Idaho EM Cleanup Project(s)
Baseline Summary
June 2008

BACKGROUND

The U. S. Department of Energy (DOE) - Idaho Operations Office (DOE-ID) Idaho Cleanup Project (ICP) manages and dispositions radioactive and hazardous wastes and spent nuclear fuel (SNF) that originated from Cold War activities at the Idaho National Laboratory (INL) Site.

Since its establishment in 1949, the INL has been involved in the design and testing of fifty-two nuclear reactors and the reprocessing of SNF to recover fissile materials. These activities have resulted in an inventory of high-level, transuranic, mixed low-level, low-level, and hazardous waste which has required management and disposition. The INL Site is also responsible for storing and dispositioning approximately two hundred and fifty metric tons of SNF from multiple sources, including the U.S. Navy, foreign and domestic research reactors, commercial reactors, and DOE-owned fuel.

The INL Site is on the United States Environmental Protection Agency (EPA) National Priorities List (NPL - Superfund). Environmental remediation activities are underway or have been completed at ten Waste Area Groups (WAGs) encompassing about one hundred operable units, including the Naval Reactors Facility (NRF) and the Materials and Fuels Complex (MFC), formerly known as Argonne National Laboratory-West. (The INL Site Environmental Management (EM) Program is not responsible for activities at the NRF or the MFC.)

SCOPE DESCRIPTION

Major ICP activities include SNF disposition, calcine disposition, and remaining decontamination and decommissioning such as building CPP-601/640 disposition and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation at the Radioactive Waste Management Complex (RWMC), INTEC, and Operable Unit-10-08. Cleanup work also includes remediation of Tank Farm contaminated soils and of the Subsurface Disposal Area, disposition of sodium-bearing waste, continuation of post-remediation maintenance activities such as groundwater monitoring beyond FY 2012, and preparing key areas of the Site for long term stewardship (LTS) following completion of cleanup activities.

Currently one of the major activities is the disposition of 65,000 m3 of transuranic (TRU) waste, including the shipment of 15,500 m3 of TRU waste to WIPP. DOE-ID is developing a strategy for the disposition of the remaining waste in support of the Idaho Settlement Agreement milestone completion date of Dec. 31, 2015.

PROJECT MANAGEMENT

Based on the direction from EM Headquarters, the Idaho Operations 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 Idaho National Laboratory Site EM program consists of five projects as shown below: The Near-Term Baseline (NTB) for these projects is from FY 2006 – FY 2012 and the Out Year Planning Estimate Range (OPER) is from FY13 through FY 2035.

Project	Near Term Baseline (NTB) Approved	Out Year Planning Estimate Range (OPER) Validated
ID-INEEL-0011 - Nuclear Materials (NM) Stabilization and Disposition	Sept. 25, 2007	(Project Completed)
ID-INEEL-0012 - Spent Nuclear Fuel Stabilization & Disposition (Defense/Non Defense)	Sept. 25, 2007	February 2008
ID-INEEL-0013 – Solid Waste Stabilization & Disposition	Sept. 25, 2007	February 2008
ID-INEEL-0014 - Radioactive Liquid Tank Waste Stabilization & Disposition	Sept. 25, 2007	February 2008
Sodium Bearing Waste (Idaho Waste Treatment Unit - IWTU) LICP	CD 2/3B - Dec. 21, 2006	
ID-INEEL-0030 - Soil and Water Remediation	Sept. 25, 2007	February 2008
ID-INEEL-0040 - Nuclear Facility D&D	Sept. 25, 2007	February 2008

PROJECT SCOPE

ID-0012 - Spent Nuclear Fuel Stabilization & Disposition (D/N)
The purpose of this Project is to stabilize and disposition spent nuclear fuel. The INL Site currently stores approximately 262 metric tons heavy metal (legacy and non-legacy) SNF. This Project consolidates legacy SNF to a single Site area. The Project also transfers SNF from wet to dry storage located at the Idaho Nuclear Technology and Engineering Center (INTEC).

ID-0013 - Solid Waste Stabilization & Disposition
This Project dispositions stored transuranic waste (TRU), low-level waste (LLW), Resource Conservation and Recovery Act RCRA) hazardous waste, and mixed low-level waste backlog; closes on-site, low-level waste disposal facilities at the Radioactive Waste Management Complex (RWMC); and consolidates the waste management facilities to reduce operating costs. The end state for this Project will be achieved when all stored TRU waste is disposed. The stored TRU is comprised of both contact-handled and remote-handled waste. The contact handled TRU will be processed at the Advanced Mixed Waste Treatment Facility (AMWTF) and

shipped to the Waste Isolation Pilot Plant (WIPP) for disposal. Remote-handled TRU will be characterized and shipped to WIPP for disposal, also.

ID-0014 - Radioactive Liquid Tank Waste Stabilization & Disposition
This Project addresses one of the highest INL Site environmental risks by removing the liquid wastes stored over the Snake River Aquifer. This Project treats and disposes the sodium-bearing tank waste, closes the INTEC Tank Farm tanks, and completes the final Tank Farm remediation, and calcine waste disposition. The sodium-bearing waste (SBW) tank waste retrieved from the tanks will be treated and disposed outside the State of Idaho. Specific activities to be accomplished through the life cycle of this Project include the treatment and disposal of approximately one million gallons of liquid SBW stored in eleven underground tanks. One major focus of this Project will be to design, construct, and operate a facility to retrieve and treat the SBW liquids and associated tanks solids for disposal at national waste repository. Another significant component of this PBS is high level waste calcine disposition.

ID-0030 - Soil and Water Remediation
This Project remediates contaminated soil and groundwater and closure of legacy RCRA issues at the INL Site to eliminate risk to the Snake River Plain Aquifer. As cleanup actions are completed for a WAG, institutional controls and stewardship management will be implemented to enable reuse of areas for current and future DOE missions, as assigned. The end state for this Project will be the completion of specific Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup activities and the Voluntary Consent Order (VOC) RCRA activities identified in the EM Performance Management Plan.

ID-0040 - Nuclear Facility D&D
This Project focuses on deactivation and disposition of EM-owned high-risk radiologically contaminated INL Site nuclear buildings and facilities and includes deactivation of four SNF storage pools, disposition of four excess nuclear test reactors, and disposition of a nuclear fuel reprocessing building. Total volume of material to be dispositioned, including non-nuclear facilities and buildings) is over 3.1 million square feet.

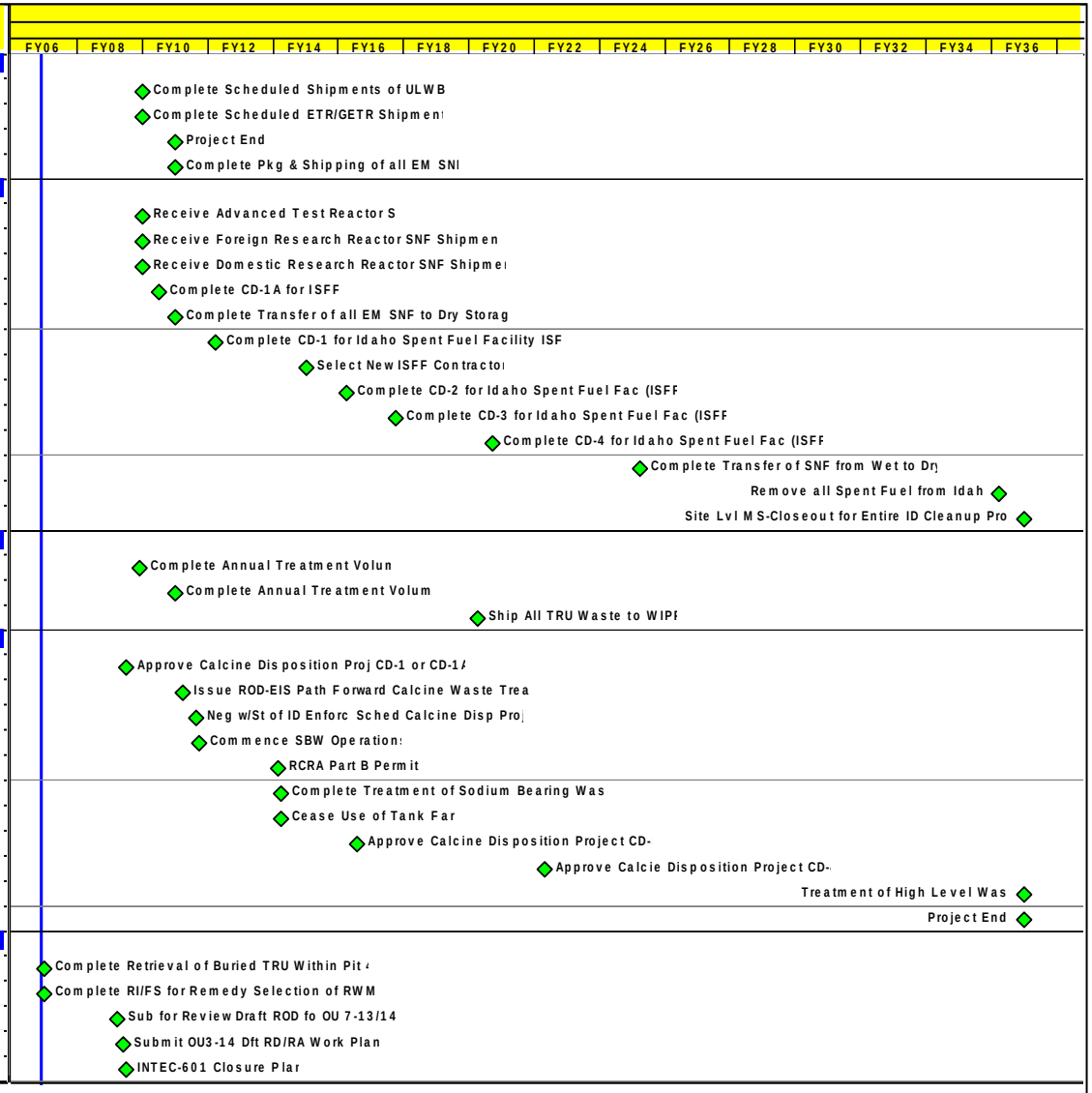
PROJECT COST

(dollars in millions)

PBS / $M	11	12D/N	12X	13	14	SBW	30	40	50	100	Total w/o SBW	Total w/SBW
Prior Year Costs (1997-2005)	5.9	307.9	68.9	1,414.4	1,113.9	37.5	748.2	67.2	94.3	42.3	3,863.0	3,900.5
Total Near Term Baseline FY06-12 (50% Conf. Lev)	11.2	167.7	44.8	1,303.6	381.2	461.6	653.9	747.0	43.4	27.0	3,379.8	3,841.4
Unfunded Contingency	24.2	159.7	0.0	353.1	369.3	0.0	88.8	6.0	0.0	0.0	1,001.1	1,001.1
Performance Baseline (80% Conf. Lev.)	35.4	327.4	44.8	1,656.7	750.5	461.6	742.7	753.0	43.4	27.0	4,380.9	4,842.5
OPER (2013-2037) (50-80% Conf. Lev.)	0.0 - 0.0	4,350.0-5,320.0	0.0 - 0.0	530.0 - 900.0	6,670.0 - 9,460.0	0.0 - 0.0	4,440.0 - 6,120.0	1,780.0 - 1,970.0	0.0 - 0.0	137.9 - 137.9	17,907.9 - 23,907.9	17,907.9 - 23,907.9
Total Life Cycle Costs (Prior Year, NTB, and OPER (2006-2037) (80% Conf. Lev.)	41.3	5,955.3	113.7	3,971.1	11,324.4	499.1	7,610.9	2,790.2	137.7	207.2	32,151.8	32,650.9

SUMMARY LIFECYCLE BASELINE SCHEDULE

Activity ID	Activity Description	Early Finish
11 Nuclear Material Stabilization & Disposition		
55811	Complete Scheduled Shipments of ULWBR	30SEP08*
55812	Complete Scheduled ETR/GETR Shipments	30SEP08*
11200	Project End	30SEP09*
48859	Complete Pkg & Shipping of all EM SNM	30SEP09*
12 SNF Stabilization & Disposition		
55815	Receive Advanced Test Reactor SNF	30SEP08*
55816	Receive Foreign Research Reactor SNF Shipments	30SEP08*
55817	Receive Domestic Research Reactor SNF Shipments	30SEP08*
12817	Complete CD-1A for ISFF	30MAR09*
49202	Complete Transfer of all EM SNF to Dry Storage	30SEP09*
12982	Complete CD-1 for Idaho Spent Fuel Facility ISFF	31DEC10*
12827	Select New ISFF Contractor	01OCT13*
12987	Complete CD-2 for Idaho Spent Fuel Fac (ISFF)	31DEC14*
12826	Complete CD-3 for Idaho Spent Fuel Fac (ISFF)	30JUN16*
12986	Complete CD-4 for Idaho Spent Fuel Fac (ISFF)	30JUN19*
50338	Complete Transfer of SNF from Wet to Dry	31DEC23*
50281	Remove all Spent Fuel from Idaho	01JAN35*
12C200	Site Lvl MS-Closeout for Entire ID Cleanup Proj	30SEP35*
13 Solid Waste Stabilization & Disposition		
50286	Complete Annual Treatment Volume	30AUG08*
1350285	Complete Annual Treatment Volumes	30SEP09*
50282	Ship All TRU Waste to WIPP	31DEC18*
14 Radioactive Liquid Tank Stabilization & Dispos		
14835	Approve Calcine Disposition Proj CD-1 or CD-1A	31MAR08*
47695	Issue ROD-EIS Path Forward Calcine Waste Treat.	31DEC09*
14B840	Neg w/St of ID Enforc Sched Calcine Disp Proj	01JUN10*
50289	Commence SBW Operations	30JUN10*
50278	RCRA Part B Permit	01DEC12*
20576	Complete Treatment of Sodium Bearing Waste	31DEC12*
50280	Cease Use of Tank Farm	31DEC12*
14837	Approve Calcine Disposition Project CD-3	01MAY15*
14C838	Approve Calcie Disposition Project CD-4	31JAN21*
50275	Treatment of High Level Waste	30SEP35*
14C200	Project End	30SEP35*
30 Soil & Water Remediation		
48385	Complete Retrieval of Buried TRU Within Pit 4	30SEP05*
54957	Complete RI/FS for Remedy Selection of RWMC	30SEP05*
55822	Sub for Review Draft ROD fo OU 7-13/14	31DEC07*
30858	Submit OU3-14 Dft RD/RA Work Plan	21FEB08*
50202	INTEC-601 Closure Plan	31MAR08*



Start Date 01OCT04
Finish Date 30SEP35
Data Date 01OCT05
Run Date 07MAR08 10:58

DOE-ID

ICP Performance Baseline

Activity ID	Activity Description	Early Finish
30B001	VCO NEW-CPP-016 Sub Cert/Clos to DOE for Rvw/App	13SEP08*
49210	Submit Dft OU10-04 Ph II RA Rpt for TNT/RDX Rem	17NOV08*
49212	Sub OU10-08 Dft ROD for Site-Wide Ground Water	31DEC08*
50203	INTEC-055 Closure Plan	31DEC08*
50207	SFE-106 Closure Certificate	26JAN09*
50204	Stat of Purified Waste Solv Line VCO INTEC601-3	31MAR09*
30B002	VCO Sub Clos Cert Site Tank 005 TRA-007	11MAY09*
49213	Complete Retrieval Op Period ARPII Pits 4&6	30SEP09*
30B003	VCO Sub Cert for FDP Cell Components	24JUN10*
49219	Sub Dft OU1-07B InSitu BioRem RA Rpt/TANGW Plume	30SEP10*
30B004	VCO Sub Dft Clos Pln/RCRA Pmt App Ct Tk/TRU Pip	30SEP10*
30B005	VCO Insp/Rem TAN Brown Lines Subunit 1 Piping	30SEP10*
3049222	Sub Dft OU10-04 Ph III RA Rpt-Gunrange Lead Cont	30MAR11*
50216	Group 7 Draft RA Report	29FEB12*
50211	Dft OU3-13 Gp 3 Ph II RA Report	11MAY12*
30B006	Submit Final RA Rpt OU10-04 to Agencies	28SEP12*
30B200	Project End	30SEP12*
50217	Zone 1 Remediation Draft RA Report	30SEP13*
30C200	Project End	30SEP35*
40 Nuclear Facility D&D		
40B110	Complete CPP-603A Basin Disposition	30SEP08*
40B120	Complete Engineering Test Reactor Demolition	30SEP10*
40B100	Complete CPP-603A Demolition	30SEP11*
40B200	Project End	30SEP12*

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ICP Performance Baseline