



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# Idaho Cleanup Project Program Citizens Advisory Board **CERCLA INPUT**

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Idaho Cleanup Project

**April 8, 2015**

# Idaho Cleanup Project Scope

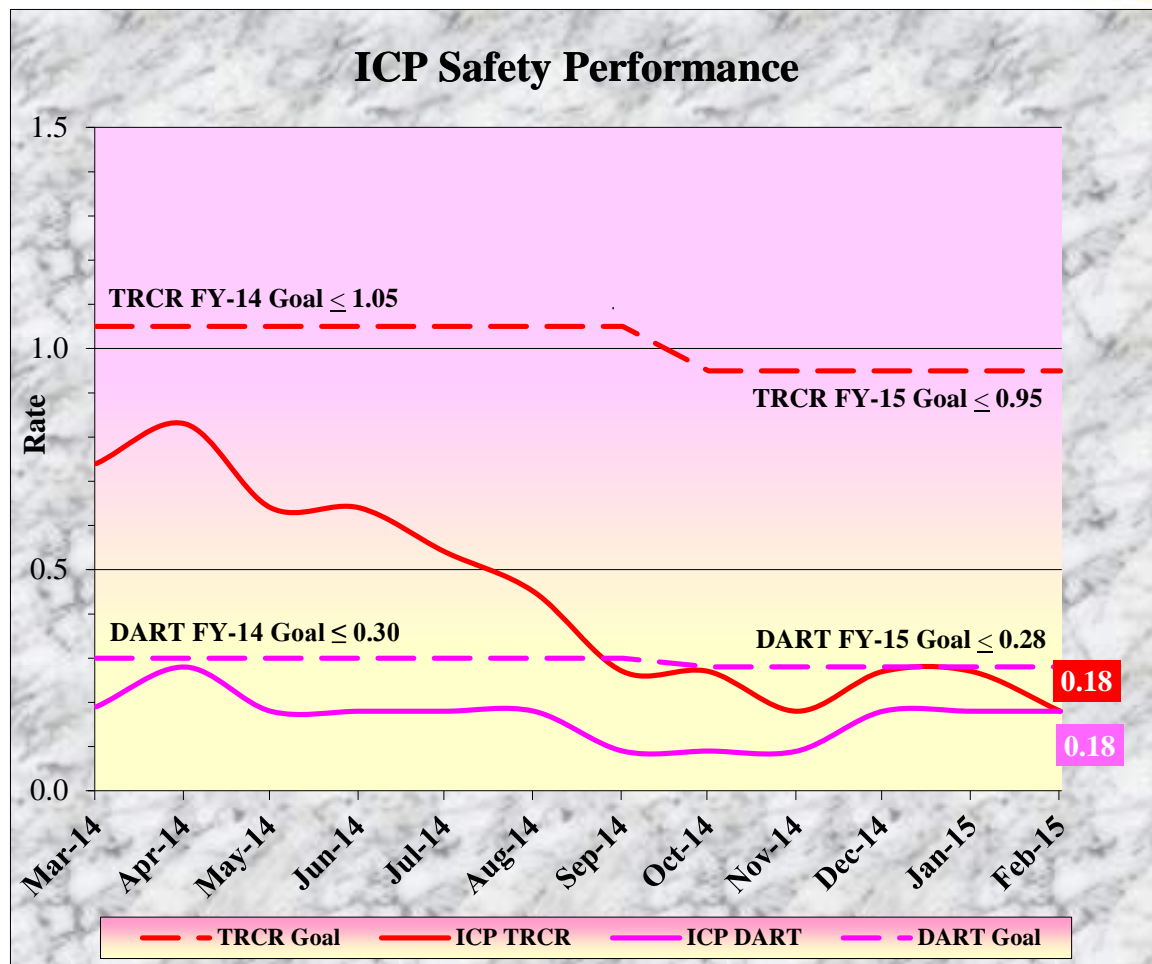
- Transuranic Waste Disposition
- Advanced Mixed Waste Treatment Project (AMWTP)
- Comprehensive Environmental Response Compensation Liability Act (CERCLA) Remediation
  - Waste Area Group (WAG) 1 – Test Area North (TAN)
  - Waste Area Group (WAG) 2 – Test Reactor Area (TRA) - Complete
  - Waste Area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

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

# Safety Performance – March 2015

## (Information and Data through February 22, 2015)



### January 2015

Two First Aid Cases and No Recordable Injuries

No ORPS Reportable Occurrences

### February 2015

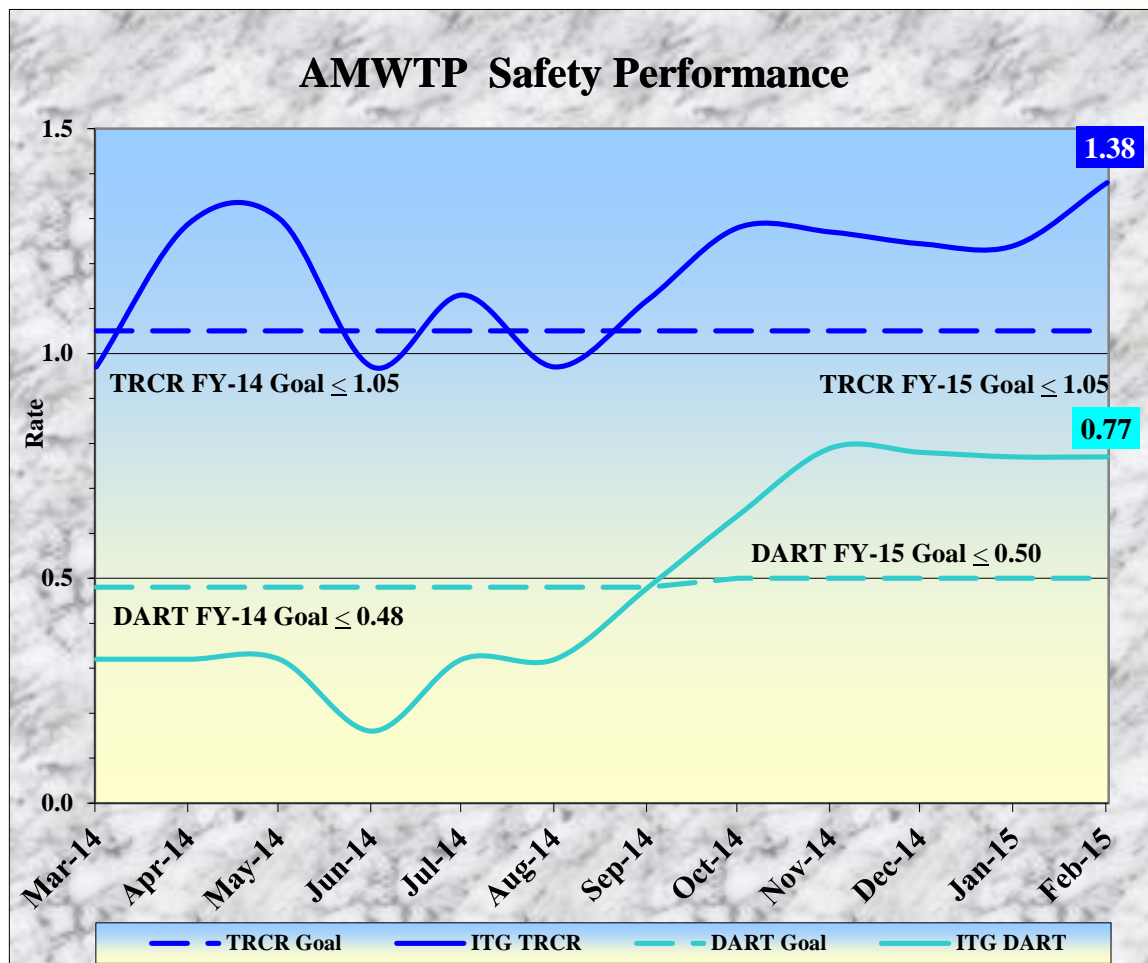
Three First Aid Cases and No Recordable Injuries

One ORPS Reportable Occurrence:

- IWTU Positive USQ-Inadequate Controls Identified For Process Off-Gas System Components

# Safety Performance – March 2015

## (Information and Data through February 22, 2015)



### January 2015

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

**No ORPS Reportable Occurrences**

### February 2015

**One First Aid Case and One Recordable Injury:**

- Worker Cut Hand With Utility Knife Requiring Surgery

**Two ORPS Reportable Occurrences:**

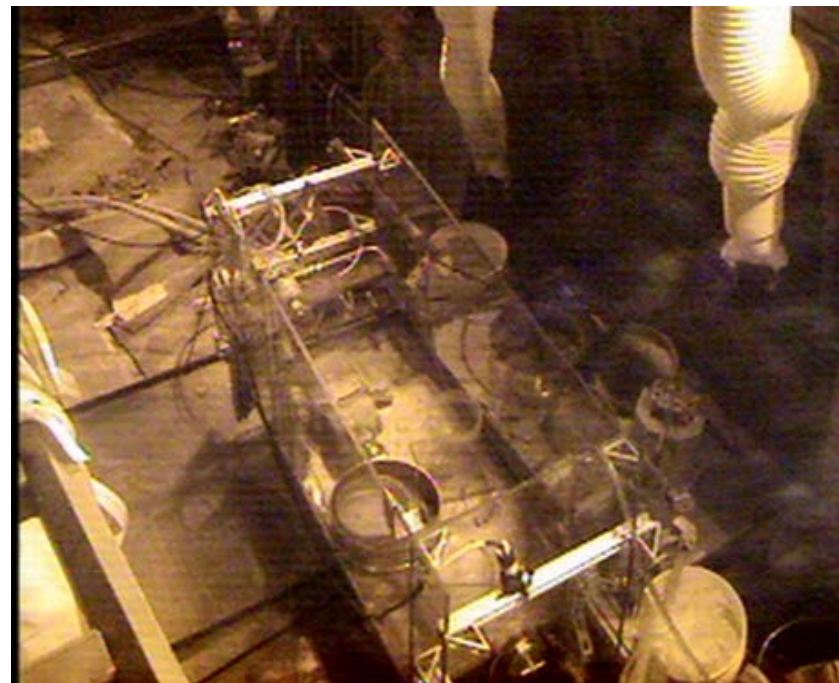
- AMWTP – Box Line CO2 Fire Suppression System Inoperable
- AMWTP – WMF-630 West Rollup Door Inadvertently Falls Shut



# Remote-Handled Transuranic Waste Disposition

## Key Activities/Actions:

- Remote-handled transuranic waste shipments are on hold until WIPP re-opens.
- Efforts to clear Sodium distillation system blockage were unsuccessful.
- Completed recovery of CPP-659 after contamination event (more detail to follow later today).
- 6 waste streams are submitted and pending approval and 6 waste streams are planned for review and approval starting in FY 2015



Argon Repackaging Station in CPP-666

# Remote-Handled Transuranic Waste Disposition (cont.)

## RH-TRU Project Status:

- 132.51 cubic meters of ISA RH-TRU waste has been treated by the project to date.
- 1.0 cubic meters of 4.17 cubic meters planned for treatment in FY15 is complete as of 3/2/15.
- 11.0 cubic meters of RH-TRU waste is 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 Argon station is CPP-659.

## Remaining EM RH-TRU waste to meet ISA:

- Approximately 25 cubic meters.

## Upcoming Activities:

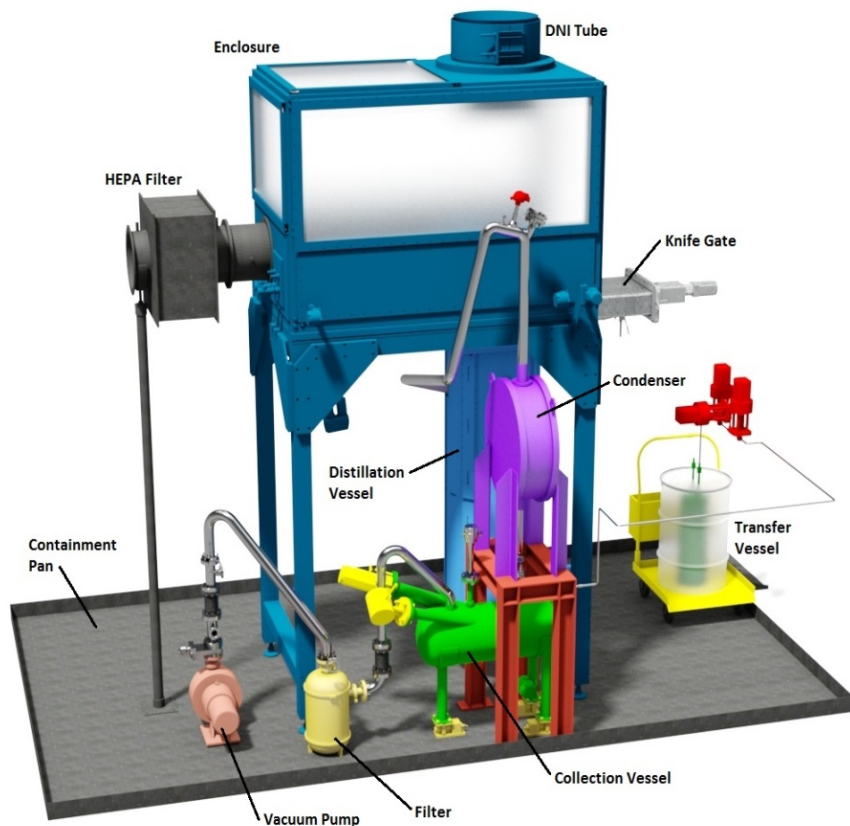
- Installation of Argon Repackaging Station in CPP-659 by May 2015.
- Upgrades to Sodium distillation system completed by August 2015.
- Complete processing of all ISA RH-TRU waste by the end of FY 2015.



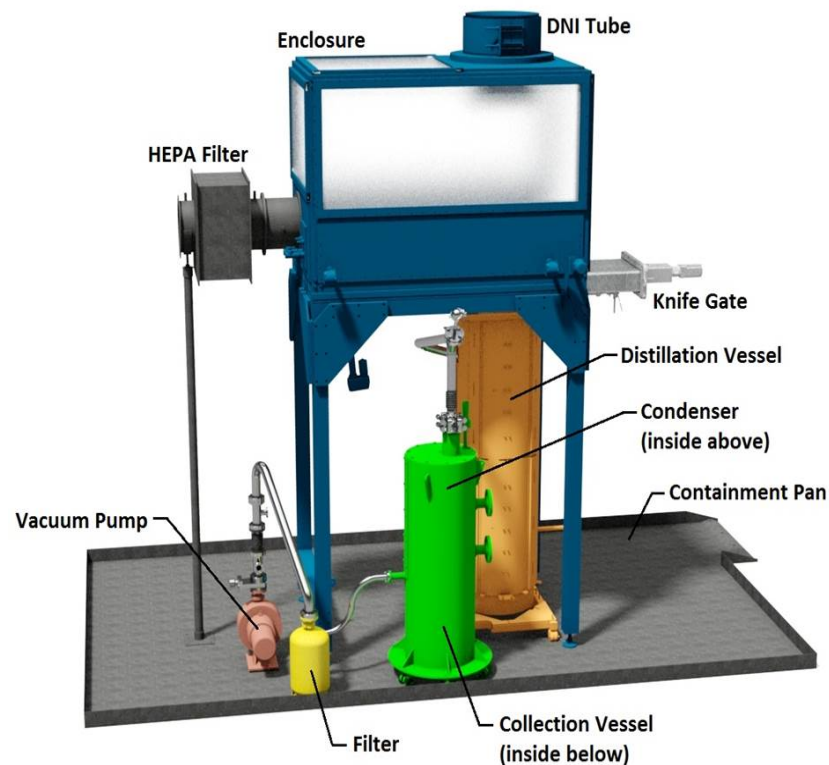
Repackaging Operations in CPP-659

# Sodium Distillation System Upgrades

Existing System as currently installed



Designed Upgrade to the System





# 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 re-opens.
- Through March 14, 2015, AMWTP operations have shipped over 51,035 cubic meters of Idaho Settlement Agreement waste out of Idaho.
- Commenced treatment and shipment of mixed low-level waste using Macro Bags on January 21, 2015.
- Resumed operations in the third box line on January 20, 2015.

## Upcoming Activities:

- Complete startup of aerosol can venting in AMWTF 3rd Quarter 2015.
- Complete TSA-RE Storage reconfiguration 4<sup>th</sup> Quarter 2015 to address storage issue due to WIPP.
- Complete certification of box assay system 3<sup>rd</sup> Quarter 2016.

# Advanced Mixed Waste Treatment Project

## CH TRU Processing

AMWTP	TRU Waste Certified	TRU Waste Shipped	Legacy MLLW Shipped	Total Progress
CY 1995 – CY 2011	0m <sup>3</sup>	35,441m <sup>3</sup>	6,101m <sup>3</sup>	41,542m <sup>3</sup>
CY 2012	0m <sup>3</sup>	2,568m <sup>3</sup>	1,433m <sup>3</sup>	4,001m <sup>3</sup>
CY 2013	0m <sup>3</sup>	2,487m <sup>3</sup>	1,022m <sup>3</sup>	3,509m <sup>3</sup>
CY 2014	1,483m <sup>3</sup>	923m <sup>3</sup>	1,060m <sup>3</sup>	3,466m <sup>3</sup>
<b>Total</b>	1,483m <sup>3</sup>	41,419m <sup>3</sup>	9,616m <sup>3</sup>	<b>52,518m<sup>3</sup></b>

# Advanced Mixed Waste Treatment Project



## Key Activities RETREIVAL and CARGO/Actions:

- Emptied first cargo in December, with 11 Of 104 cargo containers empty.
- Started retrieving waste from Pad 1 Cell 1, the final cell with waste containers.

## Upcoming Activities:

- Commence Phase II of transferring soil sacks and empty cargo containers to ICDF.

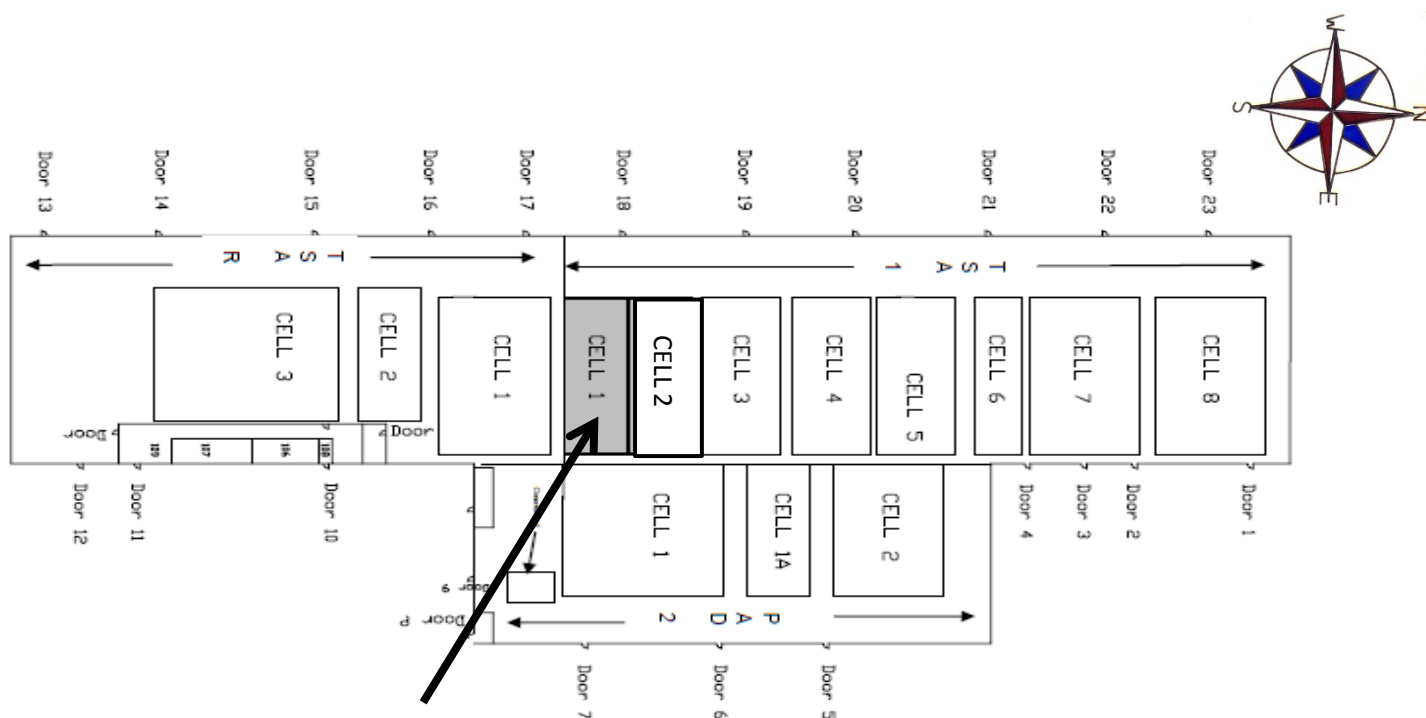


Top: Unloaded Cargo Container

Bottom: Degraded drums in open cargo container.

# Advanced Mixed Waste Treatment Project

## TSA-RE Original Floor Plan

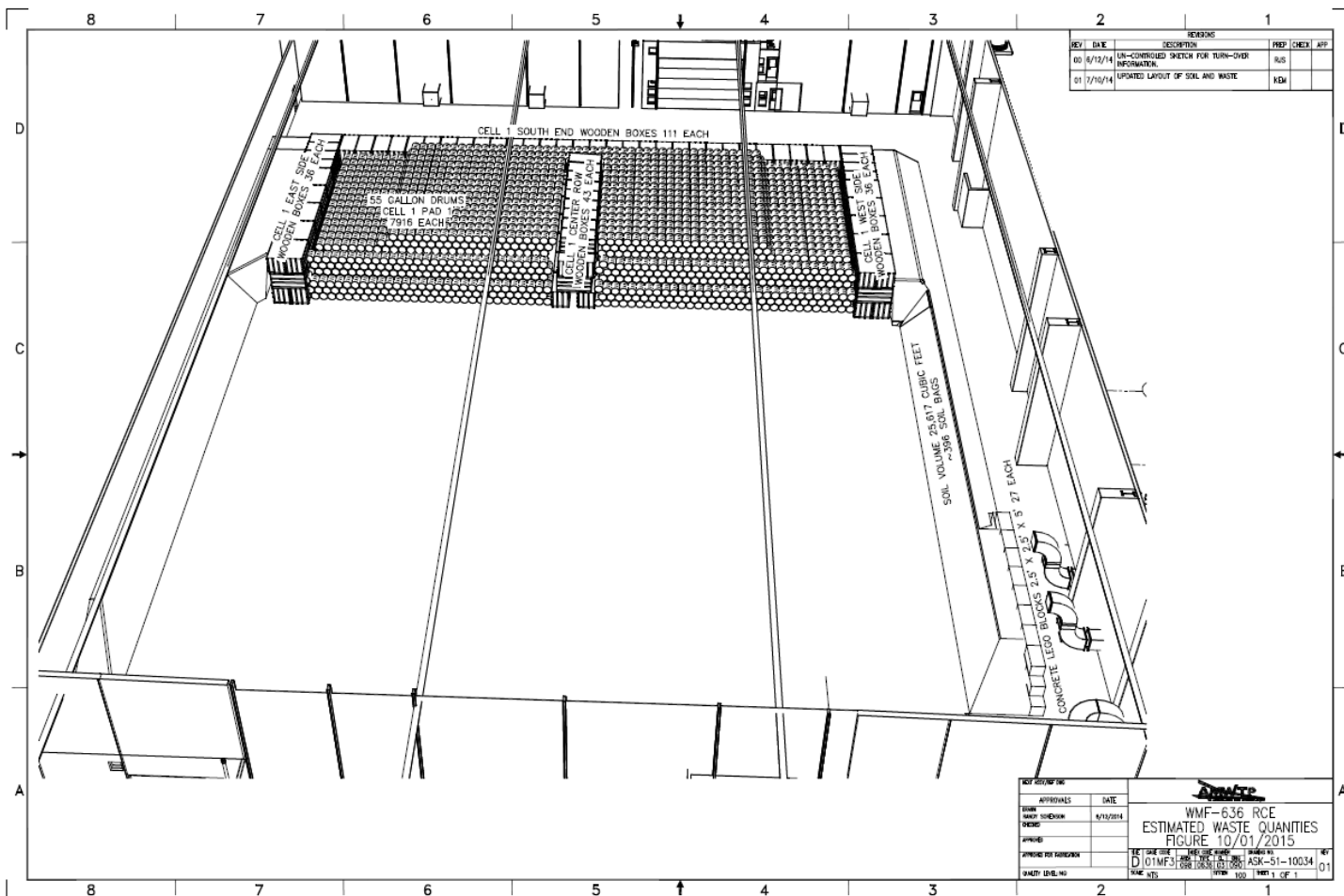


Location of remaining waste in Cell1 of Pad 1  
Thirteen cells have been retrieved.



# Advanced Mixed Waste Treatment Project

## Planned Pad 1 Retrieval End-State 9/30/2015



# 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 3.75 acres as of March 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.

# CERCLA Remediation Projects – Idaho CERCLA Disposal Facility (ICDF)

## Key Activities/Actions:

- FY 15 - Received 13,960 gallons of liquid for disposal to evaporation ponds
- FY 15 - Received a total of 1,717 m<sup>3</sup> of solid waste for landfill disposal, including all 105 (3,825 m<sup>3</sup>) Phase I cargo containers from AMWTP

## Upcoming Activities:

- Continue receipt and disposal of aqueous wastes in Evaporation Ponds
- Dispose of solid waste from environmental restoration actions, including planning for second phase (104) of cargo containers and soil from AMWTP
- Continue operation and maintenance of ICDF complex processes and facilities



ICDF disposal cell and evaporation pond  
January 2015

# CERCLA Milestone Progress

Waste Area Group (WAG)	Milestone Title	Milestone type	Milestone Date	FY2015
WAG 1 (TAN)	Revised rebound test plan	FFA/CO Regulatory	Draft plan submitted for review by 2/15/2015 (complete)	Draft plans was submitted for review on 2/10/2015
WAG 1 (TAN)	Construct 2 new injection/monitor wells	Contract baseline; Pending regulatory commitment	9/30/2015 (on track)	Complete well construction
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>RA Report submitted by 11/30/2017(on track)</li> <li>RA Report submitted 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 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
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)	Complete draft

# Sludge Repackaging Milestone Progress - ARP V

Milestone Title	Milestone type	Milestone Date	FY2015
Repackage 719 drums and 49 boxes	Contract baseline	9/30/15 (on track)	Repackage 719 drums and 49 boxes

# WAG 7 Project 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: 0.47 (as of 3/31/15) 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 (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 0.64 acres have been exhumed as of 3/31/15.
- An additional .3 acres of exhumation in ARP VIII and 719 drums and 49 boxes of AMWTP sludge repackaging in ARP V are being planned with CWI
- ARP V was placed back in operational status in order to repackage additional AMWTP sludge waste on 3/2/15. 172 of 719 drums have been repackaged as of 3/31/15.
- ARP IX design and foundation construction planned for completion by 9/30/15
- Since 1996, 49,058 lbs. TVOC removed using vapor extraction as of 3/26/15.

## Upcoming Activities:

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

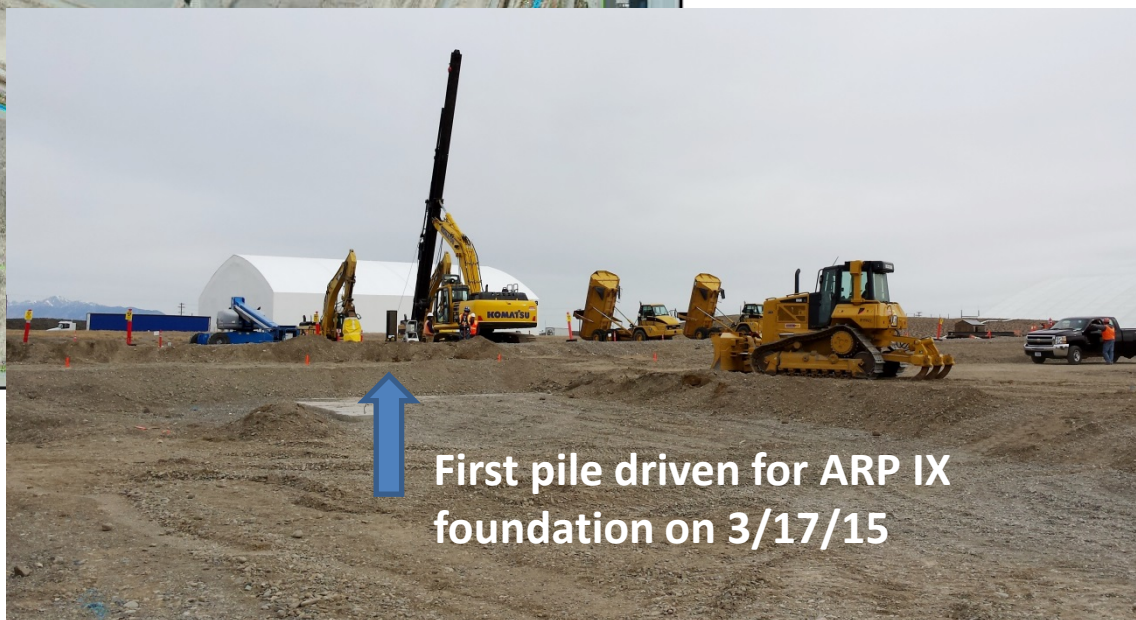
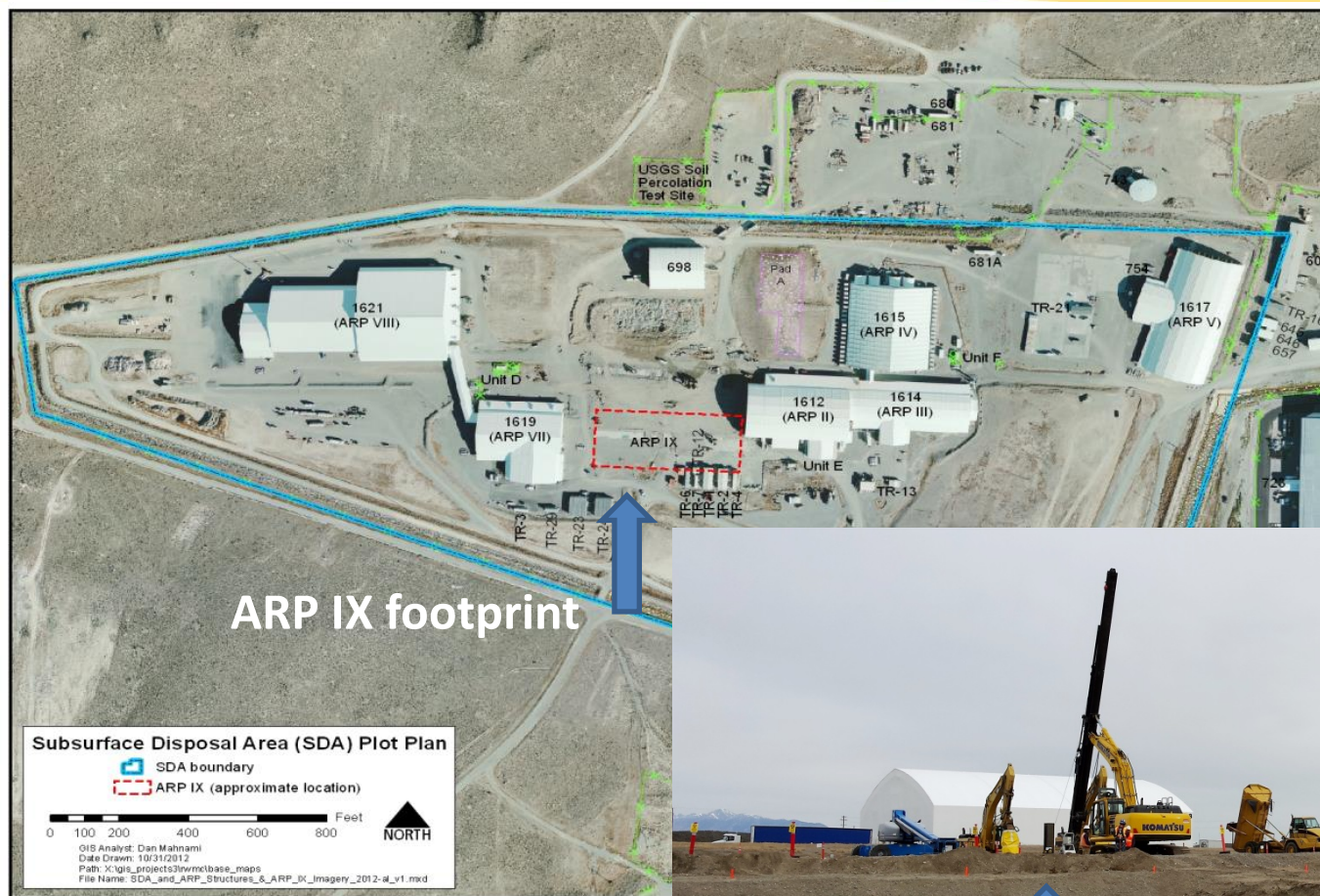
Metric	Baseline
Exhume targeted buried waste	0.51 + .3 = .81 acres by 9/30/15



ARP VIII exhumation



# Waste Area Group (WAG) 7 Project



# Integrated Waste Treatment Unit (SBW) Project

## Key Activities/Actions:

- Began confirmatory outage (inspection of equipment).
- Completed evaluation of TI-102 test results.
- Updated operating procedures in accordance with lessons learned from testing .
- Implemented equipment modifications and maintenance activities.

## Upcoming Activities:

- Complete facility maintenance and upgrades.
- Run additional simulant to verify effectiveness of modifications.
- Commence next simulant run to verify effectiveness of modifications.
- Upon completion of simulant run, begin confirmatory outage.

Metric	Baseline
Treat sodium-bearing waste	~ 850,000 gallons to loss of suction
Package SBW Waste	704 canisters filled
Process tank “heels”	360,000 gallons



Integrated Waste Treatment Unit Facility



## 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 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

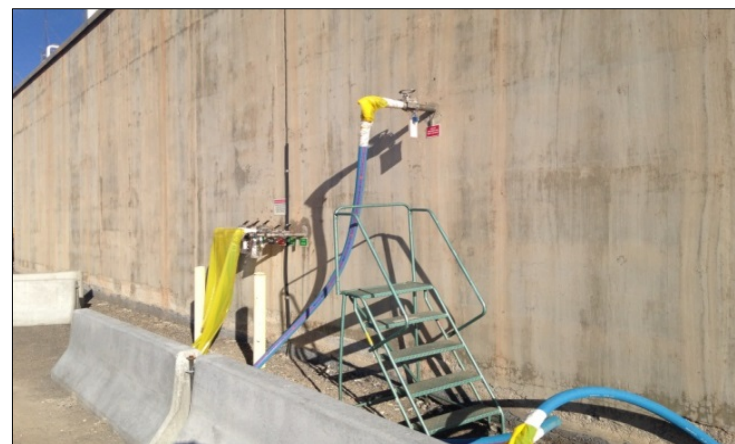
## Key Activities/Actions:

- Four ATR and three EBR-II fuel transfers were completed in the first quarter of FY 15.
- Completed resin removal from CPP-666.

## Upcoming Activities:

- Continue ATR and EBR-II SNF fuel transfers.
- Complete Contractor Readiness Assessment for CPP-666 resin removal.
- Perform DOE Readiness Assessment for CPP-666 resin removal.
- Initiate Contractor and DOE Readiness Assessments for CPP-666 resin loading/recharge.
- 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



Top – Temporary tent to support winter resin removal operations

Bottom – CPP-666 resin flush fill connections

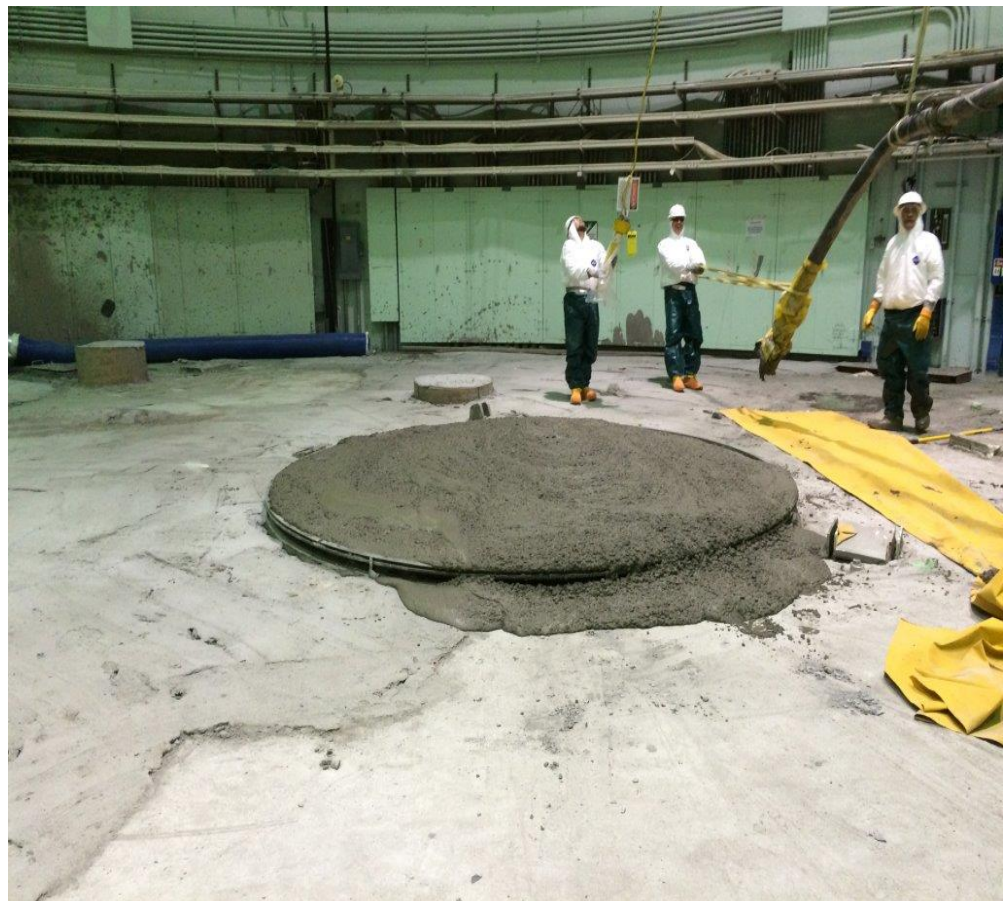


## Completed Activities/Actions:

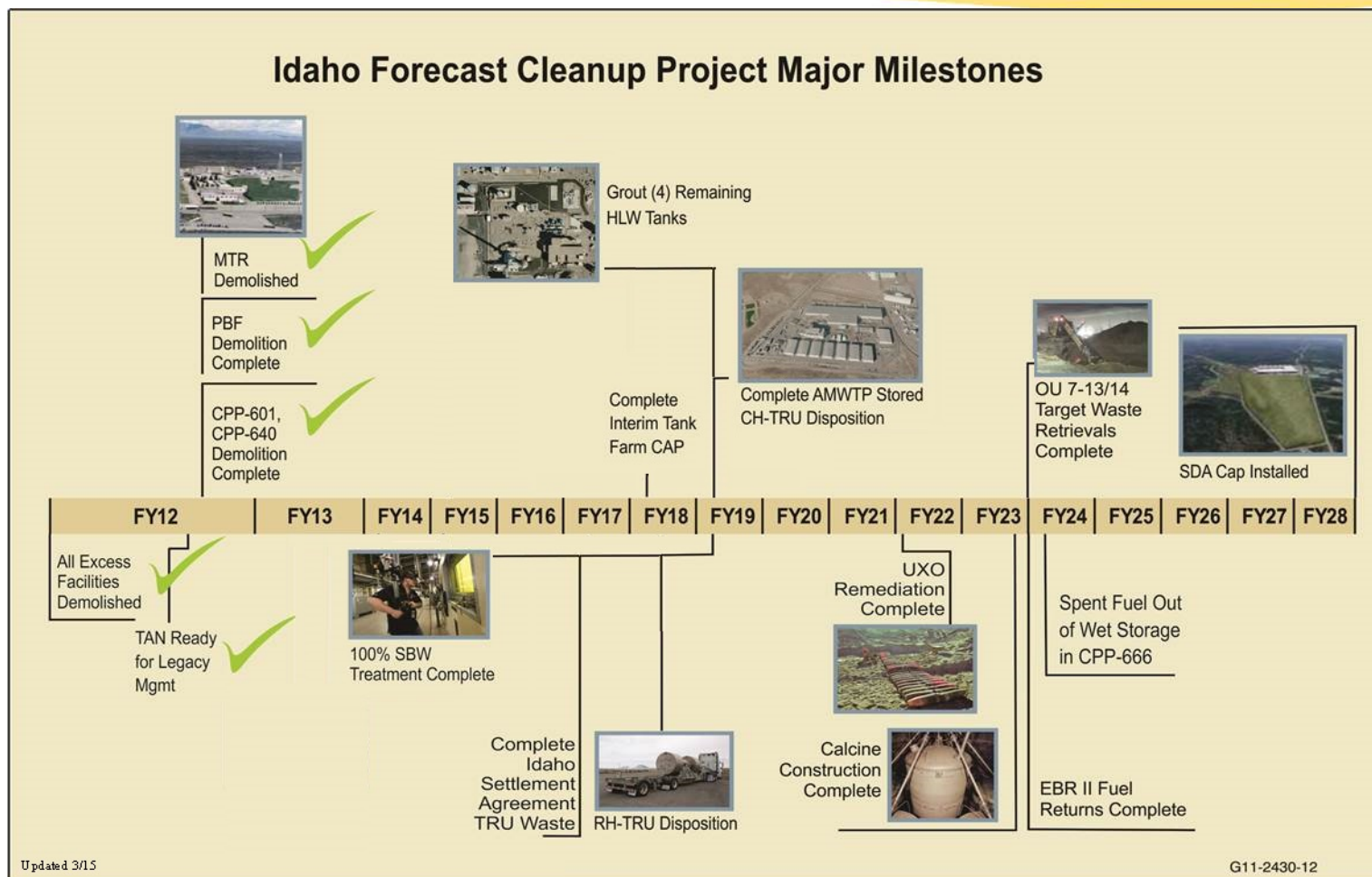
- Completed steam treatment of 9 MFC-766 heat exchangers and super heaters.
- Initiated grouting of MFC-767, EBR-II reactor building basement.

## Upcoming Activities:




- Complete grouting of MFC-767, EBR-II reactor building basement
- Begin MFC-766 pre RCRA closure preps.



# Idaho Completion Project Milestones



# Dashboard Summary for ICP Program

Key Questions	Dashboard Indicator	Comments
Effect on Agreements		Negotiated new Consent Order for IWTU of Dec. 31, 2018. No impact on meeting other current agreements.
Safety and Environment	 	CWI Safety record is exceptional  ITG safety record is slightly declining <ul style="list-style-type: none"> <li>Employee Safety Improvement Team subcommittee to focus workers on safety</li> <li>Management emphasis on improved wellness evaluations, human performance tools for event investigation, etc.</li> </ul>
ICP Cleanup Condition		TRU shipments on hold

