

Carlsbad Field Office EM Project(s)
Baseline Summary
June 2008

BACKGROUND

The Waste Isolation Pilot Plant (WIPP) site is located in southeastern New Mexico approximately 26 miles southeast of the city of Carlsbad. The WIPP site is built on a 10,240-acre parcel of land set aside by Public Law 102-579.

The primary mission of the Department of Energy (DOE's) Carlsbad Field Office (CBFO) is to protect human health and the environment by operating WIPP for safe disposal of defense-related transuranic (TRU) waste and by establishing an effective system for management of TRU waste from generation to permanent disposal. The WIPP site is essential in the effort to clean-up TRU waste across the EM complex. The WIPP facility is divided into three basic groups; surface structures, shafts, and subsurface structures. The WIPP facility surface structures accommodate the personnel, equipment, and support services required for receipt, preparation, and transfer of TRU waste from the surface to the underground. The surface structures are located in an area of approximately 34 acres within a perimeter security fence. Four vertical shafts extend from the surface to the underground disposal horizon. The disposal horizon is located approximately 2150 feet below the surface in a stable salt formation. The four shafts are the waste shaft, the salt handling shaft, the exhaust shaft, and the air intake shaft. The underground structures consist of the waste disposal, construction, and northern experimental areas. The transportation portion of the program includes a fleet of trailers and Nuclear Regulatory Commission certified transportation packages. CBFO has contracts for transportation services with two carriers. The carriers provide tractors and the drivers, and the government provides the trailers and shipping packages (e.g., TRUPACT-IIs and HalfPacts).

The contractors to CBFO have specific roles and responsibilities for ensuring the success of WIPP operations. Washington TRU Solutions (WTS), LLC, is the management and operating (M&O) contractor for WIPP and is also responsible for scheduling and coordinating transportation and managing mobile characterization. WTS' major responsibility under their contract with CBFO is the integration of the three main functions within the TRU waste program: characterization, transportation, and disposal. Sandia National Laboratories (SNL) is the scientific advisor for repository recertification, Los Alamos National Laboratory (LANL) is the scientific advisor for waste characterization, the CBFO Technical Assistance Contractor (CTAC) provides technical and quality assurance support to CBFO, and CAST and Visionary Solutions provide the transportation carrier services.

SCOPE DESCRIPTION

The Carlsbad Field Office (CBFO) is responsible for managing the Nation's transuranic (TRU) waste generated by atomic energy defense activities. The legacy TRU waste consists of about 110,000 cubic meters of Contact Handled (CH) TRU waste and about 5,300 cubic meters of Remote Handled (RH) TRU waste. More specifically, CBFO is responsible for the national quality assurance program for TRU waste and related audits, activities related to characterization and certification of TRU waste at generator and interim storage sites, TRU waste transportation, packaging and container development as well as disposal of TRU wastes at WIPP. Generally the generator/storage sites are responsible for providing the infrastructure necessary to support

characterization and certification activities as well as retrieving and remediating TRU waste that will provide a sufficient backlog to support CBFO's planned shipping and disposal rates.

Legacy TRU waste inventory is located at the DOE's five Large Quantity Sites (LQSs) (i.e., Hanford, Savannah River, Idaho, Los Alamos, and Rocky Flats*) and at over 20 Small Quantity Sites (SQSs) throughout the country.

Some of the key regulators and stakeholders involved in the CBFO National TRU Waste Program include:

Repository: U.S. Environmental Protection Agency (EPA), State of New Mexico Environmental Department (NMED), Mine Safety and Health Administration, New Mexico State Mine Inspection Department, Defense Nuclear Facilities Safety Board and U.S. Department of the Interior.

Transportation: U.S. Department of Transportation (DOT), U.S. Nuclear Regulatory Commission (NRC), states and local jurisdictions along shipping routes, including Native American Tribes and the city of Carlsbad. Some stakeholders act within a group, such as the Western Governors Association.

Technical Expertise: U.S. National Institute of Standards and Technology; National Academy of Sciences as well as various universities.

PROJECT MANAGEMENT

Based on the direction from EM Headquarters, the Carlsbad Field Office developed the near-term baseline for each of its projects. These project baselines have undergone an independent review 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 Carlsbad Field Office EM program consists of three projects as shown below: The Near-Term Baseline (NTB) for these projects is from FY 2008 – FY 2012 and the Out Year Planning Estimate Range (OPER) is from FY 2013 through FY 2035.

* Rocky Flats completed shipment of TRU waste to WIPP in FY05.

Project	Date Approved	
	Near Term Baseline (NTB)	Out Year Planning Estimate Range (OPER)
CB-0080 – Operate Waste Disposal Facility - WIPP	January 11, 2008	January 11, 2008
CB-0081 – Central Characterization Project	January 11, 2008	January 11, 2008
CB-0090 - Transportation - WIPP	January 11, 2008	January 11, 2008

PROJECT SCOPE

CB-0080 – Operate Waste Disposal Facility - WIPP

This PBS can be found within the Defense Environmental Cleanup appropriation. The Waste Isolation Pilot Plant, in Carlsbad, New Mexico, is the nation's only mined geologic repository for the permanent disposal of defense-generated transuranic waste. The Carlsbad Field Office was created to serve as the focal point for the DOE transuranic waste management efforts. Transuranic waste is currently stored at multiple sites across the country. All legacy transuranic waste has been removed from 12 sites: ARCO Medical Products Company, Battelle Columbus Laboratory-West Jefferson Site, Brookhaven National Laboratory, Energy Technology Engineering Center, Fernald, Inhalation Toxicology Laboratory, Knolls Power Atomic Laboratory-Nuclear Fuel Services, Missouri University Research Reactor, Mound, Rocky Flats Environmental Technology Site, Teledyne-Brown, and U.S. Army Materials Command. The defense generated transuranic waste from all of the generator sites eligible for Waste Isolation Pilot Plant disposal must ultimately come to the Waste Isolation Pilot Plant for receipt, handling, and disposal. The Carlsbad Field Office has the responsibility for management of the National Transuranic Waste Program, whose mission is the implementation and management of a national system that safely and cost effectively provide for the disposal of this waste in a regulatory compliant manner. This PBS supports all activities related to the disposal of contact-handled and remote-handled transuranic waste at the Waste Isolation Pilot Plant. Key elements of this system are: 1) operation of the disposal facility—including mining, waste handling, and the infrastructure to safely maintain the facility and operations in compliance with all Federal and state laws, regulations, and environmental requirements; 2) Environmental Compliance— maintenance of compliance certification through monitoring and verifying the performance of the system's sensitive parameters; and 3) National Transuranic Waste Integration Program—integration and infrastructure activities required to certify the transuranic waste and coordinate all activities across the transuranic waste complex for shipments of waste to the Waste Isolation Pilot Plant. End-States: All legacy transuranic waste across the DOE complex will be disposed of at the Waste Isolation Pilot Plant. Receipt of newly generated waste will continue until the EM end point of 2030. The statutory limit for transuranic waste is 175,600 cubic meters, which includes 7,080 cubic meters for remote-handled transuranic waste. Decommissioning of the surface facilities and permanent closure of the underground facility will be complete in 2035. The surface area will remain under institutional controls for 100 years after the disposal phase ends.

CB-0081 – Central Characterization Project

This PBS can be found within the Defense Environmental Cleanup appropriation. It provides labor, materials and supplies for operation of mobile waste characterization systems that are deployed to Department of Energy generator sites for characterization of transuranic waste to be disposed at the Waste Isolation Pilot Plant, as well as centralized transuranic waste analytical services at Idaho and Carlsbad Environmental Monitoring and Research Center. It also provides generator site services at selected sites to characterize transuranic waste for transportation to Waste Isolation Pilot Plant or to another site for final Waste Isolation Pilot Plant certification where cost effective. These services can include acceptable knowledge compilation and reporting, data generation, project level validation and verification, records management, and document control; non-destructive examination, non-destructive assay, headspace gas sampling and analysis, mobile visual examination and repackaging, and mobile loading support. The use of mobile systems provides host sites with a highly regulated program that has already been certified for

use. Development and full deployment of these services represents sound management and implementation of value engineering. This PBS also provides a DOE-wide single certification program for remote-handled transuranic waste shipments to Waste Isolation Pilot Plant at the generator/shipping sites and a DOE-wide transuranic waste shipping confirmation process required by the Waste Isolation Pilot Plant hazardous waste permit from the New Mexico Environment Department. End-States: All transuranic waste requiring use of the Central Characterization Project across the DOE complex will be disposed of at the Waste Isolation Pilot Plant. Receipt of newly generated waste will continue until the Environmental Management end point of 2030. Decommissioning of the surface facilities and permanent closure of the underground facility will be complete in 2035. The surface area will remain under institutional controls for 100 years after the disposal phase ends.

CB-0090 - Transportation – WIPP

This PBS can be found within the Defense Environmental Cleanup appropriation. It includes all transportation activities required to support the disposal of both contact-handled and remote-handled transuranic waste to the Waste Isolation Pilot Plant, or other designated sites. This includes carrier services, transportation packaging, shipping coordination, and stakeholder interfaces related to transportation. As required in the Waste Isolation Pilot Plant Land Withdrawal Act, this PBS provides for technical assistance for the purpose of training public safety officials and other emergency responders, as described in part 1910.120 of Title 29, CFR, in any State or Indian tribal land through whose jurisdiction DOE plans to transport transuranic waste to or from the Waste Isolation Pilot Plant. End-States: The Carlsbad Field Office has the capability and physical resources to ship 40 shipments per week; however actual shipments are funding dependent. All shipping activities are scheduled to end by 2030.

PROJECT COST

(dollars in millions)

Cost Element	Project Number		
	CB-0080	CB-0081	CB-0090
1. Prior Year Costs (1997-2007)	\$1,676.6	\$94.7	\$285.3
2. Total Near-Term Baseline (50% Confidence Level)	\$683.4	\$141.9	\$163.6
3. Unfunded Contingency	\$59.5	\$12.0	13.9
4. Performance Baseline (80% Confidence Level)	\$742.9	\$153.9	\$177.5
5. Out Year Planning Estimate Range	\$2,540.0 – \$2,930.0	\$269.1 –\$326.3	\$500.0 – \$580.0
6. Total Life Cycle Cost	\$5,349.5	574.9	\$1,042.8

SUMMARY LIFECYCLE BASELINE SCHEDULE



□ Current Bar Labels ♦ Actual Milestone ■ Actual Work ■ Critical Milestone ■ Critical Re...
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