



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Idaho Cleanup Project Program Citizens Advisory Board

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June 23, 2015

Idaho Cleanup Project Scope

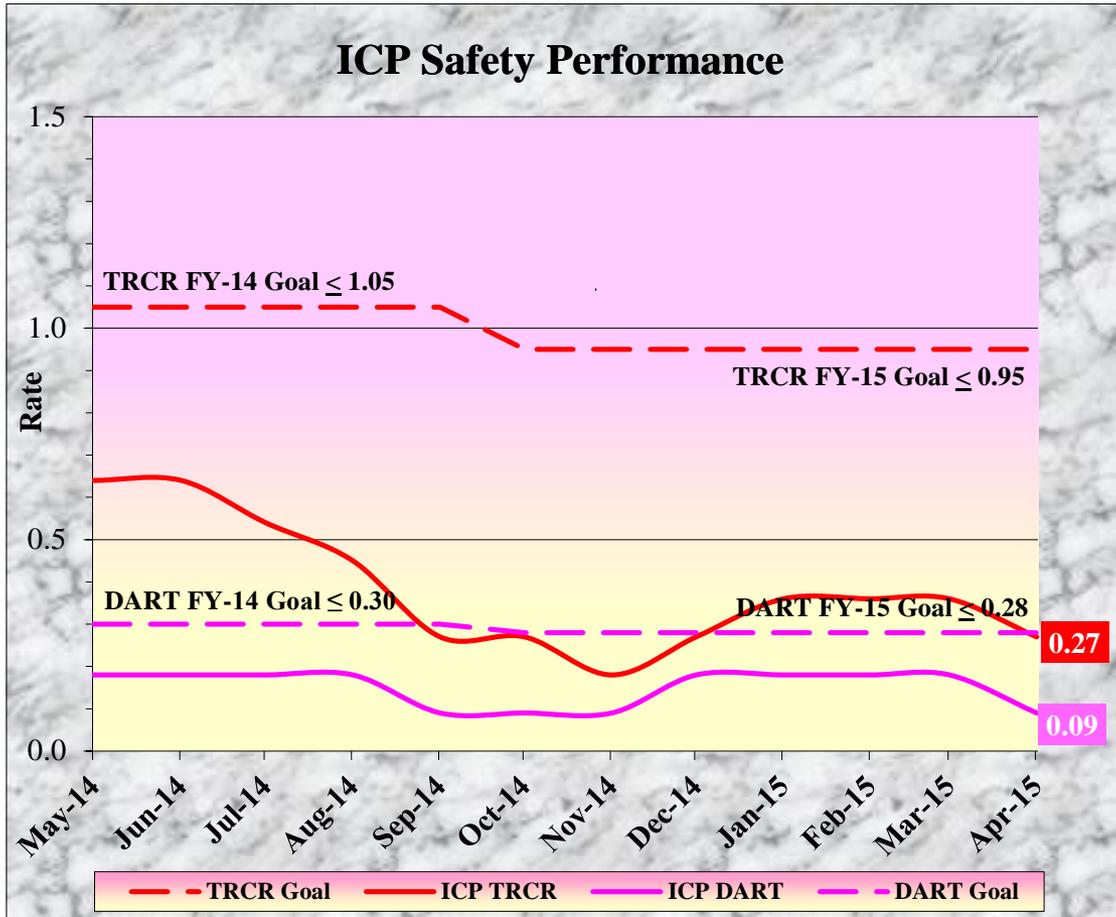
- Transuranic Waste Disposition
- Advanced Mixed Waste Treatment Project (AMWTP)
- Comprehensive Environmental Response Compensation Liability Act (CERCLA) Remediation
 - Waste Area Group (WAG) 1 – Test Area North (TAN)
 - Waste Area Group (WAG) 2 – Test Reactor Area (TRA) - **Complete**
 - Waste Area Group (WAG) 3 – Idaho Nuclear Technology and Engineering Center (INTEC)
 - Waste Area Group (WAG) 4 – Central Facilities Area (CFA) - **Complete**
 - Waste Area Group (WAG) 5 – Power Burst Facility (PBF)/Auxiliary Reactor Area (ARA) - **Complete**
 - Waste Area Group (WAG) 6 – Experimental Breeder Reactor No. I (EBR-I) - **Complete**
 - Waste Area Group (WAG) 7 – Radioactive Waste Management Complex (RWMC)
 - Waste Area Group (WAG) 9 – Argonne National Laboratory – West (ANL-W) - **Complete**
 - Waste Area Group (WAG) 10 – Site-wide Miscellaneous Sites/Snake River Plain Aquifer
- Idaho CERCLA Disposal Facility

Idaho Cleanup Project Scope (cont.)

- Sodium Bearing Waste Treatment
- INTEC Liquid Waste Treatment Facility (Tank Farm Closure)
- Calcine Disposition
- Spent Nuclear Fuel Management
- Decontamination and Decommissioning: Materials and Fuels Complex

Safety Performance – May 2015

(Information and Data through April 26, 2015)



March 2015

Six First Aid Cases and No Recordable Injuries

Two ORPS Reportable Occurrences:

- Failed Sling During Disengagement of Rigging of Large Cell Cask (LCC)
- Idaho Department of Environmental Quality (IDEQ) Issues Warning Letter to CWI for an Alleged Violation on Aisle Spacing

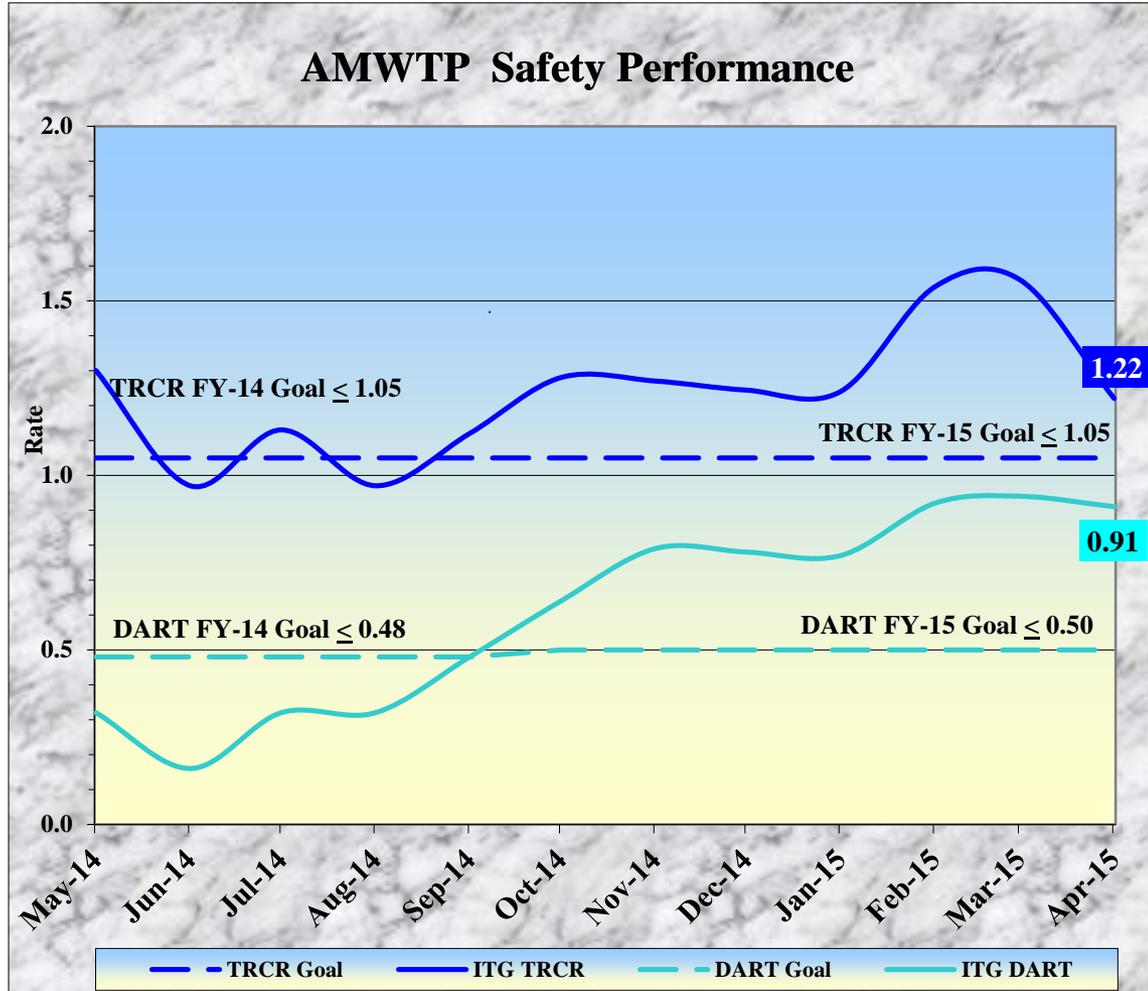
April 2015

Three First Aid Cases and No Recordable Injuries

No ORPS Reportable Occurrence:

Safety Performance – May 2015

(Information and Data through April 26, 2015)



March 2015

No First Aid Cases and No Recordable Injuries:

Three ORPS Reportable Occurrences

- Dropped Puck Damages Super Compactor Glove Box Window
- Warning Letter Received From the State of Environmental Quality for failure to report south boxline not operating more than 14 days in a row.
- Operator Receives Electrical shock from Engine Heater Wiring

April 2015

Two First Aid Cases and No Recordable Injuries:

One ORPS Reportable Occurrence:

- Near Miss – North Boxline Camera 56 Falls To Floor During Replacement

Remote-Handled Transuranic Waste Disposition

Key Activities/Actions:

- Remote-handled transuranic waste shipments will resume once WIPP re-opens.
- Efforts to clear Sodium distillation system blockage were unsuccessful.
- Moving forward with new distillation system fabrication, installation upcoming.
- Permit changed to allow more use of water to treat sodium in cell and avoid distillation system.
- Installation of Argon Repack system in CPP-659 complete.
- 6 waste streams are submitted and pending approval and 6 waste streams are planned for review and approval starting in FY 2016



Argon Repackaging Station in CPP-666

Remote-Handled Transuranic Waste Disposition (cont.)

RH-TRU Project Status:

- 133 cubic meters of ISA RH-TRU waste has been treated by the project to date.
- 1.2 cubic meters of 4.17 cubic meters planned for treatment in FY15 is complete as of 4/30/15.
- 50 shipments of RH-TRU waste Certified and ready to ship to WIPP.
- The project is currently behind schedule due to the Sodium distillation system blockage but expects to recover with additional newly approved treatment.

Remaining EM RH-TRU waste to meet ISA:

- Approximately 25 cubic meters.

Upcoming Activities:

- Installation of Argon Repackaging Station in CPP-659 by May 2015. - COMPLETE
- Upgrades to Sodium distillation system completed by August 2015.
- Complete processing of all ISA RH-TRU waste by the end of FY 2015.



Repackaging Operations in CPP-659

Advanced Mixed Waste Treatment Project



Top: Loading waste into Macro Bag
Bottom: Debris waste in South Box Line

Key Activities/Actions:

- Contact-handled transuranic waste shipments will resume once WIPP reopens.
- Through March 14, 2015, AMWTP operations have shipped over 51,035 cubic meters of Idaho Settlement Agreement waste out of Idaho.
- 625 shipments of waste Certified for shipment to WIPP.
- Cell 2 waste retrieval complete.

Upcoming Activities:

- Complete startup of aerosol can venting in AMWTF 3rd Quarter 2015.
- Complete TSA-RE Storage reconfiguration 4th Quarter 2015.
- Complete certification of box assay system 3rd Quarter 2016.

CH TRU Processing

AMWTP	TRU Certified Awaiting Shipping	TRU Certified and Shipped	Legacy MLLW Shipped	Total Progress
CY 1995 – CY 2011	N/A	35,441m ³	6,101m ³	41,542m ³
CY 2012	N/A	2,568m ³	1,433m ³	4,001m ³
CY 2013	N/A	2,487m ³	1,022m ³	3,509m ³
CY 2014	1,483m ³	923m ³	1,060m ³	3,466m ³
Total	1,483m ³	41,419m ³	9,616m ³	52,518m³

Advanced Mixed Waste Treatment Project



Key Activities RETRIEVAL and CARGO/Actions:

- Emptied first cargo in December, with 27 Of 104 cargo containers empty.
- Started retrieving waste from Pad 1 Cell 1, the final cell with waste containers.
- Completed retrieval of all waste from Pad 1 Cell 2.

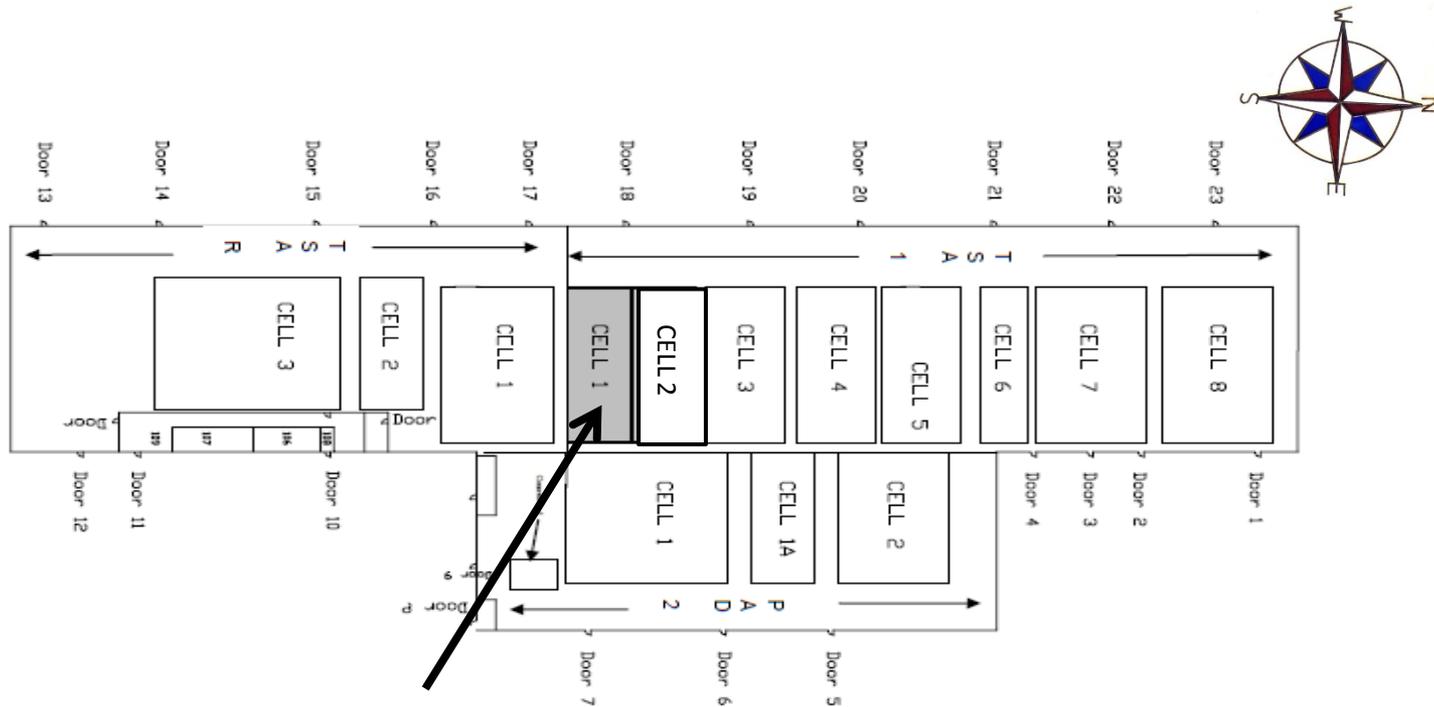
Upcoming Activities:

- Commence Phase II of transferring soil sacks and empty cargo containers to ICDF.
- Complete removal of retrieval fire break.

Top: Unloaded Cargo Container

Bottom: Degraded drums in open cargo container.

TSA-RE Original Floor Plan



Location of remaining waste in Cell 1 of Pad 1
Thirteen cells have been retrieved.

- WAG 1: Test Area North (TAN)
 - TAN Groundwater Remediation
- WAG 3: Idaho Nuclear Technology and Engineering Center (INTEC)
 - Complete the work associated with the OU 3-14 Record of Decision
 - Operate the Idaho CERCLA Disposal Facility (ICDF) to compliantly disposition CERCLA waste
- WAG 7: Radioactive Waste Management Complex (RWMC)
 - Exhume 5.69 acres of buried waste (Completed 3.8 acres as of May 31, 2015)
 - Complete the work associated with the OU 7-13/14 Record of Decision
- WAG 10: Site Wide
 - Maintain site wide institutional controls, and operations and maintenance program
 - Maintain groundwater monitoring program
 - Maintain the New Site Identification Process for future CERCLA sites
 - Remediate Munitions and Explosives of Concern (MEC) sites. Final Remedial Action Report approved by the Agencies August, 2014. **Complete**

Key Activities/Actions:

- WAG 1 - Initiated TAN injection/monitor well drilling at TAN
- WAG 10 - Continue evaluation of remedial actions for input into the CERCLA 5 Year Review
- Completed draft of the revised CERCLA Community Involvement Plan

Upcoming Activities:

- WAG 1 - Drill/construct two injection/monitor wells at TAN
- WAG 1 - Continue In situ-Bioremediation rebound test
- WAG 3 - Continue perched water monitoring and groundwater recharge controls at INTEC
- WAG 10 - Conduct annual Institutional Control Inspections
- WAG 10 - Submit Five-year review report
- WAG 10 - Continue monitoring and institutional controls
- WAG 10 - Continue progress on New Site evaluation/remediation



Initiating well drilling at TAN - May 2015

Well Drilling at Test Area North

- Well drilling activities initiated in May, scheduled to complete in August.
- USGS performing drilling with CWI support.
- As of June 17, first well drilled to 209 feet, second to 32 feet.
- Wells will be used to monitor as well as injecting amendment to treat source of Trichloroethylene (TCE) in well TAN-28.



TAN well drilling underway



Setting up drill rig for TAN well drilling - May 2015

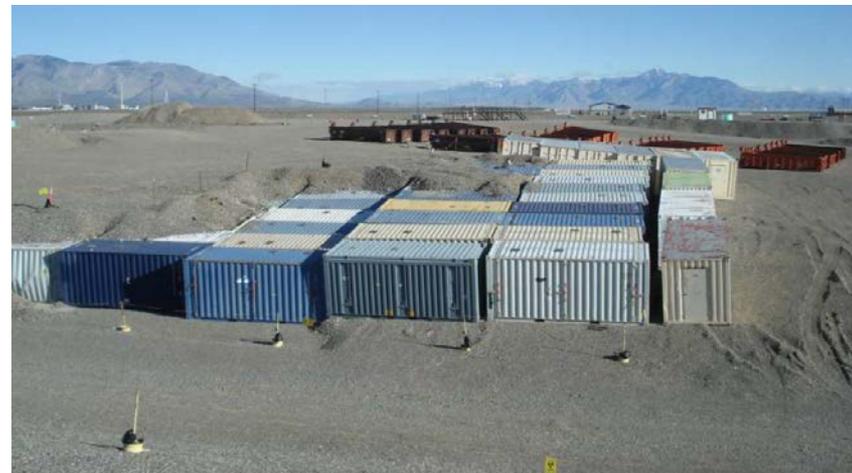
CERCLA Remediation – Idaho CERCLA Disposal Facility (ICDF)

Key Activities/Actions:

- FY 2015 - Received 21,662 gallons of liquid for disposal to evaporation ponds as of 05/01/2015
- FY 2015 - Received a total of 2,162 m³ of solid waste for landfill disposal
 - Phase I AMWTP (FY 2014 – FY 2015): Received all 105 (3,806 m³) planned cargo containers
 - Phase II AMWTP (FY 2015 to date): Received 10 (363 m³) of 54 planned total cargo containers

Upcoming Activities:

- Continue receipt and disposal of aqueous wastes in Evaporation Ponds
- Dispose of solid waste from environmental restoration actions, including 104 Phase II of AMWTP cargo containers and soil
- Continue operation and maintenance of ICDF complex processes and facilities



ICDF disposal cell - April 2015



ICDF evaporation pond - April 2015

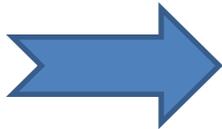
Status of Five-Year Review

- First draft of 5-Year Review has been completed for internal review.
- Draft will be submitted to Agencies 4Q, Fiscal Year (FY) 2015.
- Draft Final will be submitted to Agencies 1Q, FY 2016.
- CAB briefing scheduled for 2Q, FY 2016.

Dashboard Legend



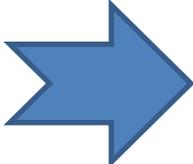
Ahead of schedule, under budget, better than expected.



On schedule, on budget, performance as expected.



Behind schedule, over budget, performance less than expected.

Key Questions	Dashboard Indicator	Comments
Percent of project completed	110% 	Project is ahead of schedule
Percent of budget expended	58% 	Project is under budget
Impact on employment/economic development		Project will continue at a similar level of effort for several years
Affect on agreements		Project continues to meet regulatory milestones
Impact on safety and environment		No ongoing safety issues; Safety goals are being met
Impact on cleanup DOE-wide		No impact on DOE-wide cleanup

CERCLA Remediation - WAG 7 Objectives

- Complete remediation work in accordance with the Record of Decision (ROD) for OU 7-13/14
- Conduct Targeted Waste Retrieval at the Accelerated Retrieval Projects (ARP) and disposition waste:
 - ARP I, II, III, IV, V, VI and VII - **completed**
 - ARP VIII: 0.7 (as of 5/31/15) acres out of 1.72 acres have been exhumed
 - ARP IX: Initiated design and foundation construction
 - ARP I & VI D&D - **completed**
- Complete in situ grouting of 21 locations - **completed**
- Subsurface solvent vapor extraction (Organic Contamination in the Vadose Zone (OCVZ)).
- Environmental monitoring and institutional controls

Key Activities/Actions:

- Continued ARP VIII waste exhumation. CWI completed its contract requirement to exhume 0.51 acres November 2015. .3 acres were added to the contract scope raising their requirement to .81 acres by 9/30/15, of which 0.7 acres have been exhumed as of 5/31/15
- ARP V was placed back in operational status in order to repackage additional AMWTP sludge waste on 3/2/15. 555 of 799 drums have been repackaged as of 5/31/15
- ARP IX design and foundation construction planned for completion by 9/30/15 is progressing as planned
- Since 1996, 242,331 lbs. TVOC removed using vapor extraction as of 5/1/15.

Upcoming Activities:

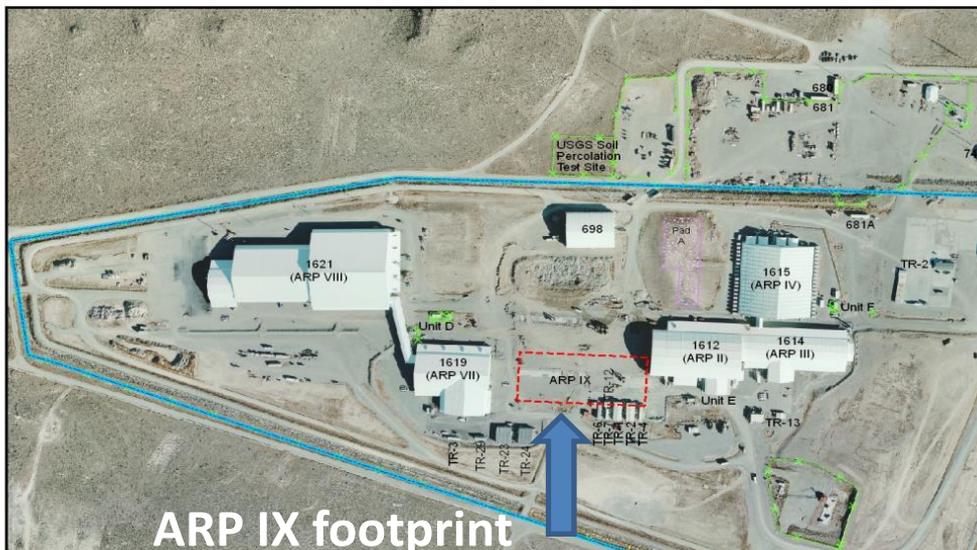
- Continue to exhume targeted buried waste in ARP VIII
- Continue AMWTP sludge repackaging in ARP V
- Complete ARP IX design and foundation construction
- Continue organic vapor extraction

Metric	Baseline
Exhume targeted buried waste	0.51 + .3 = .81 acres by 9/30/15

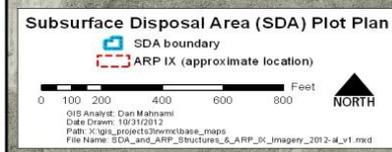


ARP VIII exhumation

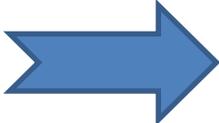
CERCLA Remediation - WAG 7 - ARP IX Foundation Construction



ARP IX footprint



WAG 7 Dashboard

Key Questions	Dashboard Indicator	Comments
Percent of project completed	110% 	Project is ahead of schedule
Percent of budget expended	65% 	Project is under budget
Impact on employment/economic development		Project is expected to continue through the majority of the next contract period
Affect on agreements		Project is ahead of pace to meet regulatory milestones
Impact on safety and environment		No ongoing safety-related issues; safety goals being met
Impact on cleanup DOE-wide		ARP crew performing both buried waste exhumation in ARP VIII and sludge repackaging in ARP V

CERCLA Milestone Progress

Waste Area Group (WAG)	Milestone Title	Milestone type	Milestone Date	FY2015
WAG 1 (TAN)	Revised rebound test plan	FFA/CO Regulatory	Submit Draft plan by 2/15/2015	Complete - Draft plans was submitted 2/10/2015
WAG 1 (TAN)	Construct 2 new injection/monitor wells	Contract baseline; Pending regulatory commitment	9/30/2015 (on track)	Construct 2 wells – Drilling began May 2015
WAG 3 (INTEC)	Interim INTEC Tank Farm Cover Phase <ul style="list-style-type: none"> Phase A (western 2/3) Phase B (eastern 1/3) 	<ul style="list-style-type: none"> FFA/CO Regulatory FFA/CO Regulatory 	<ul style="list-style-type: none"> Submit RA Report by 11/30/2017(on track) Submit RA Report by 11/30 of first field season after tank farm closure (on track) 	<ul style="list-style-type: none"> N/A N/A
WAG 3 (INTEC)	Final Tank Farm Evapo-transportation cover	FFA/CO Regulatory	After INTEC Closure	N/A

CERCLA Milestone Progress (continued)

Waste Area Group (WAG)	Milestone Title	Milestone type	Milestone Date	FY2015
WAG 7 (RWMC)	Exhume .81 acres of targeted buried waste	Contract baseline	9/30/15 (on track)	.3 acres added to CWI contract
WAG 7 (RWMC)	Complete ARP IX Design and Foundation construction	Contract baseline	9/30/15 (on track)	Complete scope
WAG 7 (RWMC)	Complete ARP IX construction	Contract baseline	2017	N/A – Evaluating acceleration
WAG 7 (RWMC)	Complete 90% Design for final Subsurface Disposal Area (SDA)	FFA/CO Regulatory	9/30/2020	N/A
WAG 7 (RWMC)	Complete Buried waste exhumation (5.69 acres)	FFA/CO Regulatory	12/31/2023	CWI to complete .81 acres by 9/30/2015
WAG 7 (RWMC)	Completed SDA final Cover construction	FFA/CO Regulatory	12/31/2028	N/A
WAG 10 (Misc)	Submit draft 5yr review	Contract baseline & reg. commitment	9/30/2015 (on track)	Submit draft report

Milestone Title	Milestone type	Milestone Date	FY2015
Repackage 799 drums and 41 boxes	Contract baseline	9/30/15 (on track)	Repackage 799 drums and 41 boxes

Key Activities/Actions:

- Completed cleaning and sampling tank WM-190.
- Sent samples from tank WM-190 off for analysis.

Upcoming Activities:

- Flush tank WM-190 cooling coils.
- Receive and analyze tank WM-190 sample results.

Baseline:

- The contract requires CWI to complete RCRA closure of the entire INTEC Tank Farm per the approved RCRA closure plan and clean and grout the remaining four tanks. Due to IWTU delays, this work is behind schedule and will not be completed under the current contract.

Agreements:

- The current schedule in the Tank Farm RCRA closure plan may be missed due to IWTU delays.

Metric	Baseline
Close liquid waste tanks	4 tanks by 9/2015



Prepping for tank farm work

Spent Nuclear Fuel Disposition Project

Key Activities/Actions:

- Seven ATR and five EBR-II fuel transfers were completed to date.
- Completed DOE and Contractor Readiness Assessments for CPP-666 resin removal project.
- Completed all spent resin transfers to Nevada for disposal.
- Recharge CPP-666 resin vessels with new resin materials.

Upcoming Activities:

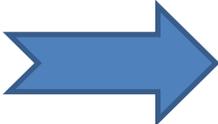
- Continue ATR and EBR-II SNF fuel transfers.
- Complete removal of remaining spent resin from CPP-666.
- Initiate Contractor Readiness Assessment in the fourth quarter for BEA Research Reactor (BRR) Cask activities in CPP-603; loading for TRIGA fuel. Two TRIGA fuel elements will be shipped to MFC for research.
- Continue to prepare Three Mile Island's NRC license renewal application.

Metric	FY 15 Baseline
Ship Advanced Test Reactor fuel	15 ATR
Ship EBR-II	6 EBR II



Spent Resin Cask Shipment

Dashboard Summary – Spent Nuclear Fuel Disposition Project

Key Questions	Dashboard Indicator	Comments
Percent of project completed	83% 	The project is primarily a LOE activity (70%) supporting fuel transfers. Due to operational considerations at other INL facilities, fuel transfer activities (ATR and EBR-II) were lagging at the end of the quarter.
Percent of budget expended	77% 	Cumulative performance through March was a SPI of 0.98 and CPI of 1.37. However, schedule slippage in one subproject due to winter operations for the resin removal project. The overall activity completion milestone of June 30, 2015 is expected to be met.
Impact on employment/economic development		The project projects a cost underrun, which supports stable employment and economic development.
Affect on agreements		Project is on pace to meet its fiscal year scope.
Impact on safety and environment		The SNF contributes to the overall positive performance towards ICP safety goals. An ORPS reportable event occurred in March.
Impact on cleanup DOE-wide		No impact on overall cleanup.

Completed Activities/Actions:

- Completed steam treatment of all MFC-766 heat exchangers and super heaters.
- Completed grouting of MFC-767, EBR-II reactor building basement and reactor vessel.

Upcoming Activities:

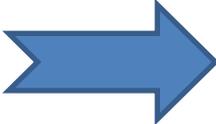
- Begin MFC-766 pre RCRA closure preps.



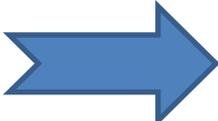
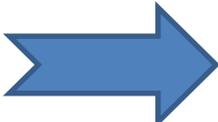
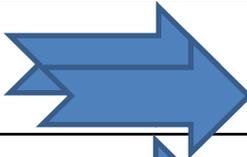
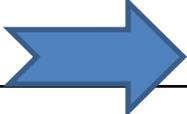
Top – Final cap of grout placed on MFC-766 reactor control rod drive mechanism pit
 Bottom – Interior view of MFC-767 heat exchanger (Evaporator 703) after steam treatment



Dashboard Summary – MFC D&D

Key Questions	Dashboard Indicator	Comments
Percent of project completed	80% 	The project has completed treating 9 MFC-766 heat exchangers and grouting the MFC-767 EBR-II reactor. The project is on track for early completion.
Percent of budget expended	91% 	Cumulative performance through March was a SPI and CPI of 1.38.
Impact on employment/economic development		Due to efficiencies within ICP, D&D work at MFC will continue throughout the fiscal year for D&D deactivation work at MFC-766.
Affect on agreements		Project is meeting its regulatory commitments. MFC-766, steam treatment of the heat exchangers was the primary treatment activity remaining to D&D. MFC-767, EBR-II reactor is RCRA closed. Grouting of the reactor is step toward final D&D.
Impact on safety and environment		D&D operations were performed safety and compliantly during the reporting period.
Impact on cleanup DOE-wide		No impact on complex wide cleanup.

ICP Dashboard Summary

Key Questions	Dashboard Indicator	Comments
Amount of project completed		CERCLA, D&D and SNF ahead of schedule.
Amount of budget expended		IWTU delays are causing costs to rise, but overall ICP budget is within target.
Impact on employment/economic development		ICP and ITG employment levels are basically stable.
Affect on agreements		IWTU and WIPP shipments key indicators – no change.
Impact on safety and environment		No impacts.
Impact on cleanup DOE-wide		No outstanding impacts.