U.S. Department of Energy (DOE) Environmental Management (EM) Nevada Program Overview

Rob Boehlecke, EM NV Program Manager

Environmental Program Services Contract
Community Event
January 17, 2018
New EM Nevada EPS Contract

- Current EM Nevada Environmental Program Services (EPS) contract expires on 1/31/2020.
- EM Nevada and the EMCBC are currently in the acquisition planning phase for a new follow-on contract.
- A Request For Information (RFI) was released on 1/9/2018.
- A procurement website has been created to post all acquisition related information and documents. The website can be viewed here: [https://www.emcbc.doe.gov/SEB/emnevadaeps/](https://www.emcbc.doe.gov/SEB/emnevadaeps/)
- DOE encourages stakeholder feedback and engagement on the acquisition process.
- Questions regarding the new acquisition can be submitted here: EMNevadaEPS@emcbc.doe.gov
Nevada National Security Site and Nevada Test and Training Range Overview

- NNSS is approximately 1,360 square miles of federally owned and controlled land located 65 miles northwest of Las Vegas.

- Historic mission of the NNSS was nuclear and conventional explosives testing.

- Historic field testing was conducted on the NTTR and TTR.
Mission Overview

Two federal entities responsible for current activities

– The National Nuclear Security Administration oversees the national security mission and overarching management of the NNSS

– The DOE EM NV Program is responsible for remediating sites on the NNSS and portions of the NTTR that were contaminated during nuclear testing operations and for operating the Area 3/Area 5 radioactive waste management facilities
EM Nevada Program Activities

- Underground Test Area
- Decontamination and demolition
- Soils
- Post-closure surveillance and maintenance
- Integration support

- Classified Components, Low-Level and Mixed Low-Level Waste Disposal*
- Radioactive Waste Acceptance Program

*Waste disposal activities are performed by the NNSS M&O and are outside the scope of this RFI.
Regulatory Framework

EM NV Program work is performed in accordance with applicable federal regulations and agreements including:

- Resource Conservation and Recovery Act
- Clean Air Act, Clean Water Act, and Atomic Energy Act
- DOE Orders, and applicable Nevada specific laws, codes and acts
- Agreements in Principle
- Federal Facility Agreement and Consent Order (FFACO) (1996, as amended)
FFACO

• Agreed to by the State of Nevada, DOE EM, the U.S. Department of Defense (Defense Threat Reduction Agency [DTRA]), and DOE Office of Legacy Management

• Governs the process for identifying, characterizing, and providing corrective actions for historical sites within the state of Nevada related to the development, testing, and production of nuclear weapons

• Encompasses enforceable agreement milestones which, if missed, can result in fines

• State of Nevada Division of Environmental Protection (NDEP) approves FFACO documents as the regulator
How the FFACO Regulates the Work We Do Today

• All sites identified in initial inventory were incorporated into the FFACO in 1996 and overlooked sites can be added
  – Number of original sites ~2,577 (1,945 EM)
  – Number of current sites 2,997 (2,153 EM)

• NDEP participates throughout the investigation/closure process for all sites and oversees ongoing long-term monitoring activities for sites where contamination was closed in place

• All documents written for the cleanup of sites are produced using NDEP-approved FFACO outlines
## Proposed Funding Profile ($M)

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Major Elements of Scope

- Underground Test Area
- Soils Remediation
- Soils and Industrial Type Post-Closure Surveillance and Maintenance
- Decontamination and Demolition
- Radioactive Waste Acceptance Program
- EM Integration
Locations of Major Scope Elements
Underground Test Area
Historic Nuclear Testing
Impacts on the Groundwater

- 828 underground nuclear tests conducted at the NNSS from 1951 to 1992
- Underground tests conducted at depths ranging from approximately 90 to 4,800 feet below the ground surface
- One-third of these tests occurred near, below, or in the water table
- Some radioactive contamination detected in groundwater on the NNSS and the Nevada Test and Training Range
NNSS Groundwater Program Objectives

• Due to significant worker safety concerns and cost associated with any type of active remediation, the Department of Energy, in consultation with the NDEP, has selected monitored natural attenuation with access controls as the end state.

• Monitoring locations will be determined through investigation and modeling of the nature and extent of contamination.

• This decision is documented in the Federal Facility Agreement and Consent Order.
NNSS Groundwater Program Objectives (continued)

• This strategy is supported with the activities described below:
  – Using investigative methods, such as drilling wells to study the hydrology and geology
  – Sampling wells, analyzing samples, and building computer models from gathered data
  – Implementing controls to prevent access to contaminated groundwater
  – Ongoing monitoring of wells on and off the NNSS establishing a comprehensive long-term monitoring network to ensure public protection
  – Staying up-to-date on water right applications to monitor future access or inadvertent migration of contaminated groundwater
Corrective Action Unit (CAU) Status

Five CAUs make up the UGTA activity:

- **Yucca Flat/Climax Mine (CAU 97)**
  - Current: CADD/CAP being finalized
  - Forecasted: Preparing Closure Report
  - Remaining scope: Complete Closure Report, perform evaluation well sampling and monitoring, installation of monitoring wells, well development and testing, and post-closure monitoring
CAU Status (continued)

- **Frenchman Flat (CAU 98)**
  - Current & forecasted: In closure
  - Remaining scope: Post-closure monitoring

- **Rainier Mesa/Shoshone Mountain (CAU 99)**
  - Current: Conducting modeling under Alternative Modeling Strategy
  - Forecasted: In closure
  - Remaining scope: Installation of monitoring wells, well development and testing, and post-closure monitoring
CAU Status (continued)

- **Central Pahute Mesa (CAU 101) and Western Pahute Mesa* (CAU 102)**

  - Current & forecasted: Conducting Phase II Corrective Action Investigation
  - Remaining scope: Installation of evaluation wells, well development and testing of evaluation wells, characterization/evaluation sampling and monitoring, characterization data analysis, flow and transport model development, completion of the CADD/CAP document, model evaluation, and completion of the Closure Report

*Western and Central Pahute Mesa are managed as one entity*
Soils Remediation
Soils Sites

- Atmospheric nuclear weapons tests, nuclear safety experiments, and evaluation tests for peaceful uses of nuclear explosives conducted at the NNSS and NTTR (operated by the U.S. Air Force) resulted in radioactive contamination of surface and near surface soils.

- The Soils activity includes the characterization and remediation of surface and near surface soil contamination resulting from atmospheric nuclear testing.

- All 148 Soils sites are projected to be in closure by the end of 2019.

- The anticipated remaining scope consists of soils studies to enhance knowledge of fate and transport of contaminants during post closure monitoring.
Soils and Industrial Type Post-Closure Surveillance & Maintenance
Post-Closure Surveillance & Maintenance

- Approximately 150 closed sites on the NNSS and NTTR require post-closure surveillance and maintenance.
- Monitoring reports documenting post-closure inspections are submitted to NDEP.
Decontamination and Demolition (D&D)
D&D Overview

- The remaining D&D sites are grouped into two CAUs:
  - Engine Maintenance Assembly and Disassembly (EMAD) Facility
  - Test Cell C Ancillary Structures and Buildings
- Facilities originally supported Nuclear Rocket Development Station activities on the NNSS.
- End state is anticipated to be demolition to slab and disposal of all wastes.
EMAD Facility

- An approximately 165,000-square-foot, four-story building that is 80 feet high with walls constructed of either concrete, asbestos-coated corrugated steel, or concrete block.

- Building interior is divided among the following functional areas: (1) Hot Bay Complex, (2) Operating Galleries and Master Control Room, (3) Cold Bay Complex, (4) Machine and Repair Shops, and (5) Facility Support areas.

- Includes two train cars.
Test Cell C

- Includes support buildings such as an Equipment Building, Motor Drive Building, Pump House, Cryogenic Evaluation Lab, and Engine Transport System Maintenance Building.

- Includes ancillary structures such as Reactor Cooling Station, Water Tank, Tower Water Tank, Hydrogen Tanks, Water Process Tank, and Liquid Hydrogen Tanks.
Radioactive Waste Acceptance Program
Radioactive Waste Disposal Overview

• The NNSS has served as a vital waste disposal resource in the nation-wide cleanup of former nuclear research and testing facilities and for ongoing missions.

• The NNSS management and operating contractor performs low-level radioactive waste (LLW), mixed LLW, and classified waste disposal operations which are outside the scope of this Request for Information.

• The Radioactive Waste Acceptance Program (RWAP) ensures waste disposed at the NNSS meets the requirements established in the NNSS Waste Acceptance Criteria (WAC).
  – The NNSS WAC is available at http://www.nnss.gov/docs/docs_RWM/NNSSWAC_Nov%202016.pdf
RWAP Elements

- Waste Acceptance Coordination
- Facility Evaluations/Verifications
- Waste Acceptance Review Panel
- Waste Acceptance Support
Waste Acceptance Coordination

- Coordination of all RWAP activities between generators, the management and operating contractor, and federal staff
- Maintaining interfaces with waste certification officials at generator sites
- Sharing of information and lessons learned amongst the waste generator community
- Coordinating an annual waste generator workshop
Facility Evaluations/Verifications

- Approved generators undergo an initial audit to ensure their waste program conforms to NNSS requirements.
- After a waste generator obtains approval, periodic assessments and facility evaluations of the generator’s waste program are conducted to verify continued compliance with the NNSS WAC.
Waste Verification

• Verification Types
  – Physical
    • Visual inspection
    • Real-time-radiography
  – Chemical
    • Field chemical screen
    • Split sample
Waste Acceptance Review Panel

- Review waste streams for compliance with NNSS WAC
- Waste Acceptance Review Panel consists of the following:
  - Radioactive Waste Acceptance Program staff
  - State of Nevada Division of Environmental Protection (Resource Conservation and Recovery Act [RCRA] and Joint Oversight)
  - Operations
  - Performance
  - Safety Basis Team
  - Nuclear Criticality Team
Waste Assistance and Technical Support

– Performs site visits to generators
– Assists generators to be compliant with NNSS WAC
EM Integration
EM Integration

- Environmental Management Information System and FFACO support
- Public Involvement and Strategic Communication support
- Classification support
- Closeout and transfer to Legacy Management or NNSA
- Other services such as property management, records management, safety and health, quality assurance, information technology etc.