



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# Idaho Cleanup Project Program Citizens Advisory Board

---

**Jack Zimmerman**

*Deputy Manager*  
Idaho Cleanup Project

**October 29, 2015**

# Idaho Cleanup Project Scope

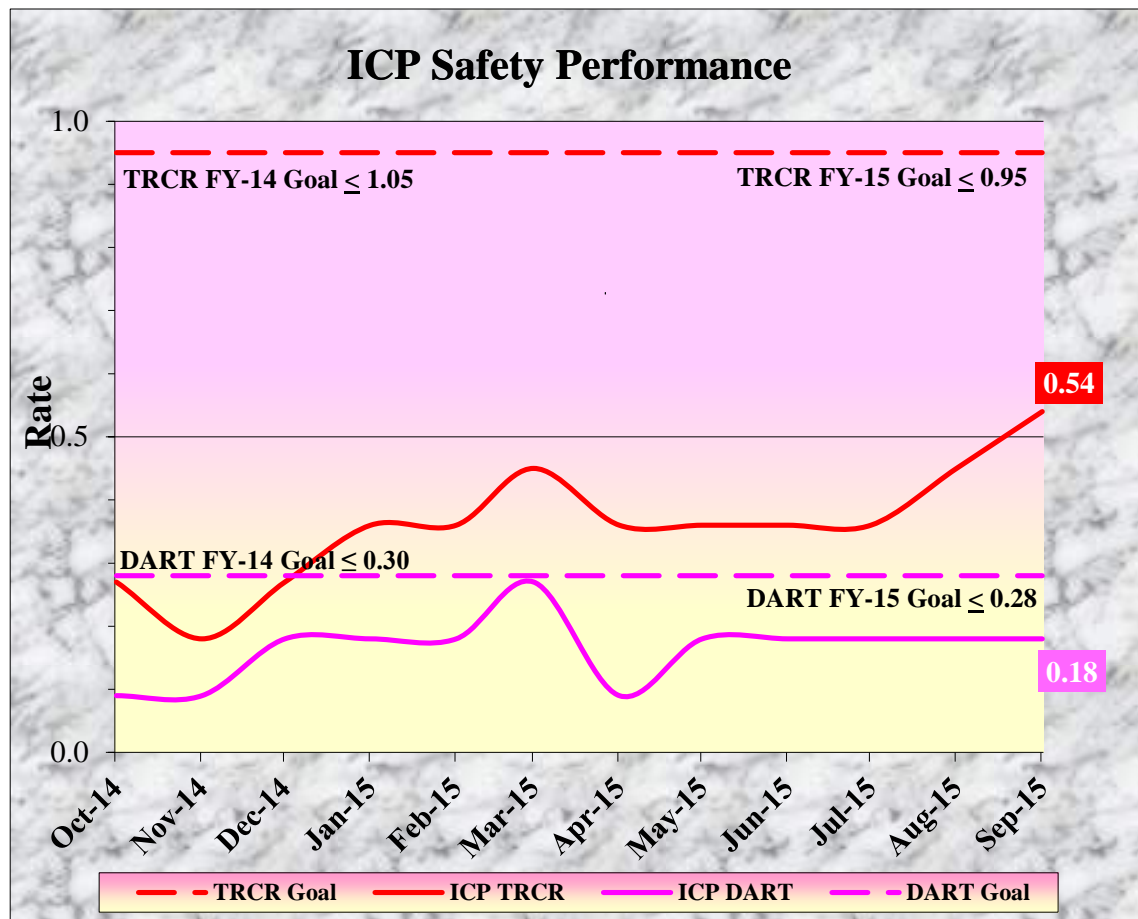
- Transuranic Waste Disposition
- Advanced Mixed Waste Treatment Project (AMWTP)
- Comprehensive Environmental Response Compensation Liability Act (CERCLA) Remediation
  - Waste Area Group (WAG) 1 – Test Area North (TAN)
  - Waste Area Group (WAG) 2 – Test Reactor Area (TRA) - **Complete**
  - Waste 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 – September 2015

(Information and Data through September 30, 2015)



## August 2015

### Two First Aid Cases and One Recordable Injury:

- Ironworker Struck in Mouth While Installing Rebar, Chipping a Tooth at IWTU.

### Two ORPS Reportable Occurrences:

- Electric Shock While Checking an Air Sampler
- Positive USQ – Interaction of Stored Waste (in TAA) With Off-Gas Piping

## September 2015

### No First Aid Cases and One Recordable Injury:

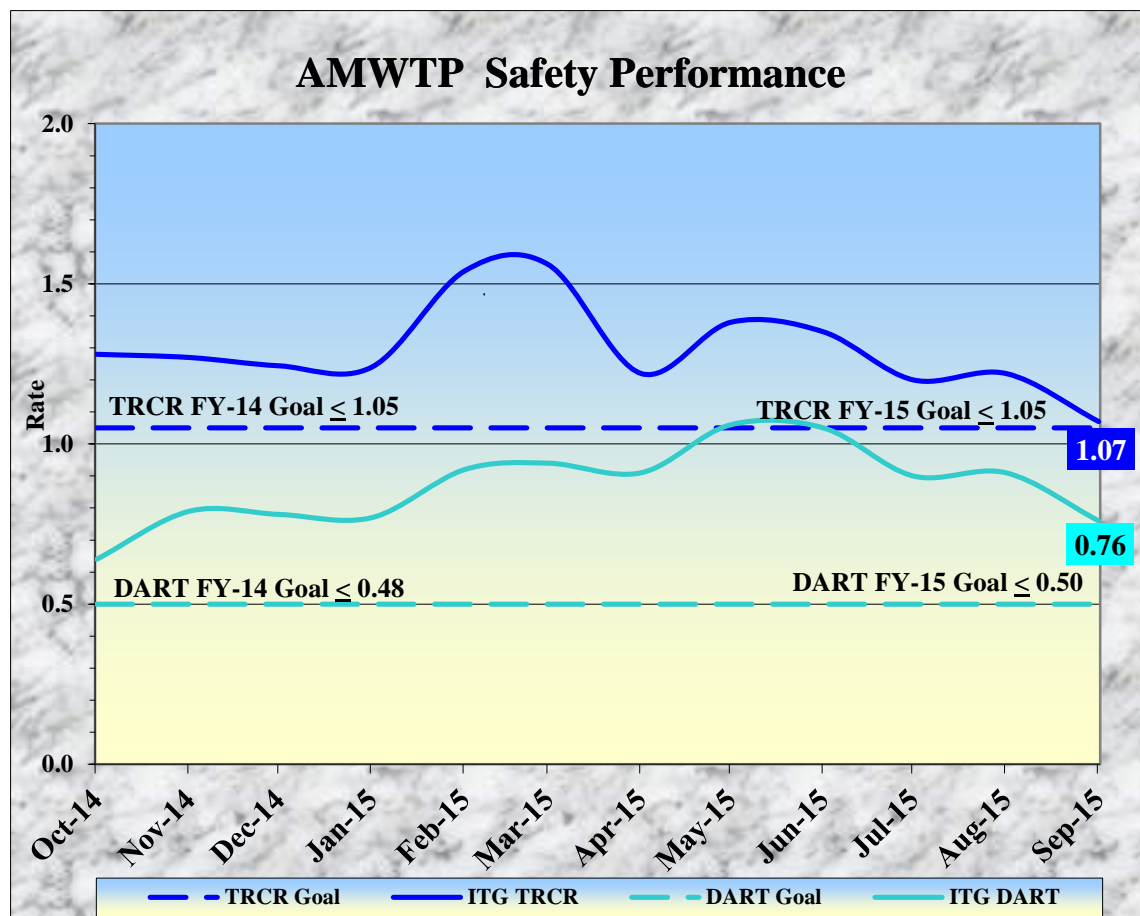
- Worker Lacerated on the Head When Enclosure Cover Fell Shut; 4 Stitches

### Two ORPS Reportable Occurrences

- Electric Shock While Plugging in a Manipulator
- Failed Filter Bundle in IWTU Off-Gas Filter (Management Concern)

# Safety Performance – September 2015

(Information and Data through September 30, 2015)



## August 2015

**No First Aid Cases and No Recordable Injuries**

### Three ORPS Reportable Occurrences

- PISA - Propane System Vapor Cloud
- Radiological Contamination Detected in Secondary Containment Basin
- Inadequate Respiratory Protection in an Airborne Radioactivity Area (Management Concern)

## September 2015

**No First Aid Cases and One Recordable Injury:**

- Operator lacerated left index finger with box cutter while breaking down cardboard boxes, requiring 4 stitches

### One ORPS Reportable Occurrence:

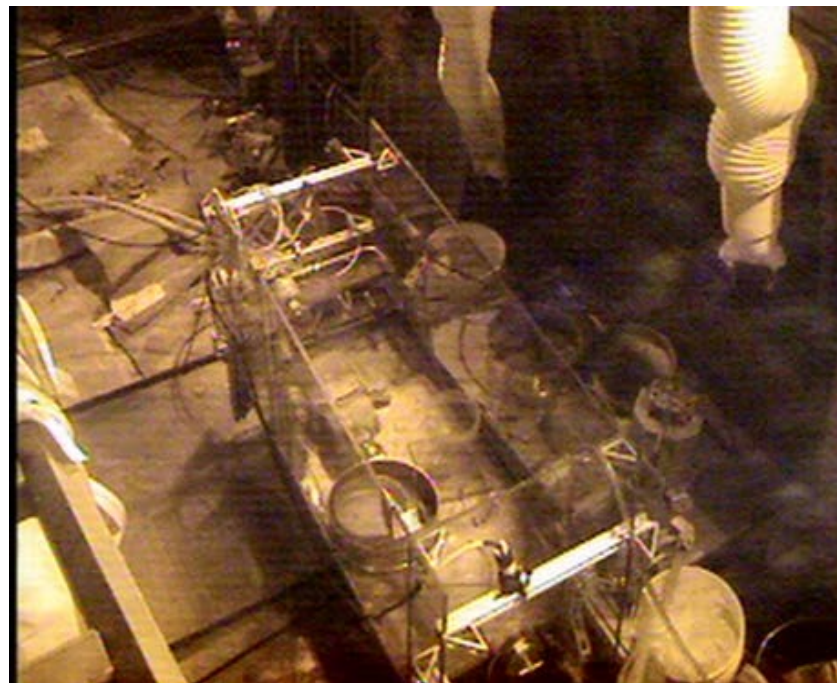
- Working Without Fall Protection (Management Concern)



# Remote-Handled Transuranic Waste Disposition

## Key Activities/Actions:

- Remote-handled transuranic waste shipments are on hold until WIPP re-opens.
- Completed and modified new distillation system August, 2015. Worked 7 days per week, 24 hours per day, completing six distillation runs.
- Use of Argonne Repack Station in CPP-659 reduced waste needing sodium distillation by 80 percent.
- Remaining EM RH-TRU waste to meet Idaho Settlement Agreement:
  - Approximately 25 cubic meters.
  - 6 waste streams submitted and pending approval and 6 are planned for review and approval starting in FY 16.
  - All ISA RH-TRU has completed initial repackaging and are in storage awaiting approvals.



Argon Repackaging Station in CPP-659

# 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.
- 4.17 cubic meters of 4.17 cubic meters planned for treatment in FY15 is complete as of 9/25/15.
- 61 shipments of RH-TRU waste certified and ready to ship to WIPP.

## Activity Status:

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



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 are on hold until WIPP resumes operations.
- Through September 30, 2015, AMWTP operations have shipped over 51,035 cubic meters of Idaho Settlement Agreement waste (of approximately 65,000 cubic meters) out of Idaho.
- 717 shipments of waste certified for shipment to WIPP.

## Upcoming Activities:

- Complete certification of box assay system 3<sup>rd</sup> Quarter 2016.
- Complete CCP transition to AMWTP for visual exam and assay 1<sup>st</sup> Quarter 2016.
- Initiate Infrastructure Improvements 1<sup>st</sup> Quarter 2016.



# Advanced Mixed Waste Treatment Project

TSA-RE Pad 1 Cell 1 and  
Cell 2 Drum Face February 2015



## Key Activities RETRIEVAL and CARGO/Actions:

- Emptied 29 of 104 cargo containers.
- Continued retrieving waste from Pad 1 Cell 1, the final cell with waste containers.
- Commenced Phase II of transfer soil sacks and empty cargo containers to ICDF.
- Completed removal of fire break soil.

TSA-RE Pad 1 Drum Face September 2015



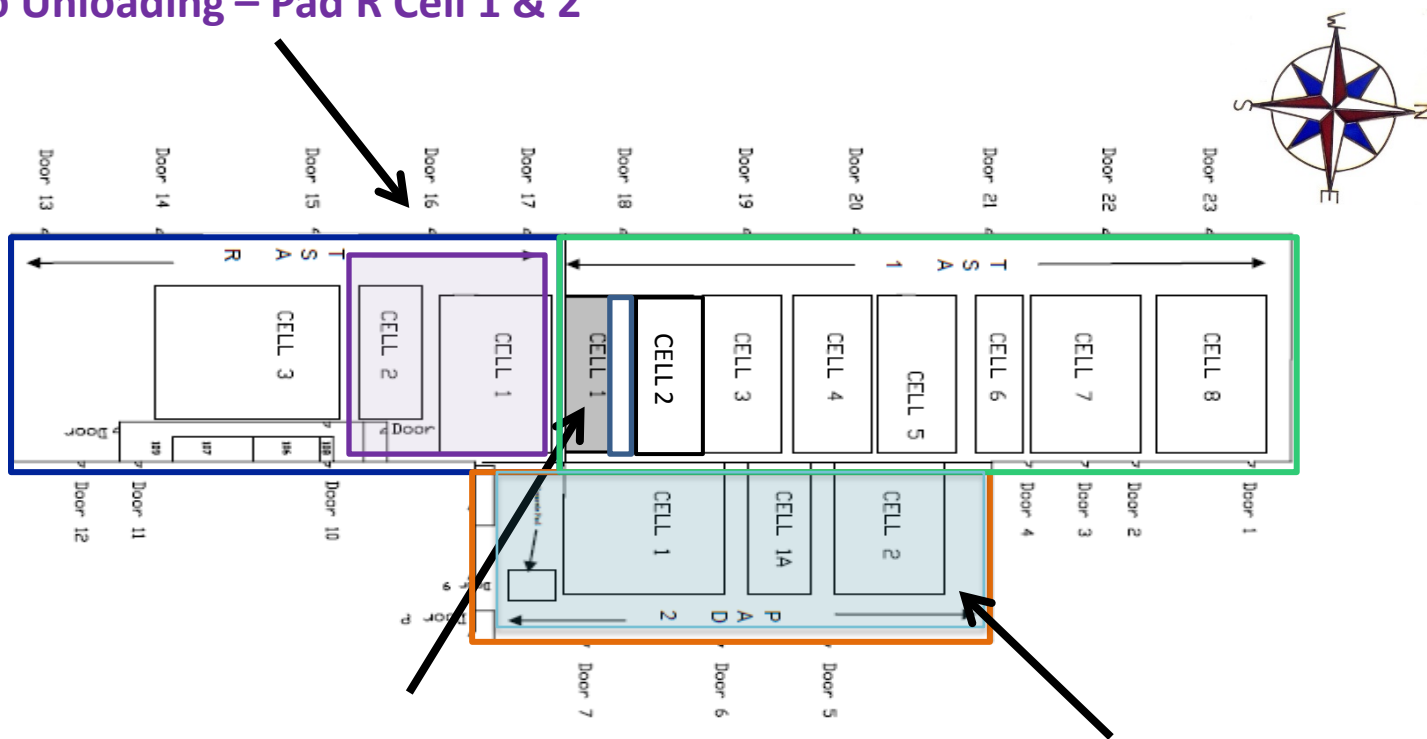
## Upcoming Activities:

- Accelerate Retrieval.
- Continue Phase II of transferring soil sacks and empty cargo containers to ICDF.

# Transuranic Storage Area-Retrieval Enclosure (TSA-RE) Floor Plan

Cargo Unloading – Pad R Cell 1 & 2

Pad 1  
Pad 2  
Pad R



Location of remaining waste in Cell1 of Pad 1  
Thirteen cells have been retrieved.

Repurpose for WIPP  
certified container storage.

# CERCLA Remediation Project Objectives

- 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 3.94 acre as of Oct. 1, 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**



# CERCLA Remediation – WAGs 1, 3, and 10

## Key Activities/Actions:

- WAG 1 – Completed drilling two injection/monitoring wells at Test Area North.
- WAG 10 -Continue work on the CERCLA 5-Year Review.
- Completed revision of CERCLA Community Involvement Plan.

## Ongoing Activities:

- WAG 1 – Sample two new injection/monitoring wells at Test Area North.
- WAG 1 - Continue In situ-Bioremediation rebound test.
- WAG 3 - Continue perched water monitoring and groundwater recharge controls at INTEC.
- WAG 10 - Submit Five-year review report.
- WAG 10 - Continue monitoring and institutional controls.
- WAG 10 - Continue progress on New Site evaluation/remediation.



USGS and CWI well drilling team at Test Area North, August, 2015



# Idaho CERCLA Disposal Facility (ICDF)

## Key Activities/Actions:

- FY 2015 - Received 24,625 gallons of liquid for disposal to evaporation ponds as of 09/29/2015.
- FY 2015 - Received a total of 3,433 cubic meters of solid waste for landfill disposal
  - Phase II AMWTP (FY 2015 to date): Received and grouted 29 or 54 planned cargo containers and 198 of 300 soil sacks.

## Ongoing Activities:

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



Sampling ICDF Evaporation Pond,  
September 23, 2015

ICDF evaporation pond - April 2015

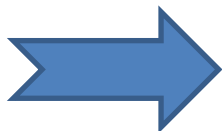
## Status of Five-Year Review

- Draft submitted to Agencies 4Q, 2015.
- Draft Final will be submitted to Agencies 1Q, 2016.
- CAB briefing scheduled for 2Q, 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.

# Balance of CERCLA (WAGs 1, 3, & 10) Dashboard

Key Questions	Dashboard Indicator	Comments
Percent of project completed	100% 	Project completed fiscal year on schedule.
Percent of budget expended	66% 	Project completed fiscal year 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: .644 acre out of 1.72 acres have been exhumed as of 9/30/15.
  - ARP IX: Design and foundation construction -- **completed**
  - ARP I & VI D&D - **completed**
- Complete in situ grouting of 21 locations - **completed**
- Subsurface solvent vapor extraction (OCVZ)
- Environmental monitoring and institutional controls

## Key Activities/Actions:

- Continued ARP VIII waste exhumation. As of Sept. 23, 2015, CWI had completed the 0.81 acre (0.51 acre of the contract scope, plus 0.30 acre) required by the contract by 9/30/15.
- ARP IX design and foundation construction complete.
- Since 1996, 242,860 pounds of TVOC removed using vapor extraction as of 9/30/15.

## Non-CERCLA Activities:

- Continued ARP V repackaging AMWTP sludge waste. 1050 drums and 24 boxes have been repackaged as of 9/30/15.

## Ongoing Activities:

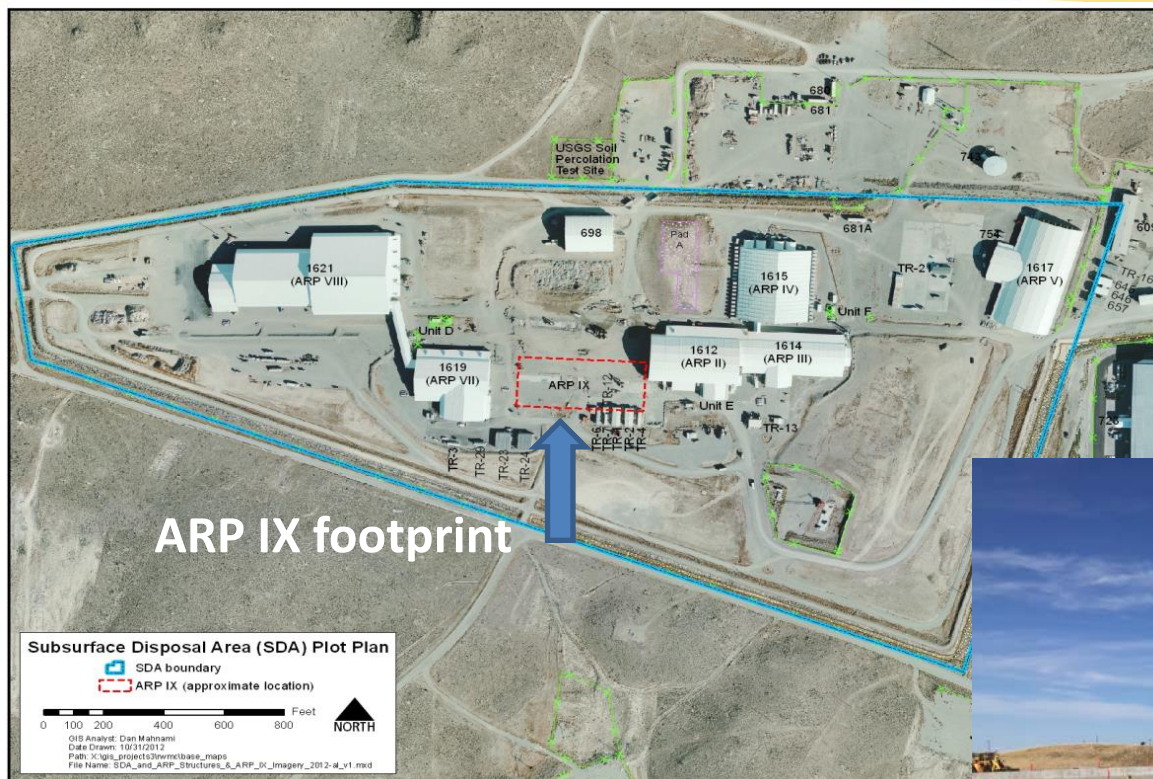
- Continue to exhume targeted buried waste in ARP VIII.
- Continue AMWTP sludge repackaging in ARP V.
- Complete ARP IX facility construction.
- Continue organic vapor extraction.

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



ARP VIII exhumation



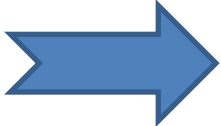



# CERCLA Remediation - WAG 7 - ARP IX Foundation Construction



ARP IX Foundation



# WAG 7 Dashboard

Key Questions	Dashboard Indicator	Comments
Percent of project completed	100% 	For FY15, all of original scope, <b>PLUS</b> added scope of .3 acre, was completed.
Percent of budget expended	71% 	Project completed FY15 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 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	Wells complete.
WAG 3 (INTEC)	Interim INTEC Tank Farm Cover Phase <ul style="list-style-type: none"> <li>Phase A (western 2/3)</li> <li>Phase B (eastern 1/3)</li> </ul>	<ul style="list-style-type: none"> <li>FFA/CO Regulatory</li> <li>FFA/CO Regulatory</li> </ul>	<ul style="list-style-type: none"> <li>Submit RA Report by 11/30/2017(on track)</li> <li>Submit RA Report by 11/30 of first field season after tank farm closure (on track)</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> <li>N/A</li> </ul>
WAG 3 (INTEC)	Final Tank Farm Evapo-transporation cover	FFA/CO Regulatory	After INTEC Closure	N/A

# CERCLA 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 (completed)	.3 acres added to CWI contract
WAG 7 (RWMC)	Complete ARP IX Design and Foundation construction	Contract baseline	9/30/15 (completed)	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 completed .81 acre in FY 15.
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 (completed)	Draft report submitted.

Milestone Title	Milestone type	Milestone Date	FY2015
Repackage 1050 drums and 16 boxes	Contract baseline	9/30/15 (accomplished)	1050 drums and 21 boxes were processed and repackaged

**Note:**

June 30, 2015, the baseline was modified to 1050 drums and 16 boxes as more drums were identified for the process.

# Spent Nuclear Fuel Disposition Project

## Key Activities/Actions:

- Completed 6 of 6 EBR-II SNF Shipments to MFC.
- Received 15 of 15 ATR shipments in the CPP-666 basin.
- Completed CPP-666 resin change out.

## Upcoming Activities:

- Continue ATR and EBR-II SNF fuel transfers.
- Continue to prepare Three Mile Island's NRC license renewal application.


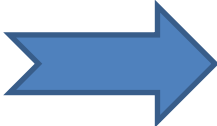




Metric	FY 15Baseline
Ship Advanced Test Reactor fuel	15 ATR
Ship EBR-II	6 EBR II



Spent Resin Cask Shipment



# Dashboard Summary – Spent Nuclear Fuel Disposition Project

Key Questions	Dashboard Indicator	Comments
Percent of project completed	100% 	The project is primarily a LOE activity (70%) supporting fuel transfers. Due to operational considerations at other INL facilities, some fuel transfer activities (ATR and EBR-II) were delayed. Resin change-out in CPP-666 completed.
Percent of budget expended	69 % 	Finished fiscal year under budget.
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.

# D&D – Materials and Fuels Complex

## Completed Activities/Actions:

- Completed steam treatment of 9 of 9 MFC-766 heat exchangers and super heaters.
- Completed D&D of MFC-799 (Sodium Processing Building).
- Completed demo preps for MFC-766 (Sodium Boiler Building).

## Ongoing Activities:

- Final D&D of MFC-766.
  1. Remove and dispose of heat exchangers.
  2. Demolition of structure.
  3. Gravel cover.
- Demo Preps for MFC-767 (EBR-II reactor plant building), including removal of the overhead crane. Completion planned by end of FY 16.



Top: Final cap of grout placed on MFC-766 control rod drive mechanism pit.

Bottom: Interior view of MFC 767 heat exchanger (Evaporator 703) after steam treatment.

## Demolition Begins of MFC-766 (Sodium Boiler Building)



Demolition began Oct. 5, 2015 and should be completed by March, 2016.





# Revision to General Action Memo



Light-duty utility arm that had been used to sample tank farm



Backhoe that had been used in numerous CERCLA remedial actions



Scissor lifts that had been used in various D&D projects



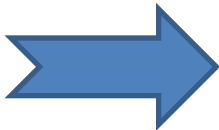
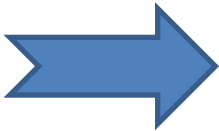
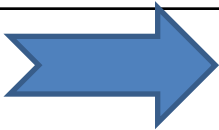



Processor head that had been used in various D&D projects







The General Action Memorandum was revised in June, 2015 with approval by EPA and DEQ to allow disposal of radioactively contaminated equipment.



# Dashboard Summary – MFC D&D

Key Questions	Dashboard Indicator	Comments
Percent of project completed	100% 	The project is on track for early completion, 9 of 9 MFC-766 heat exchangers treated, EBR-II grouting was completed.
Percent of budget expended	85% 	Completed fiscal year under budget.
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.
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		With exception of IWTU, on, or 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 delay, WIPP closure impacting milestones.
Impact on safety and environment		Project is exceeding the safety goals established.
Impact on cleanup DOE-wide		No outstanding impacts.