

**CATEGORICAL EXCLUSION FOR the Facility Upgrades at 222-S
Laboratory Complex Conducted Under the *American Recovery and
Reinvestment Act*, HANFORD SITE, RICHLAND, WASHINGTON**

PROPOSED ACTION: The U.S. Department of Energy (DOE), Office of River Protection (ORP) proposes to upgrade the 222-S Laboratory Complex.

LOCATION OF ACTION: Hanford Site 222-S Laboratory Complex, Richland, Washington.

DESCRIPTION OF PROPOSED ACTION: The 222-S Laboratory was constructed in 1950 and started operations in 1951. The Laboratory specializes in chemical analysis and testing of highly radioactive samples. The 222-S Laboratory is located within the 222-S Laboratory Complex which is comprised of administrative, maintenance, storage buildings, a non-radiological laboratory, waste management areas, and miscellaneous other support structures. The 222-S Laboratory Complex is landscaped and located within a developed area where active utilities and currently used roads are readily accessible. The proposed actions will be performed within the 222-S Laboratory Complex.

The 222-S Laboratory has a defined mission on the Hanford Site until approximately 2050, through the period of feed delivery to the Hanford Vitrification Plant. It is required to be operational on a continuing basis currently and throughout the mission. The laboratory was built in 1951 and the need for investment in the facility continues. Many of the administrative support buildings, non-radiological laboratory are mobile offices and need replacement; they were placed in the 222-S Complex in the 1980's. Investment in renovations and analytical equipment will maintain 222-S Laboratory analytical capabilities.

The 222-S Laboratory Complex provides analytical services for Double-Shell Tanks (DST) and Single-Shell Tanks (SST) waste samples and is expected to continue through waste feed delivery to the Hanford Vitrification Plant. The ability to analyze the content of tank vapor is needed for safety of personnel working in or near the Tank Farms. The laboratory also provides data for the characterization of soil, groundwater, and vadose zone contamination. Analytical methods require the use of specific laboratory instrumentation. The instrumentation must be functional and reliable to perform the analysis and meet the regulatory analytical detection limits. Much of the analytical equipment proposed for replacement is at least 10 years old. Obtaining replacement parts is difficult with such old equipment, and many are not capable of interfacing with modern computer systems.

These actions described in multiple work structure breakdown (WBS) elements include procurement and installation of 222-S Laboratory Complex analytical equipment required for analysis of samples for organic, inorganic and/or radiochemistry.

The elements described below will contribute to the improved reliability and availability of the 222-S Laboratory Complex through its mission life. Work proposed in this project will include the following elements:

Representative types of facility upgrades planned include:

- Replacing the roof membrane of the laboratory building,
- Addition of a conditioned storage facility (mobile facility that is used for storage of non-radiological waste),
- Replacement of unoccupied mobile office (MO-924),
- Remove and replace selected mobile office and storage facilities, including landscape removal as needed to support building removal or replacement, and rerouting or utilities,
- Replacing outdated HVAC control systems,
- Stairway access/egress upgraded to current building code,
- Renovating three rooms in 222-S Laboratory building,
- Relocating the non-radiological laboratory functions into a non-radiological area of 222S Laboratory and removal of the non-radiological laboratory,
- Re-landscaping the 222S Complex as required after removal and installation of new buildings, and
- Temporary locating construction trailers in developed areas using existing utilities.

Representative types of system upgrades planned include:

- Upgrade HVAC with electric heat (i.e., convert from steam heat to electric heat),
- Replace HVAC units,
- Update the HLAN to 100MB rate
- Replace light fixtures (~500), many of which contain PCB's, with energy efficient lights,
- Update PAX system,
- Improve access to supply fan deck by removing duct section and replacing steps,
- Procure and backup air dryer, and
- Prepare and issue built electrical drawings.

Representative of types of instrument upgrades planned include:

- Alpha Energy Analyzer,
- Gamma Energy Analyzer,
- Liquid Chromatograph/Mass Spectrometer,
- Ion Chromatograph,
- Microwave Digestion,
- Inductively Coupled Plasma-Atomic Emissions Spectrometer,
- Gas Chromatograph/ Mass Spectrometer,
- Inductively Coupled Plasma/Mass Spectrometer,
- Viscometer,
- Particle Size Distribution Analyzer,
- Associated software and hardware upgrades, and
- Minor construction required for equipment removal and installation (e.g., hoods, laboratory room modifications).

These instruments will provide the capability to maintain compliance with regulatory and customer requirements with high reliability and will be replaced utilizing *American Recovery*

and Reinvestment Act of 2009 (ARRA) funding. The equipment will be supported by vendors, and capable of interfacing with current Hanford Site standard computer systems. Additional upgrades such as computers, (e.g., hardware and software), analytical equipment, etc., will be funded under the regular baseline work scope (not under RA) and implemented as part of ongoing maintenance and upgrades to the facility. These equipment and instrument upgrades will be in kind replacements for existing maintenance and equipment.

Portions of the existing landscaping at 222-S Laboratory Complex have become overgrown, due to irregular maintenance work and malfunctions/breakages in the sprinkler system. The current landscaping now poses as a fire danger, and hazardous safety hazard to workers. Landscaping will include removal of all dead, dying, and/or diseased vegetation. Several trees have grown into the overhead utility and power lines. Tree removal and underground utilities will be performed as part of installation of Conditioned Storage building. All landscaping done at the 222-S Laboratory Complex is to ensure worker safety, minimize the fire danger, and minimize pest problems (e.g., rodents, bees/wasps/hornets, snakes, etc.) and enhance facility appearance. The landscaping is scheduled to begin immediately.

Routine Maintenance for landscaping is classified as the following:

- Removal of dead, dying, or diseased shrubs and trees,
- "Limb-up" and remove dead branches from trees (deciduous & coniferous),
- Trim and/or shape shrubs and trees away from building and utility/power lines, and
- Trim and/or remove trees and shrubs that overhand buildings or touch building sides or skirting.

These actions are consistent with prior *National Environmental Policy Act of 1969* (NEPA) analysis performed to support ongoing operation of facilities that are part of the safe and compliant management of Hanford Site tank waste. The 222-S Laboratory Complex was addressed as part of the scope under the NEPA analysis performed in the *Final Environmental Impact Statement* (FEIS) for Hanford Waste Management Operations (ERDA-1538). Subsequent impact analysis considered the laboratory as part of the ongoing operation and maintenance actions required to support safe and compliant tank farm operations.

Categorical Exclusion(s) (CX) to be Applied: The following CX(s) are listed in 10 CFR 1021, "National Environmental Policy Act Implementing Procedures," Subpart D, Appendix B, published in the Tuesday, July 9, 1996, in 51 Federal Register 35222.

B1.3 Routine maintenance activities and custodial services for buildings, structures, rights-of-way, infrastructures (e.g., pathways, roads, and railroads), vehicles and equipment, and localized vegetation and pest control, during which operations may be suspended and resumed. Custodial services are activities to preserve facility appearance, working conditions, and sanitation, such as cleaning, window washing, lawn mowing, trash collection, painting, and snow removal. Routine maintenance activities, corrective (that is, repair), preventive, and predictive, are required to maintain and preserve buildings, structures, infrastructures, and equipment in a condition suitable for a facility to be used for its designated purpose. Routine maintenance may result in replacement to the extent that replacement is in kind and is not a substantial upgrade or improvement. In kind

replacement includes installation of new components to replace outmoded components if the replacement does not result in a significant change in the expected useful life, design capacity, or function of the facility. Routine maintenance does not include replacement of a major component that significantly extends the originally intended useful life of a facility (for example, it does not include the replacement of a reactor vessel near the end of its useful life).

- B1.7** Acquisition, installation, operation, and removal of communication systems, data processing and equipment, and similar electronic equipment.
- B1.15** Siting, construction (or modification) and operation of support buildings and support structures (including, but not limited to, trailers and prefabricated buildings) within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible). Covered support buildings and structures include those for office purposes; parking; cafeteria services; education and training; visitor reception; computer and data processing services; employee health services or recreation activities; routine maintenance activities; storage of supplies and equipment for administrative services and routine maintenance activities; security (including security posts); fire protection; and similar support purposes, but excluding facilities for waste storage activities, except as provided in other parts of this appendix.
- B1.31** Relocation of machinery and equipment, such as analytical laboratory apparatus, electronic hardware, maintenance equipment, and health and safety equipment, including minor construction necessary for removal and installation, where uses of the relocated items will be similar to their former uses and consistent with the general missions of the receiving structure.

Eligibility Criteria: Since there are no extraordinary circumstances that may affect the significance of the environmental effects of the proposal, the proposed activity meets the eligibility criteria of 10 CFR 1021.41 0 (b), as shown in the following table. The proposed activity is not "connected" to other actions with potentially significant impacts (40 CFR 1508.25[a][1]), or with cumulative significant impacts (40 CFR 1508.25[a][2]), and is not precluded by 10 CFR 1021.211.

The "Integral Elements" of 10 CFR 1021 are satisfied as discussed below.

INTEGRAL ELEMENTS 10 CFR 1021	
Would the Proposed Action:	Comment or explanation:
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE And/or Executive Orders?	No applicable laws, regulations, or orders would be violated by the proposed actions.
Require siting and construction or major expansion of waste storage, disposal, recovery or treatment facilities (including incinerators)? The proposal may include categorically excluded waste storage, disposal, recovery or treatment actions.	Action does not require siting and construction of waste storage, disposal, recovery or treatment facilities. Construction debris is non-hazardous and can be disposed of in existing facilities.
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 releases?	No.
Adversely affect environmentally sensitive resources including, but not limited to: (i) Property (e.g., sites, buildings, structures, objects) of historic, archeological, or architectural significance designated by Federal, state, or local governments or property eligible for listing on the National Register of Historic Places (ii) Federally-listed threatened or endangered species or their habitat (including critical habitat), Federally-proposed or candidate species or their habitat or state-listed endangered or threatened species or their habitat (iii) Wetlands regulated under the Clean Water Act (33 D.S.C. 1344) and floodplains (iv) Federally- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries (v) Prime agricultural lands (vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region) (vii) Tundra, coral reefs, or rainforests?	None of the environmentally sensitive resources listed (i through vii) will be adversely affected. (i) Proposed action does not adversely affect historical/cultural resources (ii) proposed action does not adversely affect ecological resources (iii) N/A (iv) N/A (v) N/A (vi) N/A (vii) N/A

CULTURAL AND BIOLOGICAL RESOURCES REVIEWS

Cultural Resources Review

Pacific Northwest National Laboratory (PNNL) Cultural Compliance staff concluded that:

- Artifacts 222-S-7 and 222-S-8 were re-evaluated in November 2003 and were determined to be too large/heavy to remove or use as museum exhibits and/or potentially contaminated. The items were documented in place and are described and illustrated in the document *Mitigation of Selected Hanford Site Manhattan Project and Cold War Era Artifacts* (PNNL 2006). The remaining artifacts will need to be curated. With these measures, all required mitigative measures necessary to allow for modifications to this building will have been met. Additionally, none of these activities including roof replacement will not negatively affect the 222-S Building because it is not a characteristic that qualified the building as a contributing property to the District.
- Excavation activities associated with landscaping will occur in a heavily disturbed and low cultural resource potential area. The possibility for buried archaeological material to be present is very low. Based on this information, a No Potential to Cause Effect Finding was recommended and sent to DOE Hanford Cultural Resource Program Staff.

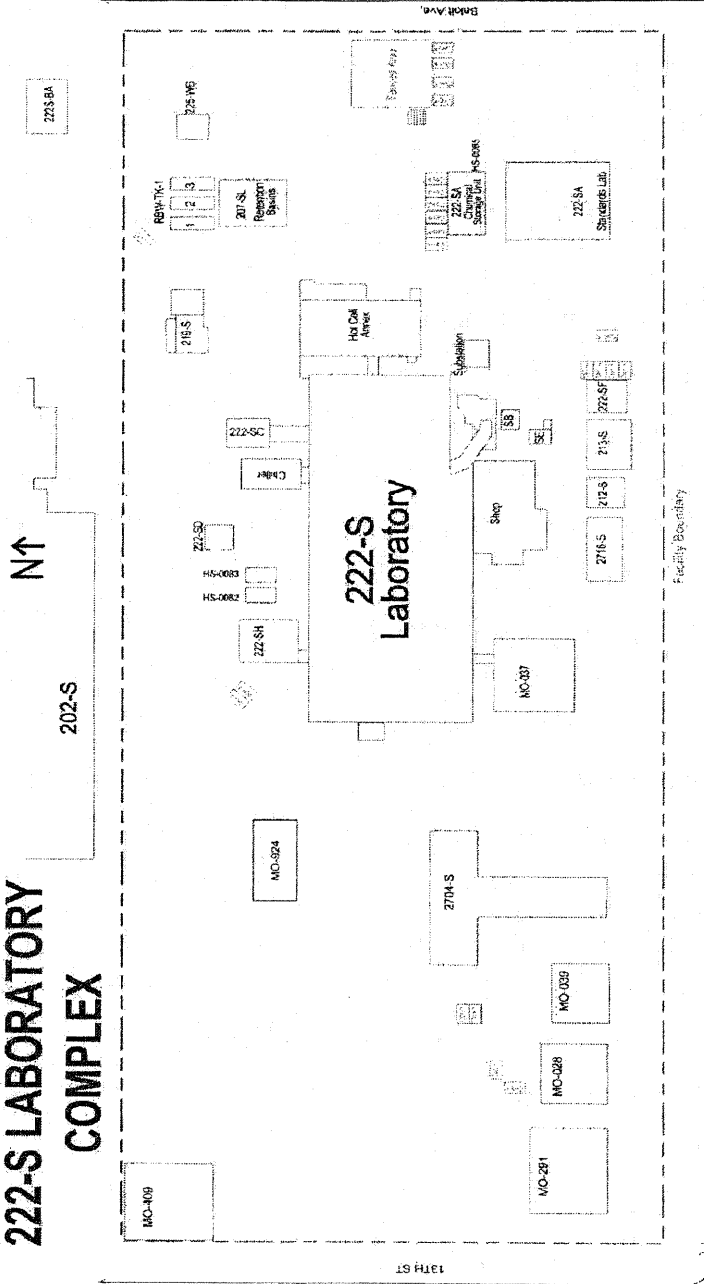
On August 13, 2009 the DOE Hanford Cultural Resource Staff responded and determined per 36 CFR Part 800, Subpart B, 800.3.a, that this project is not the type of activity with potential to cause effects to historic properties. They concluded that all required mitigation measures identified have been met. Pursuant to the Hanford Site Manhattan Project and Cold War Era Historic District Treatment Plan (DOE 1998) and the History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990, mitigation measures include curatorial measures that must be taken to protect and preserve artifacts that may have interpretive or educational value as exhibits within local, state, or national museums.

Biological Resources Review

Pacific Northwest National Laboratory (PNNL) Ecological Compliance staff concluded that:

- No plant or animal species protected under the ESA, candidates for such protection, or species listed by the Washington state government as threatened or endangered were observed in the 222-S Laboratory complex.
- Several species of migratory birds utilize building exteriors and landscaping trees/shrubs within the 222-S Laboratory complex during the nesting season. All the aforementioned bird species, except the European starling, are classified as migratory and both the birds and their active nests are afforded protection under the Migratory Bird Treaty Act (MBTA). It is unlawful to take, capture, or kill any migratory bird, nest, or egg.
- During project tasks, if any active nests (containing adults, young, or eggs) are observed or if any birds appear aggressive or injured near project work areas, further consultation with PNNL Ecological Compliance staff is recommended.

222-S LABORATORY COMPLEX



222S Laboratory Complex

2704-S, MO-037, MO-039	Office Buildings	2716-S, 222-SF	Storage
MO-409	Unoccupied Office Building	212-S, 213-S	Gas Cylinder Storage
MO-924	Laboratory	219-S	Waste Handling Facility (tanks)
222-S	Standards Laboratory (non-rad)	207-SI, RBW-TK-1	Retention Basins and tanks
222-SA	Dangerous and Mixed Waste Storage Area	222-SC, SE, SB	HEPA Filter Buildings
HS-0082, HS-0083			

Determination

Based upon my review of information conveyed to me and in my possession concerning the proposed actions, as NEPA Compliance Officer authorized under DOE Order 451.1B, Change 1, I have determined that the proposed actions fit within the specified class of actions described in 10 CFR 1021, Subpart D, Appendix B, Categorical Exclusions B1.3, B1.7, B1.15 and B1.31 and satisfy the requirements of 10 CFR 1021.410(b). The proposed actions are hereby categorically excluded from further NEPA review.

Signature/Date:

 8/18/09

Woody Russell

Hanford NEPA Compliance Officer

Attachments Integral Elements 10 CFR 1021 Table.

Schematic of the 222S Complex.

Environmental-Activity Screening Form