



Department of Energy
National Nuclear Security Administration
Categorical Exclusion Determination Form



Categorical Exclusion ID#: NV-2020-006

Proposed Action Title: Special Technologies Laboratory (STL) Operations

Program or Field Office: NNSA Nevada Field Office

Location(s) (City/County/State): Santa Barbara, CA

Proposed Action Description

The STL is located in Santa Barbara, California. STL uses three locations which include 5520 and 5540 Ekwill Street and the 226 Complex. STL is an applied science and engineering laboratory that is part of a division of the Management and Operations Contractor (M&O) for the National Nuclear Security Administration Nevada Field Office (NNSA/NFO). STL supports the NNSA Stockpile Stewardship, Non-Proliferation, Security, and Strategic Partnership Projects/Strategic Intelligence Partnership Projects (SPP/SIPP) programs. Core capabilities include radiation, shock and laser physics, photonics, RF and electronic communication engineering systems, robust nuclear and other instrumentation design and fabrication, fiber-optic systems, computer hardware and software development. This work requires the use of radiation sealed sources, lasers and small quantities of explosives. Ongoing operations result in the generation of non-radioactive solid wastes, hazardous wastes, and domestic and industrial wastewater.

Building 5520

STL leases building 5520 on Ekwill Street that consists of 42,465 square feet. Operations in this building include electronic laboratories, laser laboratories and offices. These laboratories are used for the development of radiological instruments, radar systems and communication systems. The radiological instruments are involved with detecting and identifying radioisotopes. Short-range radar systems are used for locating and imaging objects. In addition, the laboratories are used for the design, development, and evaluation and testing of various physical security sensor technologies and sensor systems for communication systems.

Building 5540

STL leases building 5540 on Ekwill Street that consists of 14,195 square feet. Operations in this building include a small machine shop, laser, physics, photonics and chemistry laboratories and offices. The laboratories are involved with research and development activities in the areas of radiation diagnostics, optics, photonics, and general chemistry and biology research operations.



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6159 Kiester Road (226 Complex)

STL leases the space and land at 6159 Kiester Road, which is also known as the 226 Complex. This Complex is located approximately 2 miles west of the main STL facility on Ekwill Street, and is linked to the main facility by a major thoroughfare, Hollister Avenue. The Complex is located in an industrial area on land owned by the Santa Barbara Municipal Airport. STL leases the approximately 8,800-square-foot Building 226 and 47,692 square feet of fenced space in the courtyard to the north (behind building 226). Several NNSA-owned buildings (Buildings 227, 228, 229, 230 and 231) and modular trailers (232, 233, and 234) are located in the courtyard behind building 226.

(1) Building 226

Building 226 is a permanent building that contains offices, chemistry, biology, and laser laboratories. One of these laser laboratories is associated with the optical test range, which is located on the west side of the facility. A metal shed building that encloses a 10-foot-diameter water tank is located at the end of the optical test range. The water tank is inactive now, but was used as a test bed for lasers and targets, and could be used again.

(2) Buildings 227, 229 and 231

Building 227 is used for boom box high-explosive experiments, which use less than 10 grams of high explosives during each experiment. These Research and Development (R&D) activities include shocked physics experiments that test VISAR and Fabray-Perot measurement techniques and other experiments that involve optical velocity measurements. Building 227 also contains the Platts x-ray machine which is used as one of the many diagnostic tools during the explosives experiments.

Building 229 is a metal-shed-like building located immediately adjacent to the east side of the optical test range. There is a mini gas gun, which is operated by high-pressure gas to propel an impactor into a target at high velocity. It also houses a smokeless powder gun that is designed to provide ballistic launch capability at muzzle velocities in the 0.3 to 2.7 km/sec regime. Both the mini gas gun and powder gun would be used in combination with a variety of diagnostic instrumentation in order to observe shocked material behavior at elevated temperatures and pressures.

Building 231 houses the Febetron 705 and 706, which are used for various radiation diagnostic R&D experiments. This building also contains the Associated Particle Imaging (API) System, a laboratory that houses the Sealed Neutron Tube Generator (STNG), a radiation-generating device. The STNG is used to measure the gamma spectrum of materials of interest produced by 14-MeV neutron irradiation.



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(3) Modular Buildings 228 and 230

Modular buildings 228 and 230 are used for machine-shop work for electromechanical fabrication and assembly and carpentry. Examples of tools and equipment consist of milling machines, lathes, saws, shears, grinders, brakes, drill presses and various hand tools.

(4) Modular Trailers 232, 233 and 234

Modular trailers 232 and 234 are facility support trailers used for office space, storage, and shipping/receiving operations. Modular trailer 233 is used as radiation detection and electronics laboratories and offices. It also is used for control-room activities for the powder gun operations being conducted in Building 229.

Categorical Exclusion(s) Applied

10CFR1021 B.3-6 Small scale research and development, laboratory operations and pilot projects.

Regulatory Requirements in 10 CFR 1021

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of 10 CFR 1021.

To find that a proposal is categorically excluded, DOE shall determine the following:

- (1) The proposal fits within a class of actions listed in Appendix A or B to 10 CFR Part 1021, Subpart D;
- (2) There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal; and
- (3) The proposal has not been segmented to meet the definition of a categorical exclusion. The proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, include the following conditions as integral elements of the classes of actions. To fit within the classes of actions in Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted



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releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those of the Department of Agriculture, the Environmental Protection Agency, and the National Institutes of Health.

NEPA Compliance Officer Determination

Based on my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under NNSA NAP 451.1 and DOE P 451.1), I have determined that the proposed action fits within the specified class(es) of action and I have reviewed the proposal for integral elements. I have determined that there are no extraordinary circumstances present and that the proposal has not been segmented to meet the definition of a categorical exclusion. Therefore, the application of a categorical exclusion is appropriate.

NEPA Compliance Officer: Carrie Stewart

Date Determined: 01/09/2020