Nevada National Security Site

Drill rig for construction of groundwater characterization well ER-20-4 located on Pahute Mesa at the NNSS.

Nevada National Security Site

Overview

NNSS was used from 1951 to 1992 to conduct a total of 100 atmospheric and 828 underground nuclear weapons tests. As a result, some groundwater, surface soils, and industrial facilities were contaminated on the NNSS and the surrounding Nevada Test and Training Range (NTTR).

In accordance with the Federal Facility Agreement and Consent Order (FFACO), EM is responsible for environmental corrective actions at 148 surface and near-surface soil locations, 1,013 industrial locations, and groundwater contaminated by historical nuclear testing. Environmental corrective actions have been completed at all the surface soils locations, and there are two industrial facilities remaining to be addressed.

Concerning groundwater contamination, the FFACO strategy agreed upon with the State of Nevada requires the identification of contaminant boundaries, restricted access to contaminated groundwater, and the implementation of a long-term monitoring program. Because of the vast and complex geology of the NNSS, groundwater contamination is grouped into characterization areas based on location and similar geology. One of the groundwater characterization areas has already been transitioned into the final "closure" phase of the FFACO groundwater strategy, long-term monitoring; another two will transition to long-term monitoring in 2020; and investigations are ongoing in the last area to fully understand the nature and extent of contamination.

Cleanup accomplishments include:

- **Completed cleanup actions at the last soils site.**
- **Disposed of approximately 1 million ft³ of classified and LLW and MLLW.**
- **Maximized the capacity of a permitted cell which allowed for an extra 125,000 ft³ of MLLW to be disposed of before permanent closure.**

Cleanup Highlights 2020-2030

Over the coming decade, EM will complete its current scope of cleanup activities at the NNSS.

GROUNDWATER/SOIL REMEDIATION

In 2020, the Office of Legacy Management will take responsibility for long-term monitoring of FFACO sites located on the Tonopah Test Range (TTR) where environmental corrective actions were completed.

Also in 2020, long-term monitoring activities are expected to begin for the Rainier Mesa/Shoshone Mountain; and Yucca Flat/Climax Mine groundwater characterization areas.

At the Pahute Mesa groundwater characterization area, the Corrective Action Investigation phase (including completion of the Flow and Transport Model, External Peer Review, and regulatory approval of the Corrective Action Plan) will be completed by the end of 2023. By the end of 2027, the Model Evaluation Phase will be completed for Pahute Mesa to include drilling five model evaluation wells, data analysis, flow and transport model adjustments, and

regulatory approval for the final phase. By the end of 2028, the Pahute Mesa area will transition into long-term monitoring.

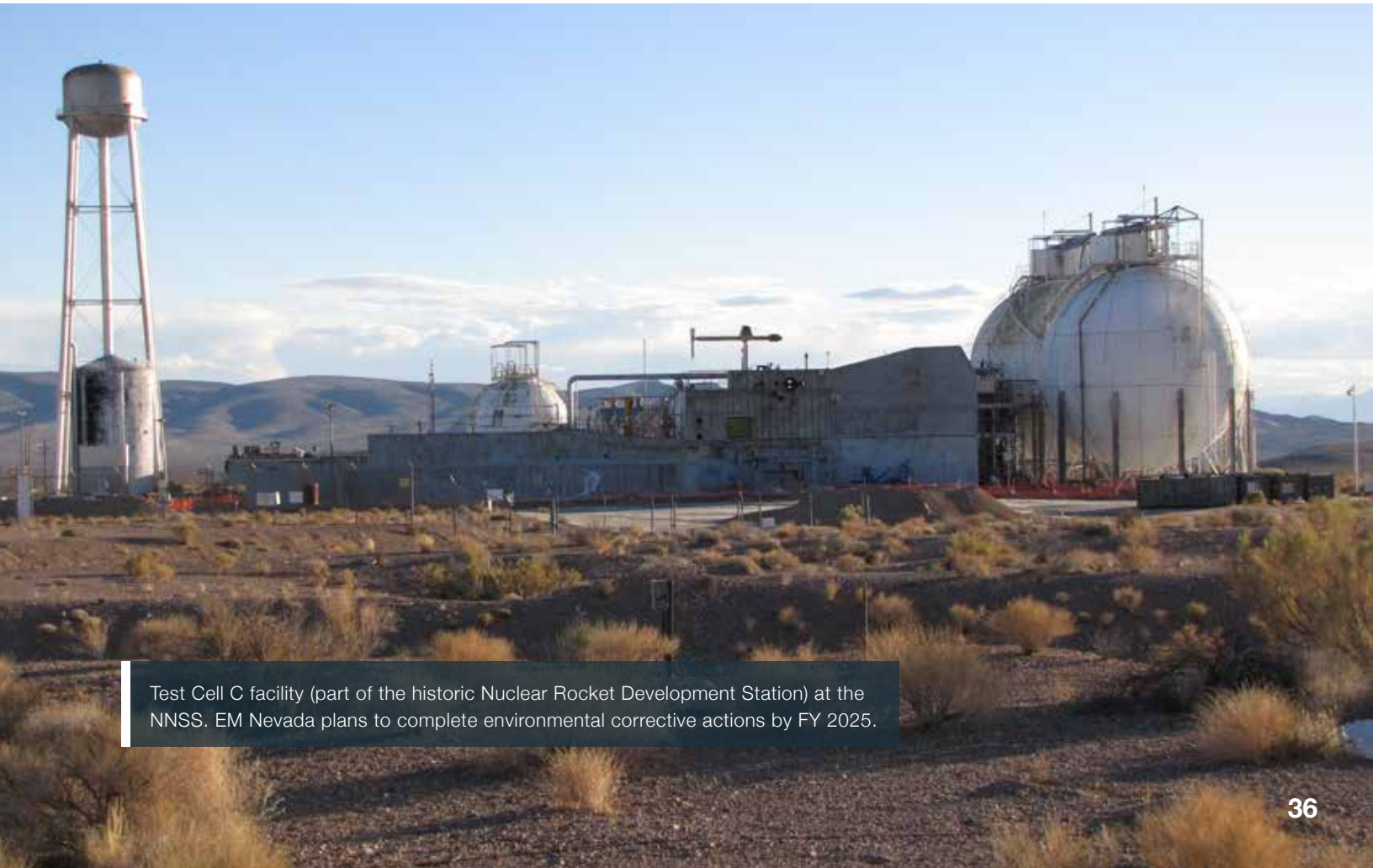
INDUSTRIAL FACILITIES

The two remaining industrial facilities are the Engine Maintenance Assembly and Disassembly (EMAD) facility and Test Cell C Ancillary Buildings and Structures, which consist of eight sites requiring cleanup. By the end of 2022, EM plans to receive regulatory approval on the corrective action strategy for the EMAD and Test Cell C sites. In 2025, EM will have addressed the required regulatory actions to close Test Cell C sites. The current plan is to demolish the buildings to grade with appropriate disposal of the debris, and to close in place any contamination located below grade. In 2027, EM will complete similar regulatory actions to close EMAD. The completion of environmental correction actions at EMAD and Test Cell C sites will result in the demolition and cleanup of all industrial facilities that are included in the FFACO.

Long-term monitoring of the FFACO corrective action sites on the NNSS will remain the responsibility of the EM Nevada Program until all FFACO-required environmental corrective actions on the NNSS are completed in 2028. At that time, any sites requiring future post-closure monitoring and use restrictions per the FFACO will be managed by the NNSA.

WASTE DISPOSAL ACTIVITIES

The NNSS will continue to support cleanup activities across the DOE complex by providing disposal capacity and services for up to 1.2 million cubic feet annually of LLW, MLLW, and classified waste through 2030.



Test Cell C facility (part of the historic Nuclear Rocket Development Station) at the NNSS. EM Nevada plans to complete environmental corrective actions by FY 2025.

Remaining Cleanup Scope Post-2030

EM currently anticipates a need for the ability to dispose of waste at the NNSS beyond 2030.

Low-level radioactive waste disposal activities at the NNSS Area 5 Radioactive Waste Management Complex.