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**CAO-1 WIPP BASE OPERATIONS**

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# A.1. - Project Identification/Header Information (Section A.0. in 2/28/97 PBS)

| | |
|---|---|
| **A.1.1. Project Title:** | **WIPP Base Operations** |
| **A.1.2. Unique Site-Designated Project ID:** | **CAO-1** |
| **A.1.3. Site/Group of Sites :** | **Waste Isolation Pilot Plant** |
| **A.1.4. Operations/Field Office :** | **Carlsbad Area Office** |
| **A.1.5. DOE Project Manager:** | **Michael H. MeFadden** |
| **A.1.6. DOE Project Manager Phone Number:** | **505-234-7300** |
| **A.1.7. DOE Project Manager FAX Number:** | **505-234-7027** |
| **A.1.8. DOE Project Manager e-mail Address (Internet Format):** | **mcfaddenm@wipp.carlsbad.nm.us** |
| **A.1.9. Contractor Project Manager:** | Various |
| **A.1.10. Contractor Project Manager Phone Number:** | |
| **A.1.11. Contractor Project Manager FAX Number:** | |
| **A.1.12. Contractor Project Manager e-mail Address (Internet Format):** | |
| **A.1.13. Unique Project ID :** | **CBWP0008** |
| **A.1.14. Program Element :** | **WM** |
| **A.1.15. Is this a Pure, Operational, or Privatization Project?** | **O: Operational** |
| **A.1.16. Is this a High Visibility Project? (Y/N)** | **Y** |

| **A.1.17. DOE Project Manager's Signature/Date** | **A.1.18. Contractor Project Manager's Signature/Date** |
|---|---|
| | |

## A.2. Technical and Scope Narratives (Section A.1. in 2/28/97 PBS)

### A.2.1. Purpose of Project:

Predecessor: None. This project is an integral part of the WIPP program. It is not possible to separate this project from the overall objectives of the WIPP program.

The purpose of the Waste Isolation Pilot Plant (WIPP) is to permanently dispose of defense transuranic (TRU) waste, in a safe and environmentally sound manner. Transuranic waste has been generated and placed in storage since 1943 and is a result of the nation's nuclear defense, research, and production activities. The currently stored and projected to be generated defense TRU waste at DOE TRU Waste Sites around the country will be disposed at WIPP.

### A.2.2. Definition of Scope:

The base operations project 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, such as maintaining compliance with federal and state laws, regulations and standards not related to radioactive or hazardous waste; providing a safety and health program that includes radiation safety, industrial safety and emergency management; quality assurance; performing maintenance on 22 systems and associated subsystems and equipment; operating and monitoring facility systems on a 24 hour per day, 7 days a week; and maintaining the underground facilities. Currently the underground facilities consist of 2,400,000 square feet of horizontal openings and 4 vertical shafts, each over 2,150 feet deep. In addition, this project includes the administrative services and program management activities required to achieve day-to-day and long term objectives of the site.

The baselined funding profile in this PBS will provide for the emplacement of TRU waste from most TRU waste sites by the end of FY 2006 and for WIPP to reach its planned TRU waste capacity by FY 2033.

### A.2.3. Technical Approach:

The WIPP facility resides inside a 16 square mile area placed under the jurisdiction of the DOE by the Waste Isolation Pilot Plant Land Withdrawal Act of 1992 (LWA) as amended. The WIPP facility is designed to accomplish three goals: 1) receive, handle, and dispose of TRU and TRU-mixed waste; 2) protect the health and safety of workers, the public and the environment; and 3) comply with applicable radiation protection standards, environmental regulations, and requirements of federal, state, and local agencies. The amount of waste to be received at WIPP is governed by the LWA as amended which set the total volume for Contact Handled (CH) and Remote Handled (RH) waste at a maximum of 175,600 cubic meters (6.2 million cubic feet), and an activity level associated with RH waste limited to 5.1 million curies. The surface facilities at the WIPP accommodate the personnel, equipment, and support services required for the receipt, preparation and transfer of the waste from the surface to the underground. Four vertical shafts connect the surface facilities to the underground. The underground waste disposal area is located

in a geologic repository 2,150 feet below the surface in a rock salt formation. The waste disposal area will consists of 8 panels, each having seven rooms. A 35 year operating period is estimated to mine and fill all 8 panels and the 4 access drifts. The 35 year period will begin the day the first drum of waste is emplaced. At the end of the 35 year operational period, it is estimated that 5 years will be required for closure of the repository to complete dismantlement and decommissioning activities. After closure, active institutional controls for the prevention of human intrusion will be employed for a period of 100 years. The National Research Council`s report on the WIPP, dated October 1996, validated the project as a viable solution for the permanent, safe disposal of defense generated radioactive TRU waste.

## A.2.4. Project Status in FY 2006:

The WIPP will have received 43,580 cubic meters of waste. This equates to approximately 7,469 shipments to the WIPP through FY06. Through FY06, 25% of the WIPP's CH-TRU and 27% of the RH TRU waste handling capacity is used, and 93% of the affected population will no longer be exposed to the potential hazards.

| | CH Volumes | RH Volumes |
|---|---|---|
| ANL-E | 118 | 0 |
| Hanford | 6,353 | 17 |
| INEEL | 11,795 | 0 |
| LANL | 10,263 | 135 |
| LLNL | 483 | 0 |
| Mound | 200 | 0 |
| NTS | 666 | 0 |
| ORNL | 507 | 1,164 |
| RFETS | 9,247 | 0 |
| SRS | 2,411 | 0 |
| SQS | 111 | 110 |
| TOTAL | 42,153 | 1,427 |

## A.2.5. Post 2006 Project Scope:

Continued disposal of the remaining TRU waste inventory until the WIPP waste volume capacity reaches the statutory limits in FY2033, after which five years are planned to seal the repository and dismantle and decommission the surface facilities. Active institutional controls will then be activated and maintained for 100 years. It is expected CAO will receive 132,020 cubic meters of TRU waste after FY 2006 from the following TRU waste sites:

| | CH Volumes | RH Volumes |
|---|---|---|
| ANL-E | 79 | 0 |
| Hanford | 13,732 | 1,781 |
| INEEL | 42,942 | 370 |
| LANL | 6,597 | 94 |
| LLNL | 630 | 0 |
| Mound | 0 | 0 |
| NTS | 0 | 0 |
| ORNL | 44 | 838 |
| RFETS | 0 | 0 |
| SRS | 24,533 | 31 |
| SQS | 102 | 650 |

| | | |
|---|---|---|
| D&D | 37,709 | 1,839 |
| TOTAL | 126,367 | 5,653 |

## A.2.6. Project End State:

TRU waste management activities for both CH and RH waste are projected to be completed by FY 2038 after completing the Disposal Phase in FY 2033 and five years for decommissioning of the surface facilities and permanently closing the underground. In accordance with the WIPP Land Withdrawal Amendment Act of 1996, DOE will have disposed of 175,600 cubic meters of TRU waste in the WIPP facility. Starting in FY 2039, a reduced Federal staff and technical contractor support will maintain the active institutional controls associates with the land and records of the WIPP. Monuments and markers will be built at the site to warn people of the presence of the repository. Active institutional controls over the site will be maintained for 100 years. Low risk has been assigned based upon performance assessments included in the licensing 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.

**(Safety and Health Narrative, Section A.1.7. in the 2/28/97 PBS, has been replaced and is no longer maintained. Safety and Health Narratives are now found in Section D.1.)**

## A.2.7. General Narrative:

**(Section A.1.9. in the 2/28/97 PBS has been moved to Section A.2.14.)**
**(Section A.1.10. in the 2/28/97 PBS has been moved to Section A.2.15.)**
**(Section A.1.11. in the 2/28/97 has been moved to Section A.2.16.)**

## A.2.8. Cost Baseline Narrative (A.2.5. in 2/28/97 PBS)

Since 1994, the CAO has institutionalized a formal program planning and budget execution process. The confidence level of cost estimates for the next three years is very high (+/- 5%). Out year estimates through FY 2008 have been developed with a confidence level of +/- 10 to 20%. Estimates from FY 2009 through completion are within +/- 30%. There are no contingency funds included in the CAO estimates.

Current CAO assumptions support operations of the WIPP facility, including its infrastructure, as an operational nuclear facility capable of receiving TRU waste at an initial disposal rate of 5 shipments per week and ramping to 17 shipments per week. The statutory requirement to pay impact assistance to the State of New Mexico is funded. The CAO baseline provides adequate funding to meet the National TRU Waste Management Plan, Rev. 1. Escalation has been applied to the activities in accordance with the DOE Environmental Management guidelines.

## A.2.9. Discuss How NEPA will be or has been Addressed

The WIPP Supplemental Environmental Impact Statement (SEIS) was approved in September 1997 and the Record of Decision was issued in January 1998. A supplemental analysis may be required as WIPP prepares to receive Remote-handled TRU waste. The SEIS examined various alternatives for the disposal of TRU waste at WIPP, as well as alternatives for continued storage

at TRU waste sites rather than disposal at WIPP. The process began with public meetings to obtain comment on the scope of the analysis. On November 19, 1996, DOE issued a draft SEIS and began the public hearings process to get comments on the SEIS. The final SEIS addresses all public comments and contains a revised analysis of the environmental impacts for the alternatives considered. DOE weighed the environmental impacts and considered all public comments prior to reaching a Record of Decision for WIPP. The SEIS is intended to provide information required for making a sound and justifiable decision to dispose or not dispose of TRU waste at WIPP. The Waste Management Programmatic Environmental Impact Statement, which followed the same process as the WIPP SEIS, is intended to provide the same type of information needed for deciding the proper locations to treat and store TRU waste prior to shipping to WIPP for permanent disposal.

### A.2.10. 1997 Actual Accomplishments

October - DOE submitted the Compliance Certification Application to EPA.
September - Los Alamos National Laboratory site certification.
September - WIPP SEIS approved by the Department

### A.2.11. 1998 Planned Accomplishments

The following accomplishments are contingent upon completion of all FY97 activities and all activities included in the remainder of the CAO projects. It is expected:

1) The Secretary of Energy will issue a Record of Decision for the WIPP SEIS in January 1998;
2) WIPP will be declared operationally ready to receive waste in March;
3) The EPA will certify WIPP by approving the Compliance Certification Application in April;
4) The Secretary of Energy will make the decision to operate WIPP as a disposal facility in April;
5) DOE will notify the States and Native American Tribes of the intent to transport TRU waste in April;
6) Non-mixed, Contact-Handled TRU waste disposal will begin at WIPP with a rate of 5 shipments per week in May.

CAO will receive approximately 67 shipments or approximately 592 cubic meters of non-mixed TRU waste from the Idaho National Engineering and Environmental Laboratory, Rocky Flats Environmental Technology Site, and Los Alamos National Laboratory. This includes:

| | CH Volumes |
|---|---|
| INEEL | 130 |
| RFETS | 120 |
| LANL | 342 |
| TOTAL | 592 |

## A.2.12. 1999 Planned Accomplishments

The following accomplishments are contingent upon completion of all FY98 activities and all activities included in the remainder of the CAO projects. It is expected:

1) DOE will receive a RCRA Part B permit from the State of New Mexico sometime in FY 1999;
2) WIPP will receive approximately 500 shipments or approximately 3,786 cubic meters of Contact-Handled TRU waste. This includes:

| | CH Volumes |
|---|---|
| ANL-E | 79 |
| Hanford | 293 |
| INEEL | 604 |
| LANL | 799 |
| Mound | 87 |
| RFETS | 1,819 |
| SRS | 96 |
| SQS | 9 |
| TOTAL | 3,786 |

## A.2.13. 2000 Planned Accomplishments

The following accomplishments are contingent upon completion of all FY99 activities and all activities included in the remainder of the CAO projects. It is expected:

1) WIPP will receive approximately 751 shipments or approximately 5,474 cubic meters of Contact-Handled TRU waste. This includes:

| | CH Volumes |
|---|---|
| ANL-E | 9 |
| Hanford | 954 |
| INEEL | 748 |
| LANL | 1,385 |
| LLNL | 203 |
| Mound | 113 |
| NTS | 277 |
| ORNL | 0 |
| RFETS | 1,594 |
| SRS | 157 |
| SQS | 34 |
| TOTAL | 5,474 |

## A.2.14. Baseline Cost Summary

*(Section A.2.1. in the 2/28/97 PBS)*

| 1997-2006: | 1,152,047 | Post 2006: | 7,204,181 | Total Project Cost: | 8,356,228 |
|---|---|---|---|---|---|

## A.2.15. Baseline Costs

**(Section A.2.2. in the 2/28/97 PBS)**

| All dollars in thousands. | Date Submitted | 1997-2006 Total | 2007-Completion Total | Grand Total | 1997 | | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Planned | Actual | | | |
| **Original** | 2/28/97 | **1,157,679** | **7,204,180** | **8,361,859** | 98,921 | Empty | 101,574 | 105,952 | 111,737 |
| **Current Cost Baseline** | | **1,152,047** | **7,204,181** | **8,356,228** | 100,637 | 100,637 | 98,700 | 105,143 | 120,268 |
| **Escalation Rate** | | | | | | | 0.00% | 2.70% | 2.70% |
| **Cost Baseline in Constant FY 1998 Dollars** | | | | | **100,637** | **100,637** | **98,700** | **102,379** | **114,027** |

| All dollars in thousands. | Date Submitted | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|---|
| **Original** | 2/28/97 | 112,845 | 115,314 | 121,739 | 125,275 | 128,805 | 135,517 | 143,165 | 143,165 |
| **Current Cost Baseline** | | 119,437 | 122,764 | 126,933 | 130,665 | 133,966 | 139,454 | 136,896 | 141,122 |
| **Escalation Rate** | | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% |
| **Cost Baseline in Constant FY 1998 Dollars** | | **110,262** | **110,354** | **111,102** | **111,362** | **111,174** | **112,685** | **107,710** | **108,116** |

| All dollars in thousands. | Date Submitted | 2009 | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 |
|---|---|---|---|---|---|---|---|---|---|
| **Original** | 2/28/97 | 143,165 | 143,165 | 814,698 | 939,882 | 1,084,302 | 1,250,913 | 1,468,060 | 1,073,667 |
| **Current Cost Baseline** | | 145,215 | 149,426 | 814,698 | 939,882 | 1,084,302 | 1,250,913 | 1,468,060 | 1,073,667 |
| **Escalation Rate** | | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% | 2.70% |
| **Cost Baseline in Constant FY 1998 Dollars** | | **108,327** | **108,538** | **546,699** | **552,043** | **557,439** | **562,888** | **578,211** | **370,135** |

**(Section A.2.3. in the 2/28/97 PBS has been removed.)**
**(Section A.2.4. in the 2/28/97 PBS has been removed.)**
**(Section A.2.5. in the 2/28/97 PBS has been moved to Section A.2.9.)**
**(Section A.2.6. in the 2/28/97 PBS has been moved to Section A.2.13.)**

## A.2.16. Non-EM Costs Included in the Cost Baseline (Section A.2.6. in the 2/28/97 PBS) (All dollars in thousands)

| | Organization | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % EM | EM | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| EM Dollars (Calculated) | | 100,637 | 98,684 | 101,494 | 111,737 | 112,845 | 115,314 | 121,739 | 125,275 | 128,805 | 135,517 |

| | Organization | 2007 | 2008 | 2009 | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % EM | EM | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| EM Dollars (Calculated) | | 136,896 | 141,122 | 145,215 | 149,426 | 814,698 | 939,882 | 1,084,302 | 1,250,913 | 1,468,060 | 1,073,667 |

## A.2.17. Related Projects at the Same Site or Operations/Field Office (Section A.1.9. in the 2/28/97 PBS)

| Unique Site-Designated Project ID and Project Name | Relation to this Project |
|---|---|
| 009: CB, CAO-2 – WIPP Disposal Phase certification and Experimental Program | Regulatory activity and continuing experimental programs for continued WIPP compliance certainty |
| 010: CB, CAO-3 – WIPP Transportation | Safe transportation of TRU waste from TRU waste sites to WIPP |
| 011: CB, CAO-4 – WIPP TRU Waste Sites Integration and Preparation | Continued TRU waste sites communication and preparation for waste acceptance at the WIPP |
| 013: CB, CAO-6 – WIPP TRU Waste Transportation Privatization | Privatization Projects |

## A.2.18. Operations/Field Offices with Activities Related to this Project (Section A.1.10. in the 2/28/97 PBS)

| Operations/ Field Office Name | Unique Site-Designated Project ID | Relation to this Project |
|---|---|---|
| All | All | All TRU programs are dependent upon disposal availability at WIPP |

## A.2.19. Drivers (Section A.1.11. in the 2/28/97 PBS)

| | CERCLA | RCRA | DNFSB | AEA | UMTRCA | State | DOE Orders | Other |
|---|---|---|---|---|---|---|---|---|
| Select all applicable Drivers | X | X | X | X | | X | X | X |

## A.2.20. Is this project A-106 (FEDPLAN) compliant? No

**(Section D.2.1. in the FY 1999 Budget Update)**

## A.3. Milestones

| Milestone/Activity | Field Milestone Code | Planned Date Month/Year | Forecast Date Month/Year | Actual Date Month/Year | Status Indicator | EA (Y/N) | DNFSB (Y/N) | EM-1 or S-1 (Y/N) | Intersite (Y/N) | HQ Change Control (Y/N) | Management Commitments (Y/N) | Key Decision (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Start | | | | | | | | | | | | |
| Project Mission Complete | | Sep-39 | | | | | | | | | | |
| LT S&M Completion (If applicable) | | | | | | | | | | | | |
| Completion of Pre-Disposal Phase | CAO-001-001 | May-98 | | | | N | N | Y | Y | N | N | N |
| Begin CH Disposal Operations | CAO-001-002 | May-98 | | | | N | N | Y | Y | Y | Y | N |
| Begin RH Disposal Operations | CAO-001-003 | Jan-03 | | | | N | N | Y | Y | N | Y | N |
| Complete Waste Emplacement in Panel 1 | CAO-001-004 | Aug-01 | | | | N | N | Y | Y | N | N | N |
| Complete Waste Emplacement in Panel 2 | CAO-001-005 | Apr-04 | | | | N | N | Y | Y | N | N | N |
| Complete Waste Emplacement in Panel 3 | CAO-001-006 | Nov-06 | | | | N | N | Y | Y | N | N | N |
| Complete Waste Emplacement in Panel 4 | CAO-001-007 | Jun-09 | | | | N | N | Y | Y | N | N | N |
| Complete Waste Emplacement in Panel 5 | CAO-001-008 | Sep-11 | | | | N | N | Y | Y | N | N | N |

## A.4. Performance Measure Metrics

**(Section A.4.a. in the 2/28/97 PBS; Attachment 2 in the 1997 Mid-year Performance Measures Update; Section in the FY 1999 Budget Update)**

## A.5. Release Sites and Facilities

Not applicable

## A.6. Validation (Section C.2. in the 2/28/97 PBS)

### A.6.1. Project Validated? (Y/ N) Y

### A.6.2. Date Validated: 9/23/96

### A.6.3. Validation Method:

Public Law 104-201 Compliance Certification Application to EPA, SEIS-II, and the National Research Council Report, "WIPP, a Potential Solution for the Disposal of Transuranic Waste" dated November 1996.

### A.6.4. Technical Approach Reference Documents:

WIPP SEIS-II
Compliance Certification Application
RCRA Part B Permit Application

### A.6.5. Current Status of your Project Baseline:

Life Cycle cost and technical scope has had continuous reviews since FY 1988 by the GAO, IG, NAS, EEG, and other stakeholders.

### A.6.6. Is this PBS Consistent with your Site Baseline? (Y/ N) Y

### A.6.7. If A.6.6. was answered No, why not?

### A.6.8. Future Validation Plans and Schedule

None

### A.6.9. Site Baseline Consistency

How consistent is the Site Baseline(s) with this PBS? Check the appropriate box.

| | |
|---|---|
| X | 100% - PBS Fully Supported by Site Baseline(s) |
| | 75% - PBS Well Supported by Site Baseline(s) |
| | 50% - PBS Mostly Supported by Site Baseline(s) |
| | 25% or less- PBS Not Well Supported by Site Baseline(s) |

### A.6.10. Project End State Definition

How certain is the Project End State for this PBS? Check the appropriate box.

| | |
|---|---|
| X | 100% - Agreement with Stakeholders |
| | 75% - Project End State is Well Defined |
| | 50% - Project End State is Mostly Defined |

25% or less- PBS Not Well Supported by Site Baseline(s)

## A.7. Project Assumptions (Section C.3. in the 2/28/97 PBS)

1) WIPP will open in 1998
2) Funding will be adequate to meet the National TRU Waste Management Plan, Rev. 1 (NTWMP) schedule.
3) WIPP will receive non mixed TRU waste until the RCRA permit is received.
4) WIPP will receive only defense generated TRU waste.
5) CAO will provide an integrated transportation system.
6) TRU waste sites will have adequate road ready waste to meet the objectives of the NTWMP.
7) Remote Handled TRU waste will be disposed at WIPP starting in FY2003
8) WIPP will be filled to capacity (175.6 thousand cubic meters) by FY2033.
9) All WIPP dismantlement and decommissioning will take 5 years (FY2034 - FY2038)
10) Active institutional controls will be implemented in FY2039 and last for 100 years.
11) EPA will certify every 5 years.

## B.1. Budget by Appropriations Account (in thousands)

| Appropriations Account | 1997 BA | 1998 BA | 1999 BA | 2000 BA |
|---|---|---|---|---|
| **Defense Environmental Management** | 100,637 | 98,684 | 101,494 | 111,737 |
| **Energy Supply, Research and Development** | | | | |
| **Uranium Enrichment Decontamination and Decommissioning Fund** | | | | |
| **Total** | **100,637** | **98,684** | **101,494** | **111,737** |

## C.1. Risk (Section E.1. in the FY 1999 Budget Update)

### C.1.1. Risk Data

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Public** | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D |
| **Worker** | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C |
| **Environment** | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C |

| | 2007 | 2008 | 2009 | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Public** | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D | 1D |
| **Worker** | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C | 2C |
| **Environment** | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C | 3C |

| | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---|---|---|---|---|---|---|
| **Public** | 3D | 3D | 3D | 3D | 3D | 3D |
| **Worker** | 4D | 4D | 4D | 4D | 4D | 4D |
| **Environment** | 3D | 3D | 3D | 3D | 3D | 3D |

| | |
|---|---|
| **C.1.2. Choose either the public, worker, or the environment as the End-State Risk driver: (P, W, or E):** | |
| **C.1.3. Choose either the public, worker, or the environment as the Interim Risk driver: (P, W, or E):** | |
| **C.1.4. If upon completion of this project, another project manages its hazards, indicate that project ID:** | |
| **C.1.5. Has the risk evaluation been internally peer reviewed by ES&H professionals? (Y/N)** | Y |
| **C.1.6. Has the risk evaluation been externally peer reviewed? (Y/N)** | Y |

**C.1.7. Have regulators, stakeholders, & Tribal Nations been involved in validating the project risk evaluations? (Y/N)** Y

## D.1. Direct Safety & Health and Risk Narratives

**(Indirect Safety & Health Narratives are located in the Site Summary Level)**
**(Section D.1.1. in the FY 1999 Budget Update has been replaced by narratives below and in the Site Summary Level and is no longer maintained.)**

### D.1.2. Direct S&H Narrative - Hazards:

The S&H hazards at the WIPP site include fire, industrial, radiological, and occupational. The WIPP Fire Protection Program supports DOE Order 440.1, Fire Protection, and includes maintaining an inspection, testing and maintenance program of the site fire systems, loss prevention, and review or modification of the new facilities or systems. The water supply system meets the minimum 2 hour stored water capacity for fire water. The Industrial Safety Program applies guidelines of the OSHA Safety and Health Guidelines and implementing OSHA and MSHA regulations.

The WIPP Site has implemented an Integrated Safety Management System (ISMS) to protect employees and manage environment, safety, and health obligations in a safe and effective manner. The ISMS establishes the necessary organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, and maintaining the WID Integrated Safety Management Policy, MP 1.28. The ISMS description was developed to present WID elements that make up the ISMS and to illustrate how these elements conform to the DOE's expectations of contractors as set forth in DOE P 450.4, Safety Management System Policy, the DOE Plan for the Development and Implementation of Integrated Safety Management (Implementionl Plan for Board Recommendation 95-2), and DOE Acquisition Regulation Clauses 970.5204-2 and 970-5204-78. The WIPP site was the first DOE site to be awarded Star status under the DOE Voluntary Protection Program. The DOE-VPP Star means that the contractor was recognized for outstanding achievements in incorporating safety and health programs into the management system. Several DOE programs at other sites have been revised to reflect the rigorous and detailed attention to workplace safety at the WIPP. Revised manuals include the Model Electrical Safety Program, the Hoisting and Rigging Manual and the Pressure Safety Manual.

The Industrial Hygiene program exists to anticipate, recognize, evaluate, and control industrial hygiene hazards in the workplace in compliance with the DOE Order 440.1. The program uses complete computerized system for the tracking of chemical use, quantity, and location. Types of chemicals that can be found at the WIPP include, but is not limited to diesel fuel. The Industrial Hygiene Status Report and Assessment Strategy continues to be an effective mechanism for determining sampling strategies during routine activities. Ergonomic concerns, especially in office areas and workplace design, represents an exposure that is being addressed through engineering, training, and implementation of the ergonomic plan. Radiological Engineering provides a safe working

environment for WID employees, employees of other companies and government agencies, and the public visiting or working at the WIPP. This is accomplished by controlling exposure to ionizing radiation and radiological contamination; applying the principles of As Low As Reasonably Achievable to all aspects of operations, and maintaining appropriate records of activities.

Radiological Engineering provides support to Operational Health Physics (OHP) with regard to regulatory compliance, procedure development, HP technician certification, and instrument research and development. Operational Health Physics program includes the implementation of the Defense-in-Depth radiation monitoring and contamination control programs at the WIPP. These activities are conducted in accordance with 10 CFR 835 and the DOE radiological control manual. OHP programs include calibration and operation of fixed and portable instruments; conducting routine and non-routine radiological surveys; operation of the airborne radioactivity detection systems; and maintenance of the HP Technical Certification Program. OHP support of Operations includes administration of Radiological work permits; surveys of TRUPACTS and waste packages; setup, posting, and control of radiological boundaries; personnel surveys; on-site radiological emergency response services; and waste handling procedure validation. Dosimetry and occupational dose recording and reporting are required by the DOE Radiological control Manual, DOE Orders and Code of Federal Regulation. The dosimetry program is also required to maintain accreditation by the DOE Laboratory Accreditation Program.

The Occupational Health Program provides medical services in compliance with DOE Orders and Code of Federal Regulation, and other regulatory drivers. Activities include employee wellness initiatives and counseling, employee health examinations, which are performed prior to placement and qualification, periodic return to work, fitness for duty, and termination. All of the examinations are maintained in accordance with the Americas with Disabilities Act applicable regulations and under applicable circumstances. Diagnosis and treatment of occupational illnesses is performed and maintained under the direction of the Occupational Medical Director. Medical equipment is upgraded as necessary to maintain appropriate levels of service.

### D.1.3. Direct S&H Narrative - Controls:

The WIPP site has developed and implemented the DOE Standards/Requirements Identification Document (S/RID) Program which was approved by DOE February 6, 1997. The S/RID provides the ES&H requirements to safely operate the facility. The S/RID database contains 2,800 requirements in various areas, including: Mine Safety and Health Administration (MSHA) requirements, WIPP Safety Analysis Report (SAR) requirements, WIPP Environmental Impact Statement (EIS) requirements, and WIPP Resource Conservation and Recovery Act (RCRA) requirements. Additionally, the contractor has a number of programmatic and administrative documents that define how operational, safety, radiological, and environmetnal controls are implemented at WIPP. A listing is provided below:

069 - Waste Acceptance Criteria for the WIPP
95-2065 - WIPP Safety Analysis Report
WP 02.EC.O - Environmental Compliance Manual
WP 02-5 - Nonradioactive Hazardous Material Environmental Compliance Manual
WP 04-AD - Operations Administration Manual for the WIPP
WP 05-WA - WIPP Waste Acceptance Procedures Manual
WP 09-9 - WID Operational Configuration Management Plan
WP 10-2 - Maintenance Operatins Instruction Manual
WP 12-FP.01 - Fire Protection Program
WP 12-IH.02 - WIPP Industrial Hygiene Program
WP 12-IS.01 - Industrial Safety Program
WP 12-3 - Dosimetry Program Manual
WP 12-5 - WIPP Radiation Safety Manual
WP 15-PS3002 - Review, Approval and Cancellation of WID Controlled Documents

### D.1.4. Direct S&H Narrative - Work Performance:

The WIPP site will begin facility operations in May 1998. Prior to startup, the WIPP will undergo several reviews which will demonstrate the facility is safe to begin operations for TRU waste disposal. DOE Order 425.1 is a driver of these reviews. The activities scheduled for the WIPP include a Management Assessment, an Integrated Facility Checkout, a Westinghouse Corporate Operational Readiness Review, and a DOE Operational Readiness Review. The management assessment is the first step in the process that will determine the readiness of the WIPP to receive and emplace CH transuranic (TRU) and TRU mixed waste for permanent, deep-geologic disposal. The scope will include as assessment of minimum core requirements applied to key functional areas, systems and organizations necessary to start waste disposal operations.

The Integrated Facility Checkout (IFC) began on April 1, 1997. The purpose of the IFC was to place WIPP in an "operational mode", performing all activities associated with waste receipt and emplacement. During the first phase of the IFC, simulated operations of TRU waste receipt were conducted. These operational activities indluded preventive and corrective maintenance items in radiological areas, unloading of TRUPACT-II`s, and simulated waste emplacement in the underground.

The readiness reviews by Westinghouse and DOE are part of the ORR process which objectively determines and documents the ability of WIPP to safely handle and emplace contact handled waste for permanent disposal in the underground repository. The readiness process implements the requirements of DOE Order 425.1, Startup and Restart of Nuclear Facilities. Successful completion of the CH Waste Disposal ORR process will be one of the primary factors involved in the Secretary of Energy`s final decision to operate WIPP as a disposal facility. The average cost per Engineer (burdened rate) is $81K/year and per Technician is $45K/year.

### D.1.5. Direct S&H Narrative - Feedback and Continuous Improvement:

There are several mechanisms in place at the WIPP that provide opportunities for improvement and provide feedback. The first is the Westinghouse Waste Isolation Division Self Assessment program which provides feedback on Safety and Health processes and programs. The assessment begins by developing checklists of the program requirements. After the checklists are completed the team assesses compliance with the Safety and Health requirements. Observations and findings are generated for non-compliances which are tracked to completion. Another mechanism for improvement and feedback is the Safety Concern Hotline. This program is implemented by use of a confidential telephone line which is available to employees 24 hours a day. The calls are confidential and may be annonymous if the caller is not comfortable with leaving their name. The concerns are forwarded to the General Manager and are addressed within 72 hours. The Process Improvement Program is designed to encourage employees to submit ideas for improving Health and Safety processes. Employee earn incentives when the Safety and Health improvement idea is submitted, approved and implemented.

### D.1.6. Risk Evaluation Narrative (Indicate incremental risk reduction metric and references to supporting risk and review information):

The WIPP will meet or exceed several standard to safeguards the public health and safety. In 1994, the EPA codified 40 CFR 191, the Environment Standards for Management and Disposal of TRU Waste. In 1996, the EPA codified 40 CFR 194, the criteria to certify WIPP`s compliance with these standards. In 1993, the President issued Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, to ensure that Federal Agencies manage their facilities to reduce the releases of toxic chemicals and pollutants to the environment. WIPP submitted a draft No-Migration Variance Petition to the EPA in May of 1995. In the draft No-Migration Variance Petition, the CAO submitted a petition demonstrating that there will be no migration of hazardous constituents from the disposal unit boundary for as long as the wastes remain hazardous. A Hazard and Operability Study team concluded proper safeguards are in place at the WIPP.

As required by the DOE National Environmental Policy Act Implementing Procedures, 10 CFR 1021, the WIPP has prepared a Mitigation Action Plan (MAP) to eliminate or minimize adverse environmental impacts identified in DOEs Records of Decision for the WIPP. WIPP employs a number of provisions taken to mitigate potential environmental impacts including the protection of environmental resources, avoidance of unnecessary damage to vegetation, wildlife, and soil.

A fundamental component of the Management Plan configuration is to maximize the rate at which waste is retrieved from storage, processed, and shipped for disposal. This accelerated risk reduction is accomplished by focusing on easily processed waste types and on sites having relatively small inventories in storage. By the end of FY2006, only Hanford, the Idaho National Engineering and Environmental Laboratory, the Savannah

River Site, the Oak Ridge National Laboratory, and Battelle Columbus Laboratories (a small quantity site) will have TRU waste in storage. The populations within 50 miles of each of the TRU waste sites total approximately 53 million (1990 census). By removing TRU waste from most sites by the end of FY 2006, 93% of this population will no longer be subject to the risk of continued exposures or to the potential risk from exposures due to unanticipated releases associated with TRU waste in storage.

## D.2. Safety and Health Direct Data

**(Section D.2.1. in the FY 1999 Budget Update has been moved to Section A.2.17.)**

### D.2.2. Safety and Health Cost Reporting - Direct Costs (All dollars in thousands)

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| A. Emergency Preparedness | 1,069 | 1,020 | 1,100 | 1,132 |
| B. Fire Protection | 315 | 466 | 480 | 494 |
| C. Industrial Hygiene | 361 | 361 | 371 | 382 |
| D. Industrial Safety | 1,356 | 1,433 | 1,453 | 1,495 |
| E. Occupational Medicine | 605 | 661 | 660 | 679 |
| F. Nuclear Safety | | | | |
| G. Radiation Protection | 4,185 | 5,786 | 7,428 | 7,643 |
| H. Transportation Safety | | | | |
| I. Management Oversight | 372 | 372 | 382 | 393 |
| **Total S&H Direct Costs** | **8,263** | **10,099** | **11,874** | **12,218** |
| **Total Baseline Costs (from A.2.15.)** | **100,637** | **98,684** | **101,494** | **111,737** |
| **% S&H Direct Costs (calculated)** | **8%** | **10%** | **12%** | **11%** |

**(Section D.2.3. in the FY 1999 Budget Update has been moved to the Site Summary Level)**
**(Section D.2.4. in the FY 1999 Budget Update has been removed)**

### D.2.5. Safety and Health FTE Reporting - Direct Contractor FTEs

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| A. Emergency Preparedness | 14.00 | 9.30 | 9.30 | 9.30 |
| B. Fire Protection | 2.00 | 0.00 | 2.00 | 2.00 |
| C. Industrial Hygiene | 3.00 | 3.00 | 3.00 | 3.00 |
| D. Industrial Safety | 9.00 | 9.00 | 9.00 | 9.00 |
| E. Occupational Medicine | 4.00 | 4.00 | 4.00 | 4.00 |
| F. Nuclear Safety | 0.00 | | | |
| G. Radiation Protection | 32.00 | 42.00 | 44.00 | 44.00 |
| H. Transportation Safety | | | | |
| I. Management Oversight | 4.00 | 4.00 | 4.00 | 4.00 |
| **Total Direct Contractor FTEs** | **68.00** | **71.30** | **75.30** | **75.30** |

**(Section D.2.6. in the FY 1999 Budget Update has been moved to the Site Summary Level)**

# E. Enhanced Performance Measures

## E.1. Project Estimates (All dollars in thousands)

**E.1.1. Current Estimated Lifecycle Cost of Project:** **8,356,228**

**E.1.2. Previously Estimated Lifecycle Cost of Project:** **8,361,859**

**E.1.3. Projected Cost for FY 97:** **100,637**

**E.1.4. Projected % Work Completed by End of FY 98:** **0%** **[Assuming 0% was complete on 10/1/96]**

**E.1.5. Current Projected End Date of Project:** **Sep-39** **["Jan-00" is default value if the planned project completion milestone date is blank]**

**E.1.6. Previously Projected End Date of Project:**

## E.2. Performance for FY 1997 (All dollars in thousands)

**E.2.1. Actual Cost for FY 97:** **100,637**

**E.2.2. Actual % Work Completed to Date:** **0%** **[Assuming 0% was complete on 10/1/96]**

## E.3. Comparing Baseline to the Actuals (All dollars in thousands)

**E.3.1. Cost Deltas**

| | | Change | % Difference |
|---|---|---|---|
| **Diff. Between Actual and Projected Cost for FY 97:** | | **0** | **0%** |
| **Change in Estimated Lifecycle Cost of Project:** | **-** | **5,631** | **0%** |

**E.3.2. Change in % Work Completed:** **[Empty until end of FY 1998]**

## E.4. Enhanced Performance Categorization Process

| | FY 1997 | | Lifecycle | |
|---|---|---|---|---|
| **Change Type** | **Applicable? (Y/N)** | **If Yes, Why?** | **Applicable? (Y/N)** | **If Yes, Why?** |
| End State | **N** | | **N** | |
| Scope | **N** | | **N** | |
| End Date (Acceleration/Deferral) | **N** | | **Y** | **DE: Scope Deferral** |

## E.5. Categorizing Sources of Enhanced Performance

**If enhanced performance (cost avoidance, scope deletion, or accelerated schedule) was indicated in E.4., provide the % of total change in cost next to the categories that best represent the sources of enhanced performance:**

| | FY 1997 | Lifecycle |
|---|---|---|
| **Use of new technologies or techniques** | | |
| **Streamlined process** | | |
| **Resequencing of projects (mortgage reduction)** | | |
| **Privatization** | | |
| **Innovative contracting** | | |
| **Pollution prevention** | | |
| **Site activity integration** | | |
| **Site support cost changes** | | |
| **Total % (calculated)** | **0%** | **0%** |

## E.6. Total Calculated Enhanced Performance (All dollars in thousands)

| | |
|---|---|
| **FY 1997:** | |
| **Lifecycle Projected:** | |

## E.7. Enhanced Performance Narratives

### E.7.1. Cost Avoidance Narrative (if applicable):

Not applicable

### E.7.2. Scope Deletion Narrative (if applicable):

Insufficient funding has been provided to accomplish the planned scope for initiating facility modifications, procure long lead mining equipment and start developing procedures for receipt of remote handled TRU waste. These activities slip to FY99 and the first receipt date slips to January 2003 from January 2002. The lifecycle cost is reduced since the volume capacity at the WIPP will be lost. No RH will be emplaced in Panel 1.

### E.7.3. Accelerated Schedule Narrative (if applicable):

Not applicable

## E.8. Mortgage Reduction Potential Narrative

Not applicable