



National Nuclear Security Administration

Categorical Exclusion Determination Form



NEPA ID#: HEDLP 15-001-001

Proposed Action Title: Mercury Modernization – Campus Development and Construction Activities (NV-2019-001)

Program or Field Office: Nevada Field Office

Location(s) (City/County/State): Nevada National Security Site (NNSS), Nye County NV

Proposed Action Description:

Mercury Modernization (MM) is a multi-year project that would redevelop a central area of the current Mercury town site to provide modern facilities and infrastructure that are required to support ongoing mission operations at the Nevada National Security Site (NNSS). The Mercury Area Plan has been developed that would guide the physical construction actions required to transform the site over time. MM would tie existing facilities that have a remaining useful life of 10 – 20 years to newly constructed facilities within a consolidated footprint creating a new, walkable campus environment. Vacated non-enduring facilities would be demolished over time as approved and funded. MM would be focused on providing primarily administrative office, light laboratory and mixed-use space required to properly support existing functions that will be relocated out of old facilities into newly constructed facilities. The full area plan would be implemented in a phased manner over a period of approximately 10 years (2019 – 2029).

1) Demolition of Old Facilities

A total of seven facilities along with a series of legacy concrete pads, Dell Frenzi Park, recreation courts, parking areas and associated above ground and underlying utilities will be demolished to enable the construction of new facilities. Table 1 lists the facilities and other campus features currently identified for demolition as part of MM.

Building No.	Building Name	Demolition Year
23-152	Laundry	2019
23-425	Old Fire Station #1	2019
23-426	Old Fire Station 31 Dormitory	2019
23-B, 23-C, 23-D	B/C/D Dormitories	2019
23-23	Nye County Sheriffs Trailer	2019
Legacy Concrete Pads	Legacy building foundations (Approximately 20)	2019
N/A	Dell Frenzi Park	2019
N/A	Recreation Courts	2019
N/A	Parking Areas (bus parking, lots in and around 23-118, 117, 614, 143,525, 111)	2019
N/A	Underground Utilities	2019

Table 1: Facilities and Structures to be Demolished

2) Grading and Site Preparation

Site Grading would be executed prior to the construction of new utilities and each new building. Site grading would consist of removal of vegetation, grubbing, excavation (cut and/or fill based on location), watering and recompaction of ground surfaces. Trenching would be required for installation of a new utility corridor for electrical, water, sewer, and communications and for new building foundation footings to a depth at least below the frost line (estimated to be a depth of ~2 feet). Work would be performed by the operation of heavy equipment.

Excavated native soils that are suitable will be reused as fill. The soils would be stored within the campus footprint on already disturbed land until a use is identified. Additional fill required to elevate lots would be provided from existing onsite borrow pits. Site grading would occur in a phased manner over time, preceding the construction of new buildings. Grading by block would prepare multiple lots for building construction through a single effort. Rough grades within +/-12 inches of final grade would be developed out of compacted native soils and fill material in accordance with the engineered civil construction specifications. Compacted, rough graded lots would be maintained in a ready-for-construction condition until buildings are designed and ready to be built. Fiber rolls held in place with wooden stakes would be installed around the perimeter of graded lots to prevent erosion. Final grading to bring new building construction sites to final grade would be performed as part of the new building construction efforts. Final grades would be constructed out of compacted type II soils.

3) New Building Construction

Up to eleven (11) new buildings would be constructed within the previously disturbed footprint of Mercury. Table 2 below provides a list of new facilities and planned construction year. New facilities would be single-story buildings between 8,000 and 25,000 square feet in size depending on the specific building function. Buildings would feature modern architectural design. Physical characteristics of the modern design aesthetic include clean lines; basic shapes; simple geometric forms; and high quality, natural, low maintenance building materials. Buildings would feature large windows with glazing to maximize natural lighting, elevated roof lines, and high ceilings. Exterior overhangs would provide shading. Facilities would be constructed in a manner that maximizes energy efficiency and sustainability through optimization of building orientation, low/net zero energy use, and light coloration/ high reflectivity.

Design criteria and standards associated with environmental considerations of new facilities that would be implemented in a tailored manner based on specific needs, requirements and functions of the facilities would include the following:

- **LEED Gold** – LEED (Leadership in Energy and Environmental Design) is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance across a variety of metrics that can be used to verify and document energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, stewardship of resources, and efficiency of lifecycle operations and maintenance. Gold status refers to the level of sustainability achieved. The LEED rating scale includes four tiers of certification: certified, silver, gold and platinum.
- **Net Zero Energy** – Net Zero Energy refers to a building with zero net energy consumption, meaning the total amount of energy used by the building on an annual basis is offset by an equal amount of renewable energy production elsewhere.
- **High Performance and Sustainable Building (HPSB)** – HPSB refers to a building that integrates and optimizes all major building systems to achieve improvements to energy efficiency, durability, life-cycle performance, and occupant productivity.

Phase	Building Number	Construction Year
1	1 (23-460)	FY2019
	1a (IT/Comm Building)	FY2019
	2 (23-461)	FY2020
	3 (23-462)	FY2021
2	4 (23-463)	FY2022
	5 (23-464)	FY2023
	6 (23-465)	FY2024
3	7 (23-466)	FY2025
	8 (23-467)	FY2026
4	9 (23-468; E1)	TBD
	10 (23-469; E2)	TBD

Table 2: New Building and Construction Year

4) Installation of New Utilities

Utilities for all new buildings would be fed from a new underground utility corridor. Power feeds to existing buildings 23-117, 23-118, 23-143, 23-525 and 23-614 and the power feed to dormitories 23-521, 23-532 and 23-525 would be moved underground. Old poles would be disposed of in an appropriate onsite landfill. Old conductors would be removed, and salvageable metal would be sold as recycling scrap. Components that are not suitable for recycling would be disposed in an appropriate onsite landfill.

The installation of the new utility corridor would be phased to support each new building, minimize disruption to ongoing Mercury operations and to make best use of available resources. Installation of the primary utility corridor with manholes/vaults would occur upfront to establish the primary feeds throughout the new campus environment and would be installed on both sides and down the center of Teapot and Greenhouse streets. Individual building connections would be implemented and interconnected to the new corridor mains in a phased manner as designs for each new building are finalized. Trenching down Teapot and Greenhouse streets would be required to install the new underground utilities. Additional trenching throughout the campus would be needed to access and facilitate interconnections of existing facilities and infrastructure with the new corridor. Trenching would be conducted with heavy machinery.

Upgrades to existing underground utilities would be executed as needed and in accordance with engineering designs to integrate and modernize infrastructure that would support and facilitate the new campus development.

New and upgraded utility construction would include the following components:

- Water
- Sanitary Sewer
- Power
- Communications
- Storm Water/ Drainage/ Runoff Detention

Utility tie-ins would be placed at grades developed through the site grading process. These utility tie-ins would connect to existing infrastructure along Trinity Avenue. Vaults, manholes, and other connection points specified on engineering drawings would be provided as required for each utility connection.

Power and communications infrastructure would be installed in conduits. Manholes would be installed to access key junction points and facilitate interconnectivity between new and existing infrastructure as needed.

5) Modifications to Existing Roads and Parking Lots

Significant upgrades to existing road surfaces would be required as part of the new Mercury campus development. Most primary road surfaces around and throughout the interior of Mercury would be impacted during the various construction phases of the campus development. Trenching for new utilities would occur on Teapot Street and Greenhouse Avenue. As trenching occurs, asphalt would be cut and disposed at an onsite landfill. Trenches down streets would be backfilled with type II soil and compacted. As required, cold patch asphalt may also be used to temporarily repair existing road surfaces. Upon the completion of the major utility upgrades and new installations, road surfaces throughout Mercury would be resurfaced with hot mix asphalt and or Chip/Seal applications.

Teapot Street and Greenhouse Avenue would be converted from vehicular traffic access streets to pedestrian pathways only. These pedestrian pathways would be resurfaced in a manner that suits the needs of the campus (paved, paver stone, cement, etc.). Traffic patterns and parking areas would be redirected around the exterior of the new campus environment in accordance with the Mercury Area Plan. New parking lots would also be added throughout the campus. Parking surfaces would be graded, compacted and paved with hot mix asphalt. Existing parking areas would be resurfaced with hot mix asphalt or with chip and seal applications as required.

Road and parking lot improvements would be executed in a phased manner that supports the construction efforts and enables the campus environment to remain functional throughout the period of construction. Heavy equipment would be used to grade and execute road improvements.

6) Bus Stops and Pedestrian Walking Paths

Bus stops would be relocated outside the central corridor of Mercury to keep the workforce away from the primary construction zones. Relocation of the bus stops would require light grading to remove rocks and vegetation, and level the ground surface at the temporary bus stop locations. Bus stops may be relocated multiple times to facilitate various constructions activities. Temporary bus shelters would be installed at the bus stop locations to provide personnel shelter from the elements.

Multiple temporary asphalt walking paths would be installed within the interior of Mercury during the various construction phases. The paths would provide safe access free of uneven surfaces and debris to temporary bus stops that are being relocated during construction activities associated with MM. Light grading to remove rocks and vegetation, and level the ground surface would be conducted prior to asphalt installation. Paths would be constructed with compacted asphalt and laid directly on the surface of the ground. Heavy machinery would be used to level surfaces and install pathways. Upon completion of permanent campus sidewalks and bus stops within the interior and perimeter of the new campus, temporary paths and bus stops would be removed.

7) Site Improvements and Landscaping

Landscaping, sidewalks, walking paths and structures would be constructed to provide a comfortable, hospitable environment for site users and patrons. Landscaping would incorporate native plants and xeriscaping as well as low impact development strategies to minimize environmental impact. Lighted walking paths, shaded outdoor seating and gathering areas would be developed throughout the campus. Plantings would be provided and serve multiple functions across the campus by reinforcing circulation patterns, creating shade, and providing wind breaks. Structures would also be provided to protect seating areas from the elements.

The Mohave Desert plant palette and desert-adapted plants would be used extensively throughout the campus. Plants would be selected to assist in the development of a campus aesthetic that celebrates the natural environment. Proposed plant material would be reviewed to ensure its ability to survive based on the availability of supplemental water for irrigation. Drip irrigation would be provided and installed as part of the landscaping efforts

Landscaping would be installed in a phased manner as the campus develops. Minimal landscaping to control erosion, dust and drainage around buildings would be installed as buildings are completed (e.g. installation of decorative xeri scape such as mulch or rock). Final landscape improvements would be installed by zone once multiple buildings are completed. Grading, removal of earth, and installation of rocks and ground coverings would be required. Cement walkways, shade canopies and landscape features would be installed in accordance with the Mercury Area Plan and forthcoming landscaping design documents.

8) Renovation of Existing Facilities

Existing facilities within the planned campus environment would be upgraded and modernized as required to extend their useful life and functionality. Common upgrades to existing facilities (23-118, 23-117, 23-614, 23-143, 23-525, 23-111, 23-531, 23-532, and 23-535) would include, but are not limited to the following:

- HVAC Upgrades
- Roof Replacements
- Electrical Modernization (panels, breakers, internal wiring)
- Communications Upgrades (Telephone/Data Communications - Upgrade to Cat 6 fiber, etc.)
- Plumbing
- Cosmetic Building Features (Carpet, Paint, etc.)

9) Solar Power Generation

Sustainable energy generation capability is a key element supporting the new campus environment. In accordance with DOE requirements, new facilities would be designed to meet net zero energy operational requirements. Sustainable energy generation capabilities associated with new facility construction would be met through deployment of solar at the NNSS. The first phase of solar development in Mercury was installed adjacent to Mercury Fire Station No. 1 and supplies power directly to the fire station. Excess power generation is fed directly back into the NNSS power grid to offset overall site use. The Mercury Area Plan designates a potential location for expanded solar to the east of the Mercury Campus area. However, because the deployment of additional solar energy generation within the Mercury Campus Area is conceptual in nature at this time, an appropriate level of NEPA review and documentation would be required before it could be implemented.

Categorical Exclusion(s) Applied:

10 CFR 1021 Appendix B: B1.3 Routine Maintenance; B1.4 Air Conditioning Systems for existing equipment; B1.13 Pathways, short access roads, and rail lines; B1.15 Support Buildings; B1.16 Asbestos Removal; B1.23 Demolition of Buildings; B1.27 Disconnection of Utilities; B2.1 Workplace enhancements; B4.6 Additions and modifications to transmission facilities; B4.7 Fiber Optic Cable; B4.10 Removal of electric transmission lines; B4.12 Construction of powerlines; B4.13 Upgrading and rebuilding of existing powerlines; B5.4 Replacement of pipelines; B5.16 Solar PV systems (<10 acres)

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. Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion.

Based on my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action and that other-regulatory requirements set forth above are met. Therefore, the application of a categorical exclusion is appropriate.

NEPA Compliance Officer: Carrie Stewart

Date Determined: 11/06/2018