



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# Idaho Cleanup Project Progress to Date Citizens Advisory Board

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Idaho Cleanup Project

**February 17, 2016**

# Idaho Cleanup Project Scope

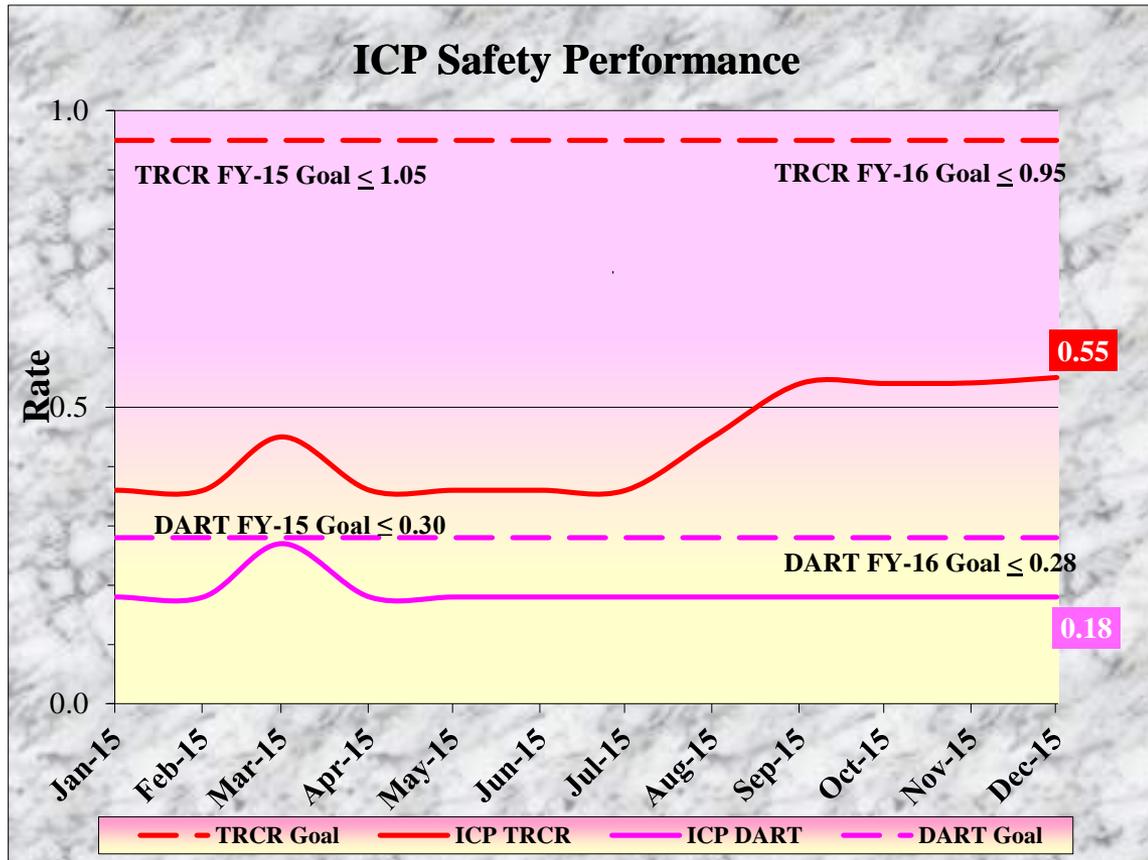
- Transuranic Waste Disposition
- Advanced Mixed Waste Treatment Project (AMWTP)
- Comprehensive Environmental Response Compensation Liability Act (CERCLA) Remediation
  - Waste Area Group (WAG) 1 – Test Area North (TAN)
  - Waste Area Group (WAG) 2 – Test Reactor Area (TRA) - **Complete**
  - Waste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

(Information and Data through December 31, 2015)



## November 2015

**One First Aid Case and No Recordable Injuries**

### One ORPS Reportable Occurrence:

- Tool suspended from crane contacts pool appendage

## December 2015

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

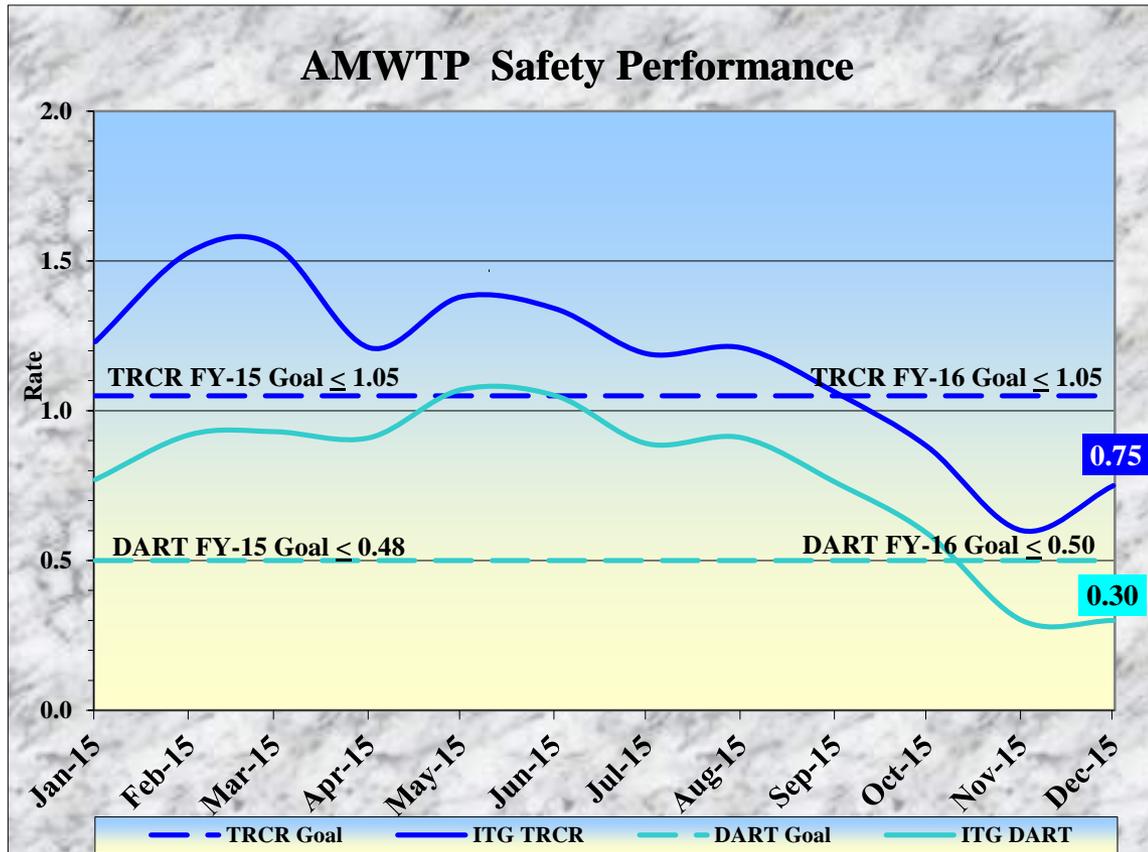
- Operator ascending stairs sprained ankle

### One ORPS Reportable Occurrence:

- Potential Inadequacy in the Safety Analysis (PISA)/Positive Unreviewed Safety Question (USQ) for number of EBR II SNF elements found stored in container

# Safety Performance – November-December 2015

(Information and Data through December 31, 2015)



## November 2015

**One First Aid Case and No Recordable Injuries**

## One ORPS Reportable Occurrence

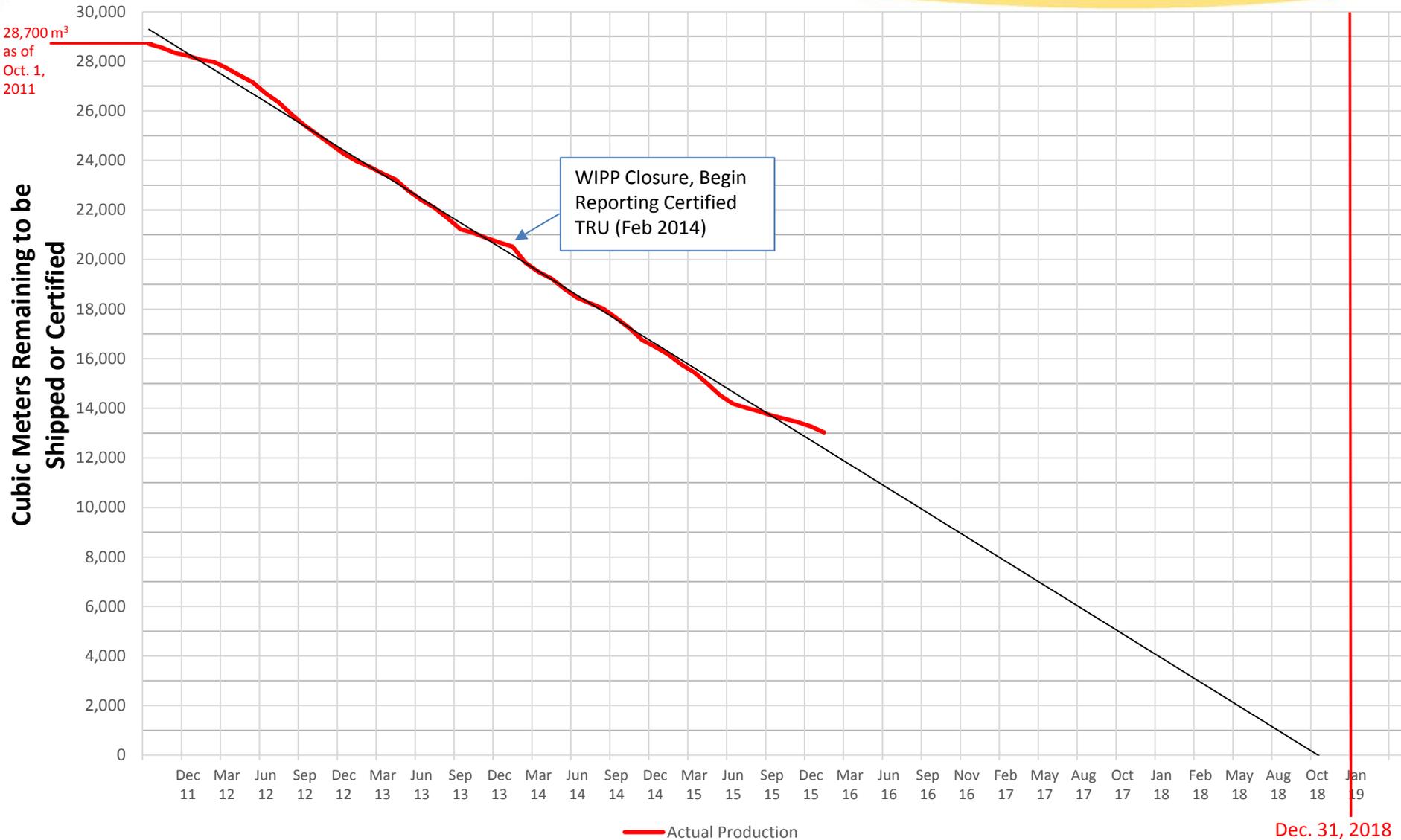
- Lock and Tag violation: worker enters area in box line beyond planned work scope

## December 2015

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

**No ORPS Reportable Occurrences**

# Idaho Settlement Agreement Work-off Status



# Waste Programs Overview

## Idaho TRU Certified Backlog

- 19,403 Containers
- 765 CH-TRU shipments
- 90 RH-TRU shipments

## MLLW Key Activities/Actions:

- CWI completed two shipments of U-233 Idaho Settlement Agreement waste
- ITG commenced campaign to ship 149 m3 of legacy salts for treatment and disposal at Energy Solutions.

## MLLW Upcoming Activities:

- Continue shipment of U-233 as cask is available
- Continue shipment of legacy salts
- Continue shipment of legacy debris

	Certified Containers	Shipments
<b>CH-TRU Waste</b>		
Product Drums	3,215*	215
Direct Ship	1,707*	91
SWB's	8	2
SRP Drums	10,052	335
Buried Waste	4,260	122
CH-TRU Total	19,242	765
<b>RH-TRU Waste</b>		
Drums	161	90

\* Includes containers in pre-subcertified status that require Flammable Gas Analysis prior to certification.



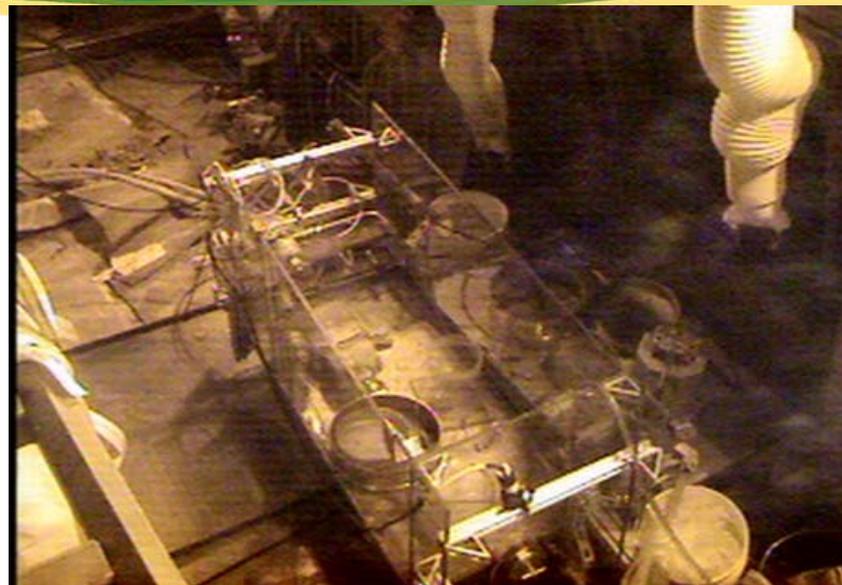
Left: U-233 Waste being Loaded into a 10-160B Cask.  
Right: U-233 Waste Ready to be Shipped out of Idaho.



# Remote-Handled Transuranic Waste Disposition

## Key Activities/Actions:

- Completed initial treatment of all ISA RH-TRU
- Remote-handled transuranic waste shipments are on hold until WIPP re-opens.
- Activity Status
  - Continue processing waste stream approvals for ISA waste.
  - Continue preparations for Navy waste stream.
- Remaining EM RH-TRU waste to meet Idaho Settlement Agreement:
  - Approximately 25 cubic meters.
  - 6 waste streams submitted and pending approval.
  - Waste stream approval needed prior to certification



Above: Argon Repackaging Station

Below: Thermal Image During Sodium Treatment



# Advanced Mixed Waste Treatment Project



Above: Loading MLLW product drums in macro-encapsulation bag

Below: Senator Risch's staff viewing supercompactor



## Key Activities/Actions:

- Contact-handled transuranic waste shipments are on hold until WIPP resumes operations.
- 765 Shipments of CH TRU have been certified for shipment to WIPP\*.
- Shipment of 149 m<sup>3</sup> of LLW/MLLW off-site in support of ISA milestone as of Feb. 1, 2016.

*\* Includes containers in pre-subcertified status that require Flammable Gas Analysis for DOT Transport prior to certification.*

## Upcoming Activities:

- Complete CCP transition to AMWTP for visual exam and assay 2<sup>nd</sup> Quarter 2016.
- Initiate Infrastructure Improvements 2<sup>nd</sup> Quarter 2016.
- Continue work on chemical compatibility requirements with WIPP.

# Advanced Mixed Waste Treatment Project

TSA-RE Pad 1 Drum Face September 2015



## Key Activities RETRIEVAL and CARGO operations:

- Retrieved about 350 m3 as of 1/24/16.
- Emptied 36 of 104 cargo containers.
- Continued retrieving waste from Pad 1 Cell 1, the final cell with waste containers.
- Deployed second crew to increase retrievals to 4 dives/day (1/27/16).

## Upcoming Activities:

- Continue Phase II of transferring soil sacks and empty cargo containers to ICDF.
- Empty an additional 11 cargo containers by March 31, 2016

TSA-RE Pad 1 Drum Face January 2016



Yellow arrow, pointing to same drums in both September and January shows progress of drum removal.

- 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 4.02 acres as of Jan. 4, 2016)**
  - 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 – Began ISB injections into new injection/monitoring well at Test Area North.
- WAG 10 -Completed the CERCLA 5-Year Review.

## Ongoing Activities:

- WAG 1 - Continue In situ-Bioremediation rebound test.
- WAG 3 - Continue perched water monitoring and groundwater recharge controls at INTEC.
- WAG 10 - Continue monitoring and institutional controls.
- WAG 10 - Continue progress on New Site evaluation/remediation.



Top: Injection facility; Bottom: New well – TAN 2271.



## Key Activities/Actions:

- 1Q FY16 - Received 6,744 gallons of liquid for disposal to evaporation ponds as of 12/31/2015.
- 1Q FY16 - Received a total of 70 cubic meters of solid waste for landfill disposal
  - MFC debris with asbestos (56 m<sup>3</sup>)
  - INTEC WAG 3 waste soil and debris (14 m<sup>3</sup>).

## 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.

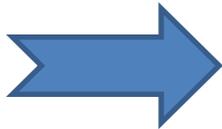


Flood grouting of MFC heat exchangers November, 2015

# Dashboard Legend



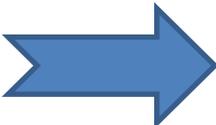
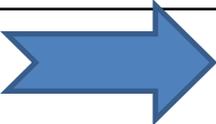
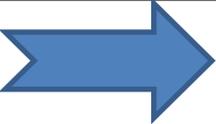
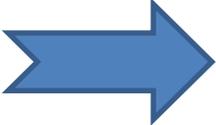
Ahead of schedule, under budget, better than expected.



On schedule, on budget, performance as expected.



Behind schedule, over budget, performance less than expected.

Key Questions	Dashboard Indicator	Comments
Percent of project completed	50% 	As of Dec. 30, 2015 project on schedule.
Percent of budget expended	43% 	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.

- 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: .741 acres out of 1.72 acres have been exhumed as of 1/4/16.
  - 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. 0.74 acres have been exhumed as of Jan. 4, 2016.
- ARP IX design and foundation construction complete.
- Since 1996, 243,205 pounds of TVOC removed using vapor extraction as of Jan. 4, 2016.

## Non-CERCLA Activities:

- Continued ARP V repackaging AMWTP sludge waste. 1140 drums and 60 boxes have been repackaged as of 1/4/16 (since March 2, 2015).
- Initiated AMWTP debris repackaging process in ARP VII.

## Ongoing Activities:

- Continue to exhume targeted buried waste in ARP VIII.
- Continue AMWTP sludge repackaging in ARP V.
- Continue AMWTP debris repackaging in ARP VII
- Put small business contract in place for ARP IX construction.
- Complete ARP IX facility construction.
- Continue organic vapor extraction.

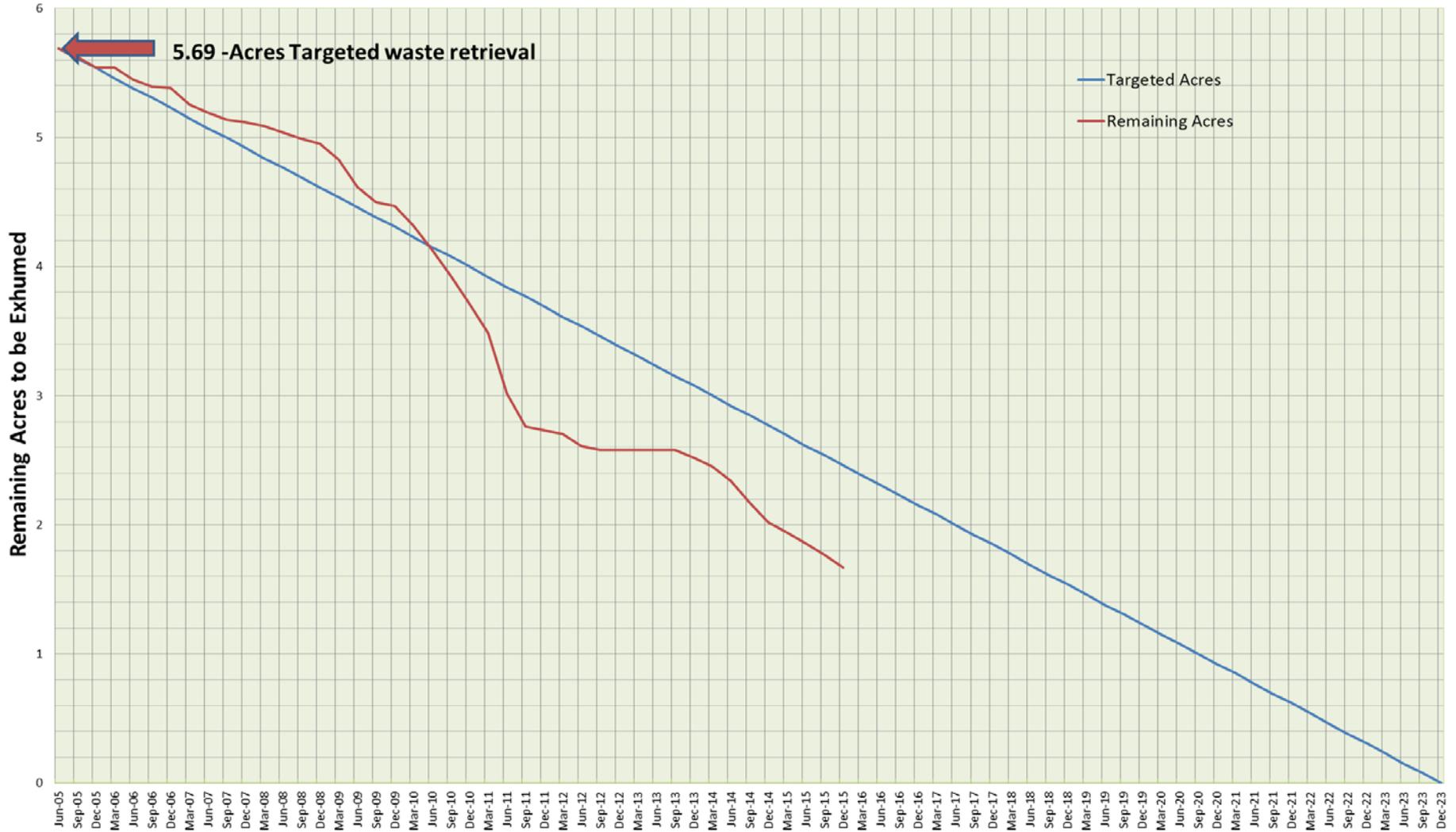
Metric	Baseline
Exhume targeted buried waste	0.35 acres by 9/30/16



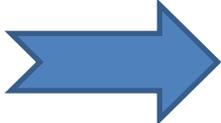
ARP VIII exhumation

# Buried Waste Exhumation Work-off Chart

SDA - Current Exhumation Status



# WAG 7 Dashboard

Key Questions	Dashboard Indicator	Comments
Percent of project completed	23% 	As of Dec., 2015, the project is on schedule.
Percent of budget expended	22% 	Project is under budget.
Impact on employment/economic development		Project is expected to continue with same level of employment for several years.
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/debris repackaging in ARP V/VII

# CERCLA Progress

Waste Area Group (WAG)	Milestone Title	Milestone type	Milestone Date	FY2016
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 March 30, 2017 (on track)</li> <li>Submit RA Report by Nov. 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-transpiration cover	FFA/CO Regulatory	After INTEC Closure	N/A

# CERCLA Progress (continued)

Waste Area Group (WAG)	Milestone Title	Milestone type	Milestone Date	FY2016
WAG 7 (RWMC)	Exhume .35 acres of targeted buried waste	DOE Fiscal Year Work Plan goal	9/30/16	FY 2016 goal
WAG 7 (RWMC)	Complete ARP IX construction	Contract commitment	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	N/A
WAG 7 (RWMC)	Completed SDA final Cover construction	FFA/CO Regulatory	12/31/2028	N/A

Milestone Title	Milestone type	Milestone Date	FY2016
Repackage up to 1,380 drums and 40 boxes sludge waste, 12 boxes debris waste and 10 drums roaster oxides	DOE Fiscal Year Work Plan goal	9/30/16	170 drums and 36 boxes have been processed and repackaged so far during FY2016

## Completed Activities/Actions:

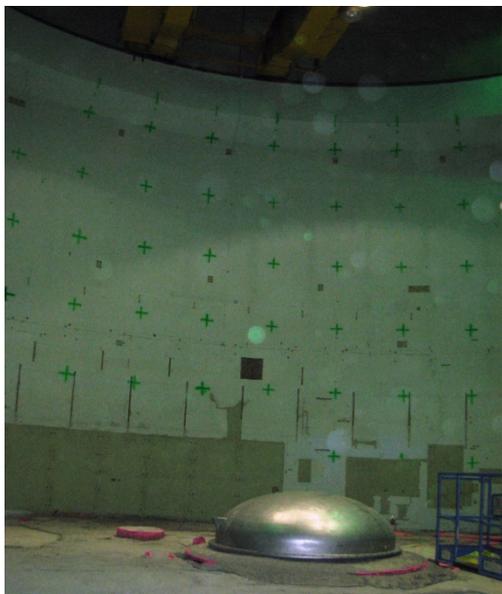
- Completed Demolition of MFC-766 (Sodium Boiler Building).
- Continuing Demo Preps for MFC 767 (EBR-II Reactor Building).
  - Completed interior clean out.
  - Perform radcon surveys.
  - Preparing to demo the polar crane.
  - Mock-Up of the Hydro Lance System for D&D of the EBR-II dome.



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

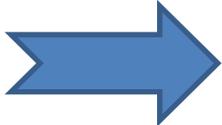
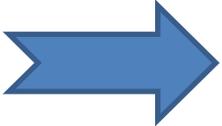
Bottom: Interior view of MFC 767 heat exchanger (Evaporator 703) after steam treatment.

## D&D – Materials and Fuels Complex (continued)

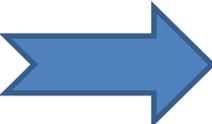
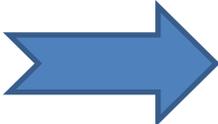
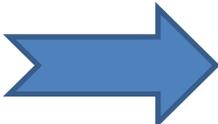
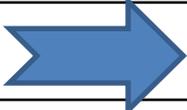


Top left: MFC 767 interior; top right: completed demolition of MFC-766; left: interior of EBR-II.

# Dashboard Summary – MFC D&D

Key Questions	Dashboard Indicator	Comments
Percent of project completed	71% 	D&D is ahead of schedule for contract period.
Percent of budget expended	56% 	Under budget for the contract period.
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-767.
Affect on agreements		Project is meeting its regulatory commitments. Project completed RCRA closure of MFC 766.
Impact on safety and environment		D&D operations were performed safely 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.