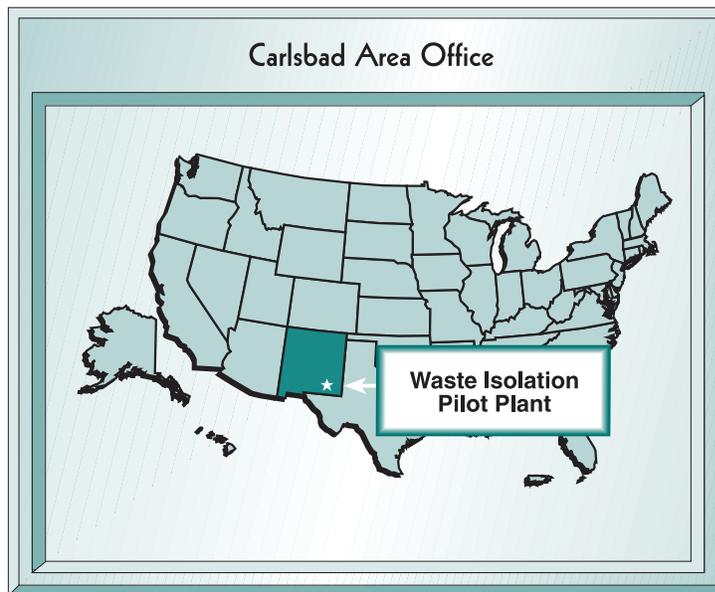


E.2 Carlsbad Area Office Summary

The mission of the Carlsbad Area Office (CAO) is to protect human health and the environment by opening and operating the Waste Isolation Pilot Plant (WIPP) for safe disposal of transuranic (TRU) waste and by establishing an effective system for management of TRU waste from generation to disposal. It includes personnel assigned to CAO, WIPP site operations, transportation, and other activities associated with the National TRU Program (NTP). The CAO develops and directs implementation of the TRU waste program, and assesses compliance with the program guidance, as well as the commonality of activities and assumptions among all TRU waste sites.

A cornerstone of the Department of Energy's (DOE) national cleanup strategy, WIPP is designed to permanently dispose of TRU waste generated by defense-related activities. Located in southeastern New Mexico, 26 miles east of Carlsbad, project facilities include disposal rooms excavated 2,150 feet underground (about a half mile) in an ancient, stable salt



formation. TRU waste consists primarily of tools, gloves, clothing and other such items contaminated with trace amounts of radioactive elements, mostly plutonium. WIPP is scheduled to begin disposing of defense-generated TRU waste in FY 1998. On May 13, 1998, the Secretary of Energy made the decision that WIPP is ready to begin disposal operations after the 30-day Congressionally mandated notification period. However, transportation of TRU waste will be limited to non-mixed waste until the State of New Mexico has issued a Resource Conservation and Recovery Act (RCRA) Part B Permit.

E.2.1 End State

WIPP is neither a “cleanup” nor “closure” site. It is the only TRU waste disposal site in the world. TRU waste management activities for both contact-handled (CH) and remote-handled (RH) TRU wastes are projected to be completed by FY 2039 after completing the Disposal Phase in FY 2033, five years for decommissioning of the surface facilities, and permanently closing the underground. In accordance with the Land Withdrawal Amendment Act of 1996

(LWAA), DOE will have disposed of 175,600 cubic meters of TRU waste in WIPP. Starting in FY 2039, a reduced federal staff and technical contractor support will maintain records of WIPP and the active institutional controls associated with the land withdrawal. Monuments and markers will be built at the site to warn people of the presence of radioactive waste. Active institutional controls over the site will be maintained for 100 years. Low risk has been assigned to this project based upon performance assessments included in the permitting of the facility, which requires no migration of hazardous or radioactive material for 10,000 years. Following completion of the project, there will be no access to the underground. The surface area will be unrestricted for recreational and agricultural uses with the exception of 124 acres which constitute the exclusive-use passive institutional control area.

E.2.2 Cost and Completion Dates

Carlsbad Area Office has divided its environmental management work into five discrete projects. A Project Baseline Summary (PBS) exists for each project and contains detailed programmatic information, including cost, schedule, scope, end state, and interim milestones. A summary of the cost and schedule for these projects is illustrated in Exhibit E-8. For additional information on these projects, refer to individual PBSs.

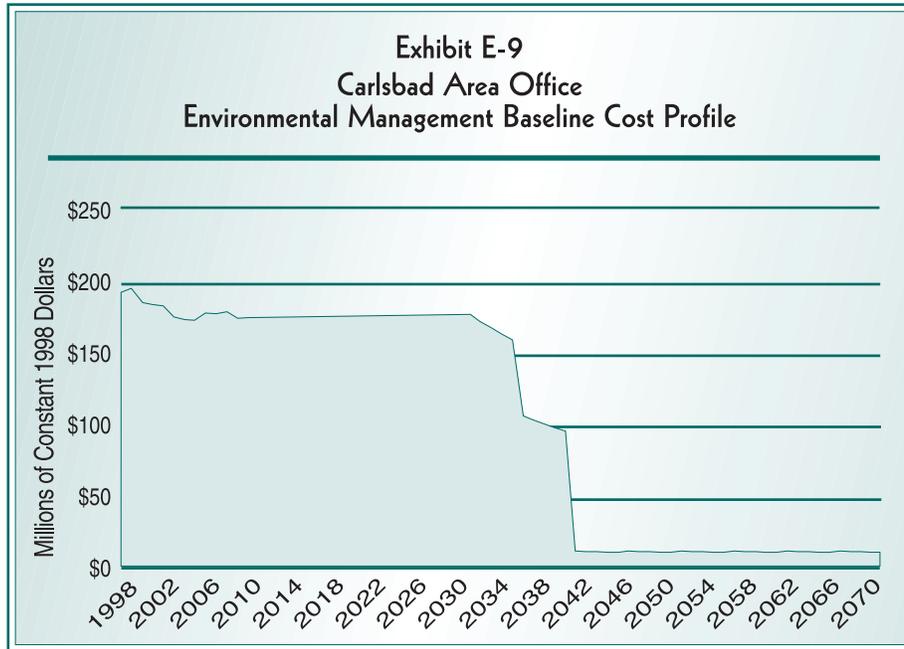
The estimated EM life-cycle cost of Carlsbad Area Office's TRU waste management and disposal activities is \$7.7 billion (constant 1998 dollars) through FY 2070. The overall planned completion date for disposal operations at WIPP is 2033, with dismantling and decommissioning taking another five years and active institutional controls continuing for 100 years thereafter.

**Exhibit E-8 Carlsbad Area Office
Cleanup Project Summary: Duration and Costs (All costs in thousands of 1998 dollars)**

Site Closure Project Activities	1997 - 2006	2007 - 2070	Total	97-99	00-02	03-05	06-08	09-11	12-14	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38
Waste Isolation Pilot Plant (WIPP)																	
WIPP Transuranic Waste Transportation Privatization	40,090	0	40,090														
WIPP Transportation	226,954	716,210	943,164														
WIPP Disposal Phase Certification and Experimental Program	309,522	769,627	1,079,148														
WIPP Base Operations	1,044,356	3,600,106	4,644,462														
WIPP Transuranic Waste Sites Integration and Preparation*	204,369	811,606	1,015,975														
Total	1,825,290	5,897,548	7,722,838														

*WIPP Land Withdrawal Act requires an Active Institutional Control period of 100 years after the WIPP site is dismantled and decommissioned. These activities are reflected in the "WIPP TRU Waste Sites Integration and Preparation" project. The "2007 to 2070" column and the "Total" column reflect costs through FY 2070.

The projected cost profile for environmental management associated with the Carlsbad Office is developed by combining the cost estimates in each of the PBSs. Exhibit E-9 displays the resultant baseline cost profile.



E.2.3 Work Scope Summary

The EM mission at Carlsbad consists of the following work scope.

- The operation of the TRU waste disposal facility which includes all activities required to maintain waste receipt and disposal operations including mining, waste handling and facility operations. Also included in this project are activities required to maintain and operate WIPP that are not directly related to waste disposal.
- The five year recertification cycle of the scientific performance of the facility by the EPA which includes all of the Managing and Operating (M&O), Scientific Advisor and supporting laboratories' experimental, compliance, and performance assessment work in support of certification and operational performance improvement for the WIPP site and the national TRU system. The scope also includes the establishment of a focused international nuclear waste disposal research development program.
- The TRU waste transportation system development and operations This scope includes all site activities required to meet the National TRU Waste Management Plan (NTWMP), Rev. 1, associated with the maintenance and operations of a transportation system. These activities include: emergency

response training; establishing and opening transportation corridors; Ch-TRU and RH-TRU waste packaging initiatives; carrier services; and stakeholder interfaces related to transportation.

The primary locations where TRU waste is currently stored are: Idaho National Engineering and Environmental Laboratory (INEEL), Los Alamos National Laboratory (LANL), Rocky Flats Environmental Technology Site (RFETS), Oak Ridge National Laboratory (ORNL), Savannah River Site (SRS), Hanford Reservation (Hanford), Nevada Test Site (NTS), Lawrence Livermore National Laboratory (LLNL), Argonne National Laboratory - East (ANL-E), and the Miamisburg Environmental Management Project (Mound). Other sites have small quantities of TRU waste that will be disposed of at WIPP. The TRU waste sites scheduled to initially ship CH-TRU waste to WIPP in FY 1998, are INEEL, LANL, and RFETS. Using the shipment schedules in the NTWMP, Hanford, ANL-E, Mound, SRS, and selected small quantity sites will begin shipping waste to WIPP in FY 1999, while LLNL and NTS will begin shipments in FY 2000. By FY 2000, the WIPP facility will be at a full throughput rate of 17 CH shipments per week. In FY 2003, CAO will begin receiving shipments of RH-TRU waste from ORNL and LANL at a rate of two shipments per week and work up to 10 shipments per week by FY 2004.

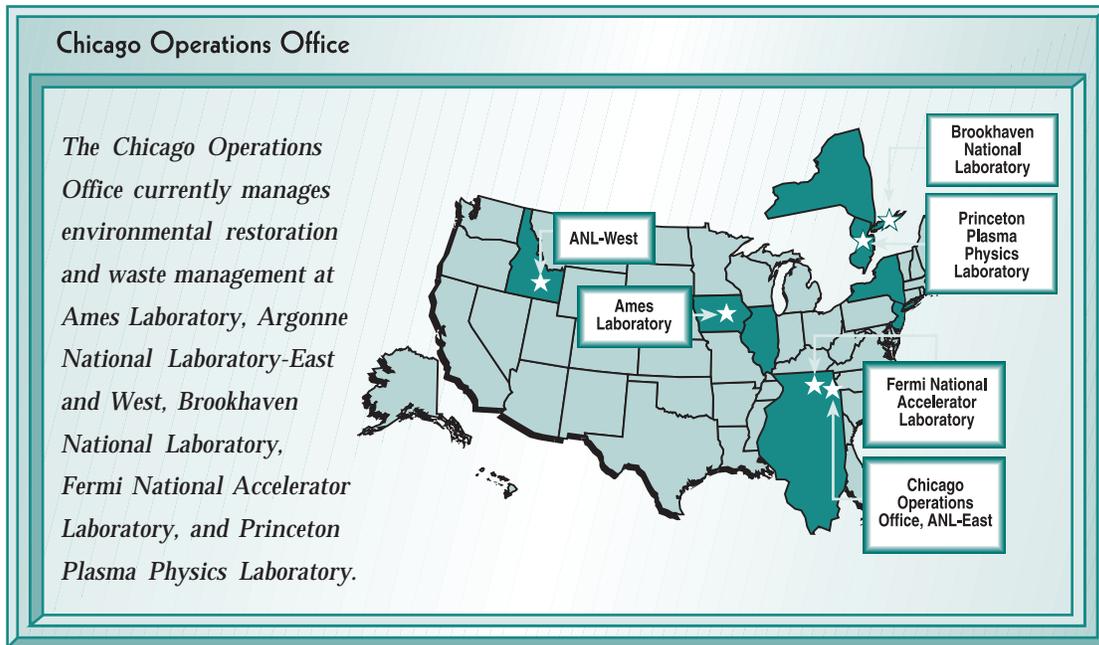
The process of opening transportation corridors includes cooperative agreements with all Native American tribes along each corridor, state emergency response training, and agreements with the Western Governor's Association and the Southern States Energy Board. CAO also coordinates transportation schedules and plans through the National Governor's Association.

CAO must open and maintain transportation corridors across the United States between each TRU waste site and WIPP. Currently, one corridor from INEEL, RFETS, and LANL is open. Activities to open other corridors require approximately two years prior to shipment campaigns beginning at the sites. The phasing of corridors corresponds with site shipping schedules and eliminates the need for corridor maintenance thus reducing TRU waste complex costs.

- The management activities necessary to direct and integrate the Department's National TRU waste sites activities from generation to disposal including all quality assurances oversight activities This scope includes ongoing TRU integration activities and programs which are directed by the CAO civilian work force. The CAO is the lead office for the management, planning, and integration of the integration of the TRU waste program .

E.3 Chicago Operations Office Summary

The Chicago Operations Office, located at the Argonne National Laboratory site in Illinois, is responsible for the safe and efficient cleanup of national laboratories and other sites under its management. Laboratories managed by the Chicago Operations Office have primary missions relating to energy, nuclear, basic fusion, and high-energy physics research.



Ames Laboratory was established in the 1940s to develop efficient uranium production processes for the Manhattan Project. The Laboratory's programs now emphasize research in the preparation, characterization, and evaluation of properties of metals and their alloys, especially rare earth metals.

Argonne National Laboratory - East (ANL-E) has been involved in research and development activities in support of the Department of Energy (DOE) and its predecessor agencies since 1943. Currently, it serves as a multi-disciplinary research and development laboratory that conducts basic and applied research to support the development of energy-related technologies.

Argonne National Laboratory - West's (ANL-W) primary mission was to support liquid metal reactor research and development for the Integral Fast Reactor Program until the program was terminated. Activities at the laboratory now include technology development for spent nuclear fuel and waste treatment, reactor and fuel cycle safety, and facility decommissioning.

Brookhaven National Laboratory has been involved in research and development activities in support of DOE and its predecessor agencies since 1947.

Its current mission is to conduct fundamental research, including conception, design, construction, and operation of large, complex research facilities to carry out both basic and applied research in high energy and nuclear physics.

Fermi National Accelerator Laboratory began its mission as a single-program research and development facility for the Atomic Energy Commission in 1972, when the first accelerator at the laboratory began operations. The laboratory’s current mission is to conduct research in high-energy physics under the direction of DOE’s Office of Energy Research.

Princeton Plasma Physics Laboratory (PPPL) has historically provided research and development for DOE’s fusion energy programs. Currently, activities at the site are devoted to the research and development of plasma fusion energy.

E.3.1 End State

The end state for Environmental Management (EM) program activities at all Chicago sites is completion of all environmental restoration activities by 2006 or sooner and transfer of all waste management activities to the Office of Energy Research, which has landlord responsibilities at the Chicago sites, by FY 2000. All landlord site stewardship and future land use issues will be managed by the Office of Energy Research, with the exception of Argonne National Laboratory-West which will be managed by the Office of Nuclear Energy. Exhibit E-10 provides a summary of anticipated end states for the sites managed by the Chicago Operations Office. In addition to the sites discussed in Exhibit E-10, the Chicago Operations Office supported surveillance and monitoring activities at Site A/Plot M, the Hallam Nuclear Power Facility, and the Piqua Nuclear Power Facility. Those activities will be transferred to the Grand

Exhibit E-10
Summary of Chicago Operations Office End States

Site Name	End State Description
Ames Laboratory	Environmental Restoration will complete its mission in FY 1998 and the Waste Management program is planned to be transferred to Energy Research in 2000. The wastes from the former Chemical Waste Disposal Site, which accepted radiological and chemical wastes, were removed in FY 1995. All of Ames’s waste is treated and/or disposed of off site.
Argonne National Laboratory - East	ANL-E will have an ongoing mission, with Energy Research acting as the landlord. The Waste Management Program is planned to be transferred to Energy Research in FY 2000. Corrective action for some release sites will require on-site containment of residual contamination. ANL-E hopes to bring the surplus reactor and nuclear support facilities to meet Nuclear Regulatory Commission unrestricted use standards and remove all postings and warnings by 2002. The majority of work will be complete in 2000.

Exhibit E-10 (Continued)

Site Name	End State Description
Argonne National Laboratory - West	ANL-W has an ongoing mission, and the land is expected to be used for industrial/commercial operations. The Waste Management program was transferred to Nuclear Energy in early FY 1998. Remediation of eight release sites and one facility is in progress. The Central Liquid Processing Area will be decontaminated and decommissioned in FY 1998. Groundwater remediation will be ongoing. The site will become the responsibility of Nuclear Energy in FY 2000.
Brookhaven National Laboratory	Energy Research is the landlord for Brookhaven's ongoing research mission. The Waste Management Program is planned to be transferred to Energy Research in FY 2000. By 2006, soil remediation will be complete, the Boneyard wastes will be disposed of off site, and long-term monitoring will be in place. The groundwater remediation system will be operational. Decontamination and decommissioning of the graphite reactor will be complete. The reactor will be safely and permanently closed, but the final end state for the reactor is not yet defined. Three former on-site landfills have been capped, and one is currently being reused for recreational purposes. Any wastes generated as part of an ongoing mission will be disposed of off site.
Fermi National Accelerator Laboratory	As of the end of FY 1997, EM has no further obligations to Fermi. Funding for managing waste activities at Fermi was transferred to Energy Research in the beginning of FY 1998. All waste is sent off site for appropriate treatment and disposal, as required. As long as Fermi Laboratory is in operation, waste management will be a necessary program function.
Princeton Plasma Physics Laboratory	PPPL will continue to conduct research, and generate of hazardous waste. The Waste Management program is planned to be transferred to Energy Research in FY 2000. Soil and groundwater are the media of concern. Contaminated soil and sediment was excavated, treated, and disposed of off site. No active groundwater remediation is currently required; natural attenuation will augment the on-site dewatering pumps. Energy Research will be the site steward starting in FY 2000.
Site A/Plot M	Site A was returned to the Forest Preserve District of Cook County, IL in FY 1997 for unimproved recreational use by the public. Plot M, which was capped in 1973, was returned to the Forest Preserve in 1956 with ongoing surveillance and monitoring (S&M) performed by DOE. S&M activities are being transferred to the DOE Grand Junction Office by FY 1998.