

## C.4 IDAHO OPERATIONS OFFICE SUMMARY

**NOTE:** This site summary provides information and data for sites under the Department's Idaho Operations Office. The data for this summary were collected in 1999 and do not necessarily reflect funding or completion profiles for the site. The data do not include changes that resulted from actual FY 2000 appropriations or anticipated changes as a result of both FY 2000 supplemental and FY 2001 budget requests. The Department is in the process of updating its life-cycle information for the EM program.

The 1999 data were the basis for DOE's *Status Report on Paths to Closure* (March 2000). The costs in the "Cost and Completion Date" section of this summary are the sum of the project planning baselines prepared by the field office and generally do not include estimates of project uncertainty. On the other hand, the cost range in the national status report includes an estimate of the cost resulting from project uncertainties, and EM's overall estimate of life-cycle costs of \$151-195 billion from FY 2000 to FY 2070 (or \$168-\$215 billion if the costs incurred between FY 1997 and FY 2000 are included in the cost range estimate).

The Idaho Operations Office manages environmental management (EM) activities at the Idaho National Engineering and Environmental Laboratory (INEEL), a site that occupies 890 square miles in a remote desert area in southeastern Idaho. The Laboratory consists of nine major operating areas at the site and several facilities in the City of Idaho Falls, located 42 miles east of INEEL.

INEEL is committed to completing several Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) remediation sites by FY 2006 while pursuing longer-term projects to accomplish cleanup of transuranic (TRU), high-level, and other radioactive and mixed wastes, spent nuclear fuel (SNF) disposition, and closure of remaining post-2006 CERCLA remediation sites. These activities are consistent with the Idaho Settlement Agreement requirements.

In addition to completing the EM mission in Idaho, INEEL has embarked on a long-range plan to shift the laboratory emphasis from site cleanup to becoming a national multi-program engineering and environmental laboratory. The near-term focus of the long-range plan is to support key capabilities and competitiveness necessary to ensure INEEL's future by leveraging the cleanup mission and making other long-term investments.

### C.4.1 End State

INEEL's final end state is described in the INEEL Comprehensive Facilities and Land-use Plan issued March 1996. The laboratory will continually work with their stakeholders and jointly review the Land-use Plan for accuracy and adequacy. The end state objective at INEEL is to meet the milestones of the Idaho Settlement Agreement, complete the work covered under the Federal Facility Compliance Act Site Treatment Plan, complete cleanup per Federal Facility Agreement and Consent Order (FFA CO) requirements, and disposition all waste and other materials in accordance with existing and future agreements.

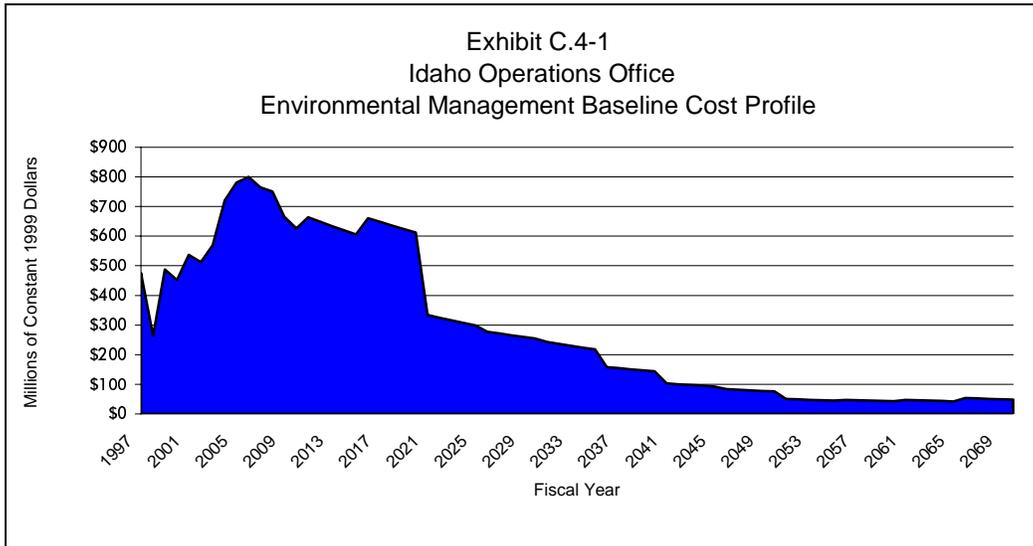
Based on an analysis of site land use for the next 100 years, the plan is to restore INEEL to an industrial and open space end state. The site will contain at least one on-site disposal cell at the Radioactive Waste Management Complex and one at the Idaho Nuclear Technology and Engineering Center (INTEC) for low-level waste (LLW). Currently, the site is also planning to store SNF until FY 2035, and treat and store high-level waste (HLW) until FY 2070. HLW will be ready for shipment in FY 2035. These milestones are consistent with the settlement agreement requirements. The EM mission will be completed in FY 2050.

### C.4.2 Cost and Completion Profile

The Idaho Operations Office has divided its EM work into 54 discrete activities. A Project Baseline Summary (PBS) exists for each project and contains detailed programmatic information, including cost, schedule, scope, end state, and interim milestones. For additional information on these projects, refer to the individual PBSs.

The sum of the costs of the planning baselines for individual projects managed by the Idaho Operations Office is \$21.4 billion (constant 1999 dollars). The majority of the work scope will be completed by 2050, with only monitoring and other essential functions continuing beyond 2050.

The projected cost profile for environmental management associated with the Idaho Operations Office is developed by combining the cost estimates in each of the 54 PBSs. Exhibit C.4-1 displays the resultant baseline cost profile.



### C.4.3 Accomplishments Since the 1998 *Paths to Closure* Report

Since the 1998 *Paths to Closure* report, the Idaho Operations Office completed several of its responsibilities on time and ahead of schedule including the following:

- ❑ Transported two scheduled TRU shipments from INEEL to the Waste Isolation Pilot Plant;
- ❑ Reduced liquid waste generation at INEEL by 43 percent;
- ❑ Treated 226 cubic meters of mixed low-level waste (MLLW) at the Waste Experimental Reduction Facility;
- ❑ Disposed of 4,700 cubic meters of LLW at the Radioactive Waste Management Complex Subsurface Disposal Area;
- ❑ Completed the base mat construction for the TMI-2 Long Term Storage Project facility and its receipts of the initial three horizontal storage modules;
- ❑ Received and stored the first shipments of Foreign Research Reactor spent nuclear fuel;
- ❑ Began receiving Three Mile Island fuel and debris; and
- ❑ Completed construction and Nuclear Regulatory Commission licensing of the Independent Spent Fuel Storage Installation.

Looking toward the future, the Idaho Operations Office signed a Record of Decision (ROD) for the Advanced Mixed Waste Treatment Project. EPA certified

INEEL's TRU waste characterization and quality control program. The Comprehensive ROD for the INTEC (Waste Area Group 3) remediation was issued in October of 1999. Finally, a DOE-approved Liquid Waste Management Plan for INEEL should pave the way for further reductions in liquid wastes from the site.

#### C.4.4 Work Scope Summary

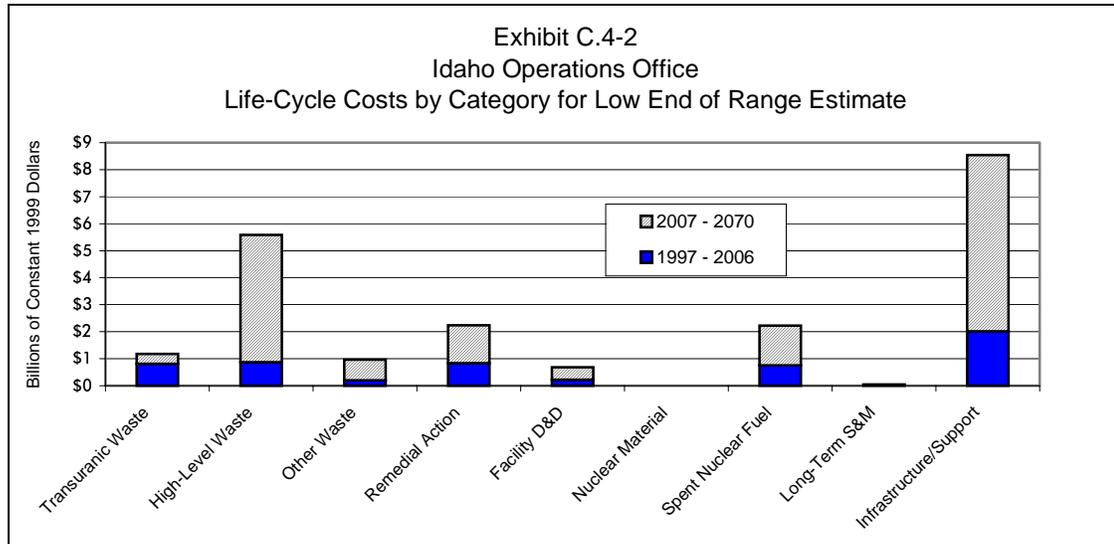
The Idaho cleanup mission requires projects to accomplish the cleanup of TRU and HLW, the disposition of SNF, and the cleanup and closure of CERCLA remediation sites.

Work is conducted using the seven criteria established by the EM program: (1) eliminate the most urgent risks; (2) reduce "mortgage" and support costs to free up funds for further risk reduction; (3) protect worker health and safety; (4) reduce the generation of wastes; (5) create a collaborative relationship between DOE, its regulators, and its stakeholders; (6) focus science and technology development on cost and risk reduction; and (7) integrate SNF and waste treatment and disposal across INEEL. The Laboratory has four programs in place to complete its environmental mission:

- ❑ The Waste Management Program will treat, store, and dispose of LLW, MLLW, TRU, and HLW in compliance with regulatory agreements and the Site Treatment Plan.
- ❑ The Environmental Restoration Program will remediate all FFA CO identified contaminated land/facilities as determined under CERCLA. Contaminated facilities used for previous INEEL nuclear reactor testing, SNF reprocessing, and waste treatment, storage, and disposal will undergo decontamination and decommissioning (D&D).
- ❑ The Nuclear Materials and Facilities Stabilization Program will receive and store SNF until final disposition.
- ❑ The Infrastructure and Deactivation Programs ensure adequate infrastructure support for the above-mentioned programs.

Exhibit C.4-2 shows the distribution of life-cycle costs by major work scope category for the Idaho Operations Office. More information about work scope can be found at the following websites, which contain links to the conceptual

summary disposition maps (<http://emi-web.inel.gov/summary.html>) and the detailed disposition maps (<http://emi-web.inel.gov/dmaps.html>) in PDF format.



### C.4.5 Critical Closure Path and Programmatic Risk

The critical closure path schedule presented as Exhibit C.4-3 sets forth the estimate for completing the closure activities at the Idaho Operations Office. The highlighted activities show the critical closure path, which represents the series of events that drive the overall completion date for the site and must occur without delay if the EM cleanup mission at INEEL is to meet the requirements of the Idaho Settlement Agreement, other regulatory compliance agreements, and court orders.

Completion of the EM mission at the Idaho Operations Office as scheduled for 2050 will depend on the timely accomplishment of critical activities and events. Sites have assigned programmatic risk scores to each of the critical activities/milestones. Exhibit C.4-4 presents a summary of milestones on the critical closure path that have high programmatic risk (programmatic risk scores of 4 or 5 in any category). Exhibit C.4-5 displays a summary of waste disposition data that have high programmatic risk (programmatic risk scores of 4 or 5 in any category).

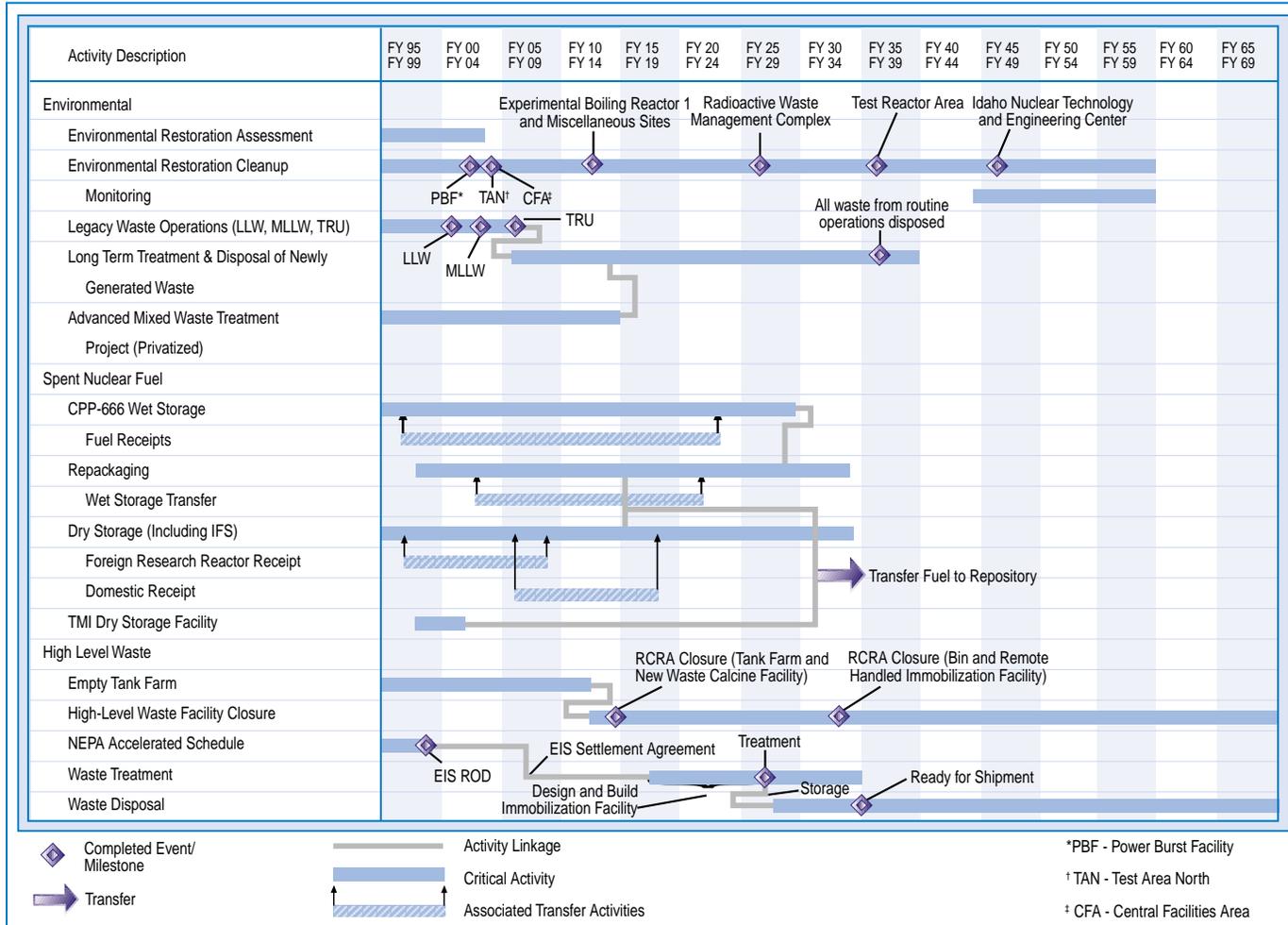


Exhibit C.4-3  
 Idaho Operations Office  
 Critical Closure Path

Exhibit C.4-3  
Idaho Operations Office  
Critical Closure Path

Milestone Description	FY 95 FY 99	FY 00 FY 04	FY 05 FY 09	FY 10 FY 14	FY 15 FY 19	FY 20 FY 24	FY 25 FY 29	FY 30 FY 34	FY 35 FY 39	FY 40 FY 44	FY 45 FY 49	FY 50 FY 54	FY 55 FY 59	FY 60 FY 64	FY 65 FY 69
First WIPP Data Complete for TRU Waste	◆ 3/98														
WIPP Accepts TRU Waste	◆ 5/98														
EPA Authority Granted for WIPP	◆ 6/98														
NRC License Issued (TMI)	◆ 10/98														
RW Record of Decision Issued for Repository		◆ 9/00													
NRC Approval of Safety Analysis Report Amendment 18		◆ 1/01													
RW Submits License Application to NRC for Repository		◆ 2/02													
Data Package Preparation Guideline for SNF Disposal Issued to the INEEL			◆ 12/09												
Repository Open for Commercial SNF License to Operate Approved			◆ 1/10												
RW Issues Final Disposability Interface Specifications (DIS)			◆ 1/10												
Repository Open for DOE SNF				◆ 1/15											
Reissue Guidance Document (First SNF Shipments Information)				◆ 1/15											
National Repository Ready to Receive DOE Fuel				◆ 1/15											

◆ Event/  
Milestone

Exhibit C.4-4  
Idaho Operations Office  
Summary of High Programmatic Risk Activities/Milestones

Project, Action, Event	Dates	Programmatic Risk Categories*		
		Technological	Work Scope Definition	Intersite Dependency
Commence Negotiating Plan and Schedule with State	December 1999	4	5	5
Issue Record of Decision	December 2009	4	5	5
Treat all HLW so that it is ready to be moved out of Idaho	December 2035	4	5	5

\*For a discussion of programmatic risk categories, see Appendix D on the Internet site <http://www.em.doe/closure/>.

Exhibit C.4-5  
Idaho Operations Office  
Summary of High Programmatic Risk Waste Disposition Data

Stream Name	Waste Stream Activity Name	Programmatic Risk Categories*		
		Technological	Work Scope Definition	Intersite Dependency
Test Area North Stainless Steel, Zirconium, & Miscellaneous SNF	Generation	1	4	1
Package Stainless Steel, Zirconium, & Miscellaneous SNF	Stabilize	4	3	3
Wet Stainless Steel, Zirconium, & Miscellaneous SNF	Generation	4	3	1
Wet Stainless Steel, Zirconium, & Miscellaneous SNF	Stabilize	4	4	1
Dried/Packaged Stainless/ Zirconium, & Miscellaneous SNF	Make Disposition Ready	4	4	1
Dry Graphite, Stainless, Zirconium, & Miscellaneous SNF	Generation	4	3	1
Nuclear Regulatory Commission Licensed Storage	Disposal	4	4	1

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Idaho Operations Office  
Summary of High Programmatic Risk Waste Disposition Data

Stream Name	Waste Stream Activity Name	Programmatic Risk Categories*		
		Technological	Work Scope Definition	Intersite Dependency
Dry Commercial SNF	Stabilize/ Make Disposition Ready	4	3	1
Wet Aluminum Based SNF	Generation	4	3	3
Dried/Packaged Al Based SNF	Ship to DOE Site	4	4	4
Dry Aluminum Based SNF	Ship to DOE Site	4	3	4
INTEC 603 Metallic Sodium Bonded	Generation	4	5	3
INTEC 603 Metallic Sodium Bonded	Stabilize	4	3	1
Packaged/Dried Metallic Na Bonded	Stabilize TBD	4	4	1
ANL-W Metallic Sodium Bonded	Generation	1	5	1
ANL-W Metallic Sodium Bonded	Stabilize TBD	5	4	1
High Activity Waste (HAW) from Separations	Treatment	4	3	1
Low Activity Waste (LAW) from Separations	Treatment	4	3	1
Hazardous Waste (HAZ) Liquid	In-Situ Management	1	4	1
HAZ-Soil	In-Situ Management	1	4	1
LLW-Liquid	In-Situ Management	2	4	1
LLW-Soil/Rubble/Debris	In-Situ Management	1	4	1
Shippingport Station and Decommissioning Project LLW	Treatment	1	5	4
SPAR LLW	Generation	1	5	5
SPAR LLW	Treatment	1	5	5
SPAR LLW	Disposal	1	5	5
Remote Handled (RH) Components	Generation	5	5	1
RH Components	Other Processing	5	2	2

Exhibit C.4-5  
Idaho Operations Office  
Summary of High Programmatic Risk Waste Disposition Data

Stream Name	Waste Stream Activity Name	Programmatic Risk Categories*		
		Technological	Work Scope Definition	Intersite Dependency
Sludges/Liquids from RFTS (A)	Other Processing	1	1	4
Polychlorinated Biphenyl (PCB) Liquids/Sludges from Bettis Atomic Power Laboratory (E)	Treatment	1	4	1
PCB Liquids/Sludges from RFTS (E)	Treatment	2	4	1
Sludges/Liquids from Lawrence Berkley National Laboratory (E)	Treatment	2	4	1
Debris from Knolls Atomic Power Laboratory (E)	Treatment	2	4	1
Debris from Kesselring Site (E)	Treatment	2	4	1
Debris from KWIN (E)	Treatment	2	4	1
Debris from Lawrence Livermore National Laboratory (E)	Treatment	2	4	1
Debris from Mare Island Naval Shipyards (E)	Treatment	2	4	1
Debris from NRF (E)	Treatment	2	4	1
Debris from Portsmouth (E)	Treatment	2	4	1
Debris from PSNS (E)	Treatment	2	4	1
Sludges/Liquids-Debris-Lab Packs-HEPAs-Lead	Treatment	2	4	1
WROC Repackaged MLLW to AMWTP	Treatment	2	4	1
LLW-Rubble/Debris	In-Situ Management	2	4	1
LLW-Soil	In-Situ Management	2	4	1
Mixed TRU-Rubble/Debris	Collect & Treat	3	4	1
MLLW-Soil	In-Situ Management	1	4	1
Environmental Restoration (ER)/D&D HAZ-Rubble/Debris	Collect & Dispose	3	4	1

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Idaho Operations Office  
Summary of High Programmatic Risk Waste Disposition Data

Stream Name	Waste Stream Activity Name	Programmatic Risk Categories*		
		Technological	Work Scope Definition	Intersite Dependency
ER/D&D LLW-Rubble/Debris	Collect & Treat	3	4	1
HAZ-Soil/Rubble/Debris	Collect & Treat	1	4	1
HAZ-Soil	Collect & Dispose	1	4	1
ER/D&D LLW-Soil/Rubble/Debris	Collect & Dispose	3	4	1
LLW-Soil	Collect & Treat	1	4	1
MLLW-Soil/Rubble/Debris	Collect & Dispose	2	4	1
MLLW-Soil	Collect & Treat	1	4	1
MLLW-Soil	In-Situ Management	1	4	1
MLLW-Sludge	Collect & Treat	1	4	1
MLLW-Soil	Collect & Treat	1	4	1
MLLW-Liquid	Collect & Treat	1	4	1
Mixed TRU-Rubble/Debris	Disposal	1	5	1
TRU-Soil	Disposal	1	5	1
LLW-Soil	In-Situ Management	1	4	1
HAZ-Soil	In-Situ Management	4	4	1
Mixed TRU-Sludge	Collect & Treat	1	4	1
Mixed TRU-Soil	Collect & Treat	3	4	1
Dry Graphite (CPP-749)	Stabilize	1	4	1
Repackaged Dry Graphite	Make Disposition Ready	4	1	1
MTRU-Sludge	Collect & Treat	1	4	1
ER TSCA Labpacks in Storage at WROC	Treatment/Disposal	1	5	1
Debris (E) from ANL-W	Treatment	2	4	1
SNF Requiring Conditioning	Generation	4	1	1
SNF Requiring Conditioning	Stabilize	4	1	1
Make Conditioned SNF Disposition Ready	Make Disposition Ready	4	3	1

\*For a discussion of programmatic risk categories, see Appendix D on the Internet site <http://www.em.doe/closure/>.