

Nevada Site Office EM Project(s)

Baseline Summary

June 2008

BACKGROUND

The Nevada Test Site (NTS) is located approximately 65 miles northwest of Las Vegas, Nevada and occupies approximately 1,375 square miles. The remote site is one of the largest restricted access areas in the United States and is surrounded by thousands of acres of land withdrawn from the public domain for use as a protected wildlife range and for a military test and training range.

For more than 40 years, the primary mission of the NTS was to conduct tests of both nuclear and conventional explosives in connection with the research and development of nuclear weapons. Atmospheric testing of nuclear weapons was initiated in 1951. Nuclear tests conducted at the NTS after July 1962 were underground. Nuclear testing was suspended in October 1992, although a readiness posture is maintained by Presidential mandate.

Environmental restoration activities began to address environmental liabilities associated with nuclear weapons production and testing. Early restoration efforts were focused on cleaning detonation locales to reuse them for subsequent tests, with the generated debris being disposed through an on-site waste management program. Environmental restoration and waste management activities have been key elements of the Nevada Site Office (NSO) environmental program since the beginning of the nation's nuclear testing program.

Beginning in 1976, some radioactive waste generated at the Mound, Ohio site was disposed at the NTS. Concurrently, increased attention to the U.S. Department of Energy (DOE) Complex-wide waste inventory brought more low-level waste (LLW) from a greater number of DOE sites to the NTS for disposal. Because of the increasing volume of waste generated via environmental restoration activities across the DOE Complex, the majority of waste disposed at the NTS waste management facilities currently comes from off-site generators.

SCOPE DESCRIPTION

The Environmental Management (EM) program at the NTS (including the Nevada Test and Training Range) consists of the Waste Management (WM) and Environmental Restoration (ER) Projects. The WM Project supports the closure of DOE sites across the United States by maintaining the capability to dispose LLW and mixed low-level waste (MLLW) from approved waste generators. The NTS is designated as a regional disposal site for LLW and a secondary disposal site for MLLW generated as the result of cleanup activities across the DOE Complex. Additionally, the WM Project is responsible for the storage, treatment (as needed), repackaging, and disposition of legacy on-site transuranic (TRU) and mixed transuranic (MTRU) waste.

The mission of the ER Project is to assess and perform appropriate corrective actions at approximately 800 former underground test locations, more than 100 surface or atmospheric test locations, and over 1,000 other industrial-type sites that are the result or by-product of past nuclear testing and support activities. Environmental Restoration activities include the removal and clean closure of surface and near surface contamination where possible; implementation of use restrictions and institutional controls for close-in-place locations to preclude inadvertent contact with contaminants; and establishment of predictive groundwater models and monitoring networks where necessary to ensure contaminated groundwater stays within predicted contaminant boundaries.

PROJECT MANAGEMENT

Based on the direction from EM Headquarters, NSO developed the near-term baseline for each of its projects. These project baselines have undergone independent reviews to verify the reasonableness of the scope, cost, and schedule for each project. An approved near-term baseline reflects the identified scope that can reasonably be accomplished for the identified cost in the identified time period if near-term baselines are funded as profiled and contingency funds are provided as required during project execution. It also establishes the baseline as an acceptable point from which to track and control future change. The review and approval process accommodates the likely changes in the EM complex, site priorities and funding plans. These changes could affect both near-term (within the next five years) and life-cycle cost, schedule and scope. Such future changes may be required to comply with applicable environmental legal obligations while maintaining essential functions necessary to protect human health, the environment and national security; reflect funding different from the baseline assumptions; incorporate technological advances; realize specific programmatic risks; or implement programmatic business cases. Because the cleanup extends beyond the near-term, out-year planning estimates (ranges) have also been developed and independently reviewed.

LIST OF PROJECTS

The NSO EM program consists of three projects as shown below: The Near-Term Baseline (NTB) for VL-NV-0030 is from fiscal year (FY) 2007 – FY 2012. The NTB for VL-NV-0013 and VL-NV-0080 is from FY 2008 – FY 2012. The Out Year Planning Estimate Range (OPER) is from FY 2013 through FY 2027 for VL-NV-0030 and VL-NV-0080.

Project	Date Approved	
	Near Term Baseline (NTB)	Out Year Planning Estimate Range (OPER)
VL-NV-0013 – Solid Waste Stabilization and Disposition – Nevada Test Site	Jan. 25, 2008	N/A
VL-NV-0030 – Soil and Water Remediation – Nevada Test Site	Jan. 25, 2008	Jan. 25, 2008
VL-NV-0080 – Operate Waste Disposal Facility – Nevada	Jan. 25, 2008	Jan. 25, 2008

PROJECT SCOPE

VL-NV-0013 – Solid Waste Stabilization and Disposition – Nevada Test Site

This Project Baseline Summary (PBS) scope is responsible for the storage, treatment (as needed), repackaging, and disposition of legacy on-site TRU and MTRU waste. Disposition of the remaining legacy TRU/MTRU waste will include shipment to an off-site facility within the DOE Complex for characterization before being shipped to the Waste Isolation Pilot Plant for disposal, or treatment and disposal at the NTS as applicable (e.g., LLW and MLLW). The end state for the NSO TRU/MTRU activities is the elimination of the legacy TRU/MTRU waste and material from the NTS Radioactive Waste Management Complex to reduce the risk to the NTS workers and the environment resulting from continued storage. The NTS TRU/MTRU waste related facilities will be decontaminated and decommissioned, or will be transitioned to other uses. This PBS is projected to close at the end of FY 2008.

VL-NV-0030 – Soil and Water Remediation – Nevada Test Site

The scope of this PBS is to assess and perform appropriate corrective actions at approximately 800 former underground test locations, 100 surface or near surface radiological soil contamination locations, and more than 1,000 other industrial-type sites. Historic NTS underground nuclear test activities resulted in groundwater contamination. To address the underground test locations, ER activities include geologic and hydrologic characterization, contaminated groundwater transport modeling, contaminant boundary definition, and establishment of a monitoring system to protect against the inadvertent use of contaminated groundwater.

The radiological soil contamination sites are a result of historic nuclear detonations, safety experiments, storage/transportation related tests, nuclear reactor development and experiments, nuclear rocket engine tests, and hydronuclear experiments. For these sites, contamination will be isolated, contained, and/or removed at areas where soil contamination is the highest (i.e., localized areas of elevated radioactivity).

The industrial-type sites mainly supported facilities and structures that were left after conducting aboveground and underground nuclear tests and surface nuclear engine and reactor experiments. The industrial-type sites restoration addresses facility decontamination and decommissioning, various historical infrastructure remediation efforts (e.g., septic systems, mud pits, storage tanks, disposal sites), and conventional weapons cleanup including unexploded ordnance. The industrial-type sites cleanup goal is to eliminate access to contamination by removal and clean closure or closure-in-place, capping, and establishing appropriate use restrictions.

VL-NV-0080 – Operate Waste Disposal Facility – Nevada

This PBS supports the closure of DOE sites across the United States by maintaining the capability to dispose LLW and MLLW from approved waste generators. The NTS is designated as a regional disposal site for LLW and a secondary disposal site for MLLW generated as the result of cleanup activities across the DOE Complex. The scope of this PBS involves both management support and operational development and/or maintenance activities for both storage and disposal facility operations. Specifically, this includes technical and regulatory evaluations of currently approved and new LLW generators through the Radioactive Waste Acceptance Program; maintenance of an on-site waste certification program; documentation reviews and development; safety basis reviews; internal and external inspections; and audits/assessments. The long-term end state for the NSO waste operations is closure of all filled disposal cells with a final approved closure cap. Acceptance and disposal of mixed low-level waste from approved on-site and off-site generators is anticipated through December 2010, or earlier if the design capacity (20,000 cubic meters) of the disposal cell is reached. Capability to receive large quantities of LLW from generators throughout the DOE Complex is scheduled for completion in FY 2027.

PROJECT COST

(dollars in millions)

Cost Element	Project Number		
	VL-NV-0013	VL-NV-0030	VL-NV-0080
1. Prior Year Costs	\$78.9	\$570.8	\$61.9
2. Total Near-Term Baseline (50% Confidence Level)	\$18.9	\$362.4	\$108.6
3. Unfunded Contingency	\$11.0	\$34.2	\$5.9
4. Performance Baseline (80% Confidence Level)	\$29.9	\$396.6	\$114.5
5. Out Year Planning Estimate Range	0	\$730 – \$1,000	\$399.3 – \$420.2
6. Total Life Cycle Cost	\$108.8	\$1,965.0	\$596.6

SUMMARY LIFECYCLE BASELINE SCHEDULE

ENVIRONMENTAL MANAGEMENT PROGRAM (N90)			LEVEL II SCHEDULE																		00-Jun-2010 09:02		
WBS	ID	Start	Finish	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025		
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		
1 NEVADA SITE OFFICE																							
1.1 ENVIRONMENTAL MANAGEMENT PROGRAM																							
1.1.1 ENVIRONMENTAL RESTORATION PROJECT - VL-NV-0020																							
1.1.1.1 SOILS																							
1.1.1.1.01	CAU 413 CLEAN SLATE 2	3312	15-Dec-2008																				
1.1.1.1.02	CAU 415 CLEAN SLATE 3	381	13-Jan-2011																				
1.1.1.1.03	CAU 415 PROJECT 07	1517	01-Dec-2008																				
1.1.1.1.04	CAU 388 PLUTONIUM VALLEY	478	15-Dec-2010																				
1.1.1.1.05	CAU 355 GYX	320	12-Mar-2009																				
1.1.1.1.06	CAU 101 SOUTH YUCCA FLAT	1332	01-Dec-2013																				
1.1.1.1.07	CAU 102 NORTH YUCCA FLAT	148	01-Dec-2011																				
1.1.1.1.08	CAU 105 FRENCHMAN FLAT	480	02-Dec-2009																				
1.1.1.1.09	CAU 107 BACKBOARD MESA	440	25-Sep-2013																				
1.1.1.1.10	NUCLEAR ROCKET RIGGING	512	01-Dec-2013																				
1.1.1.1.11	CAU 415 HYDRONUCLEAR	618	18-Sep-2011																				
1.1.1.1.12	CAU 327 BEDAN	460	01-Dec-2009																				
1.1.1.1.13	CAU 370 JOHNNIE BOY	460	23-Sep-2012																				
1.1.1.1.14	CAU 371 DANNY BOY	460	02-Dec-2009																				
1.1.1.1.15	CAU 372 CABR CLIP PALANQUIN	460	01-Dec-2008																				
1.1.1.1.16	CAU 324 SCHOONER (CAU 324)	460	01-Dec-2009																				
1.1.1.1.17	CAU 375 DUGGY CAU 375	460	01-Dec-2009																				
1.1.1.1.18	CAU 341 SMALL BOY	240	29-Sep-2008																				
1.1.1.1.19	NEPTUNE	460	12-Sep-2015																				
1.1.2 UNDERGROUND TEST AREA																							
1.1.2.01	FRENCHMAN FLAT	284	02-Dec-2009																				
1.1.2.02	WESTERN PAHUTE MESA	1119	01-Dec-2009																				
1.1.2.03	YUCCA FLAT/CUMMEX MINE	1360	02-Dec-2009																				
1.1.2.04	CENTRAL PAHUTE MESA	2170	02-Dec-2009																				
1.1.2.05	KAMIK MESA/SHOSHONE MOUNTAIN	1478	02-Dec-2009																				
1.1.3 INDUSTRIAL SITES																							
1.1.3.01	ORIGINAL WELLS SOURCE GROUP	760	02-Dec-2009																				
1.1.3.02	INACTIVE TANKS SOURCE GROUP	779	02-Dec-2009																				
1.1.3.03	CONTAMINATED WASTE SITES SOURCE GROUP	1161	02-Dec-2009																				
1.1.3.04	SEPTIC TANKS & LAGOONS SOURCE GROUP	250	12-Mar-2009																				
1.1.3.05	INACTIVE PONDS & TUNNEL BUCKLES SOURCE	1361	15-Feb-2007																				
1.1.3.06	DRAINS & Sumps SOURCE GROUP	414	01-Dec-2009																				
1.1.3.07	ORDNANCE SITES SOURCE GROUP	460	02-Dec-2009																				
1.1.3.08	SPILL SITES SOURCE GROUP	70	02-Dec-2009																				
1.1.3.09	DND FACILITIES SOURCE GROUP	1280	13-Sep-2008																				
1.1.3.10	PRELIMINARY ASSESSMENTS	1384	02-Dec-2009																				
1.1.3.05	SURVEILLANCE & MAINTENANCE	1428	02-Dec-2009																				
1.1.4 WASTE MANAGEMENT																							
1.1.4.01	TRAMTRU WASTE - VL-NV-0113	599	02-Dec-2009																				
1.1.4.02	LOW LEVEL WASTE - VL-NV-0035	2310	01-Dec-2007																				
1.1.4.03	LLW Program Support	719	01-Dec-2007																				
1.1.4.04	LLW Generator Program	2218	01-Dec-2007																				
1.1.4.05	LLW Disposal	3219	01-Dec-2007																				
1.1.4.06	Disposal Operations (Chargeback)	2210	01-Dec-2007																				

█ Active Work █ Critical Remaining Work
█ Remaining Work ● Milestone

Date	Revision	Created	Approved
	1.1.1. Rev M		