laboratory, June 2010.

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<b>Environmental Factor</b>	<b>Analysis</b>
<b>Cultural Resources</b> (archeological and historical)	No effect
<b>Socioeconomics</b>	Minor benefit from temporary employment of the construction workforce.
<b>Infrastructure</b> (roads, utility corridors, communications systems, energy & fuels, distribution systems, and water)	Infrastructure is adequate to support the Proposed Action.
<b>Waste Management</b>	Waste types and quantities are expected to be similar to current generation amounts.
<b>Transportation</b>	Very minor temporary increase of vehicles during construction.
<b>Facility Accidents</b>	No significant change is anticipated.
<b>Environmental Justice</b>	No change to current conditions.

**CONCLUSION**

Based on this NEPA determination analysis, there are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects or threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders. Consequently, no further NEPA analysis is necessary or required.

**NEPA Determination**

Based on my review of the Proposed Action, as the National Nuclear Security Administration’s Los Alamos Field Office (NA-LA) NEPA Compliance Officer (as authorized under DOE Policy 451.1, I have determined that the Proposed Action as described herein, falls within the DOE NEPA Implementing Procedures listed in 10 CFR Part 1021, Subpart D, Appendix B 10 CFR Part 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions: There is one categorical exclusion to the proposed action, *B 3.12 Microbiological and biomedical facilities*.

The 2008 SWEIS, Appendix I evaluated environmental consequences of implementing the Consent Order under the No Action Alternative. Activities within a site designated under the Consent Order are bounded by the 2008 SWEIS, including the 2016 Consent Order, (DOE/EIS-0380), Appendix I (Major Material Disposal Area, Remediation, Canyon Cleanups, and other Consent Order Actions).

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects or threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or executive orders. If changes are made to the scope of the action so that it is no longer bounded by the enclosed description, or the project is changed to

<sup>20</sup> 2008 SWEIS, “2008 Site-Wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico,” Appendix I Major Material Disposal Area, Remediation, Canyon Cleanups, and other Consent Order Actions, DOE/EIS-0380.

<sup>21</sup> LANL 2017, Biological Safety Procedure, Revision 4, No: P101-15, June 20, 2017.

<sup>22</sup> 10 Code of Federal Regulations [CFR] 1021 NEPA Appendix B3.12 to Subpart D of 1021.



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encompass other actions, NEPA requirements for the action will need to be reassessed at that time and further analysis may be required.

NA-LA NEPA Compliance Officer: Jane Summerson

Date:

Signature:

*J Summerson NCO*

*1/4/18*