

Idaho Cleanup Project Progress

Citizens Advisory Board

October FY2014 Status

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Energy
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EM *Environmental Management*

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)
 - Waste Area Group (WAG) 3 – Idaho Nuclear Technology and Engineering Center (INTEC)
 - Waste Area Group (WAG) 4 – Central Facilities Area (CFA)
 - Waste Area Group (WAG) 5 – Power Burst Facility (PBF)/Auxiliary Reactor Area (ARA)
 - Waste Area Group (WAG) 6 – Experimental Breeder Reactor No. I (EBR-I)
 - Waste Area Group (WAG) 7 – Radioactive Waste Management Complex (RWMC)
 - Waste Area Group (WAG) 9 – Argonne National Laboratory – West (ANL-W)
 - Waste Area Group (WAG) 10 – Site-wide Miscellaneous Sites/Snake River Plain Aquifer
- Idaho CERCLA Disposal Facility



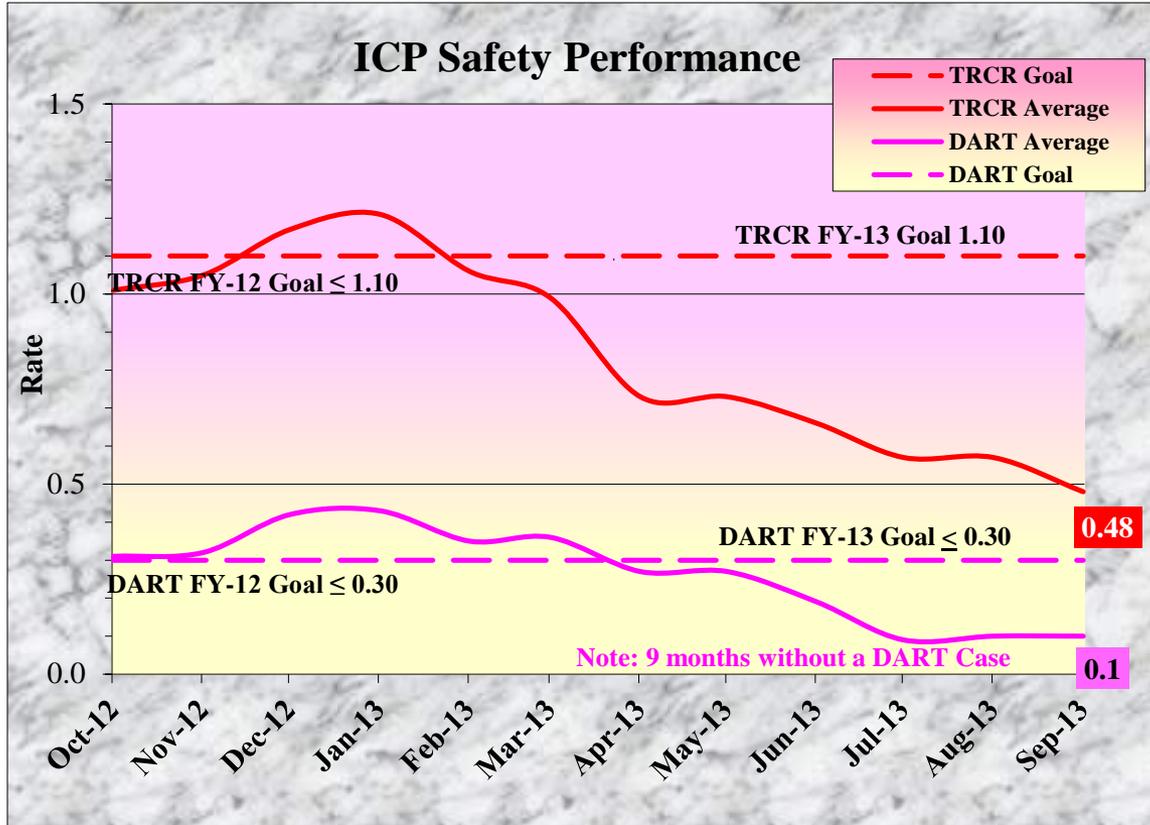
Idaho Cleanup Project Scope

- Sodium Bearing Waste Treatment
- INTEC Liquid Waste Treatment Facility (Tank Farm Closure)
- Spent Nuclear Fuel Dry Storage (Completed)
- Calcine Disposition
- Decontamination & Decommissioning
 - TAN (Test Area North)
 - PBF (Power Burst Facility)
 - ATR (Advanced Test Reactor)
 - MFC (Materials and Fuels Complex)
 - INTEC (Idaho Nuclear Test and Engineering Complex)
 - RWMC (Radioactive Waste Materials Complex)



ICP Safety Performance – October 2013

(Data through September 30, 2013)



August 2013

One First Aid Case and No Recordable Injuries

Five ORPS Reportable Occurrences:

- PAPR cartridge disconnects from respirator unit during use
- Missed verification of EBR-II fuel #
- Flexible tubing ruptures during PMT pressure test
- Personnel contamination during crane decontamination
- Sludge waste spilled onto soil during waste repackaging at ARP V

September 2013

Four First Aid Cases and No Recordable Injuries

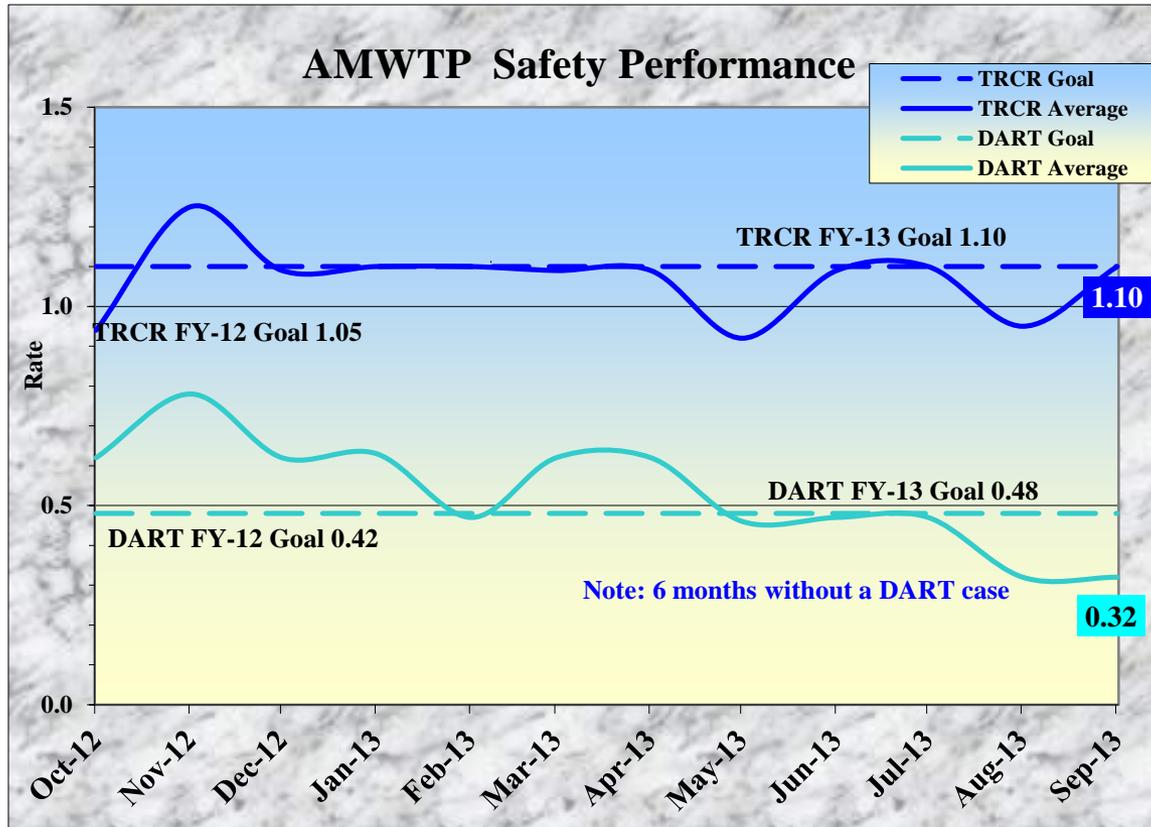
No ORPS Reportable Occurrences



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AMWTP Safety Performance – October 2013

(Data through September 30, 2013)



August 2013

Two First Aid Cases and One Recordable Injury

- An operator strained his right knee while donning PPE.

Three ORPS Reportable Occurrences:

- Warning letter from DEQ for RCRA permit violations - self-reported
- TSR violation for independent Expert Technical Review
- Recurring contamination events while using Level B suits

September 2013

Four First Aid Cases and One Recordable Injury:

- A worker experienced eye abrasion while wearing safety glasses.

One ORPS Reportable Occurrence:

- Fire in Treatment Facility North Boxline during waste treatment



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Remote Handled Transuranic Waste Disposition

Key Activities/Actions:

- In FY13, CWI completed 73 shipments of remote-handled transuranic (RH-TRU) waste to the Waste Isolation Pilot Plant (WIPP).
- Received final approval from DEQ on the RCRA Permit Modification Request and the air Permit to Construct for the Sodium Distillation System (SDS)
- Finalized system testing of the Sodium Distillation System at Premier Technologies Inc. Started demobilization and transportation of the SDS to INTEC.

Upcoming Activities:

- Begin installation of the Sodium Distillation System at INTEC
- Commence start-up and commissioning activities associated with the Sodium Distillation System (Start of Operations end of FY14)
- Continue processing and shipments of remote-handled transuranic shipments to WIPP



Sodium distillation equipment at Premier Technologies



Advanced Mixed Waste Treatment Project



Key Activities/Actions:

- DOE validated ITG's ISMS Program implementation
- Only project in DOE Complex to ship 52,000+ cubic meters of transuranic/mixed low-level waste and to work 14+ million hours without a lost time injury
- Continuing to meet all scheduled shipments of transuranic waste to WIPP
- Received recognition for new retrieval techniques developed through employee involvement
- Opened and treated 2,958 of 6,000 sludge drums at ARP V as of 9/30/2013

Upcoming Activities

- Startup of cargo container unloading
- Transfer of inorganic sludge to CWI
- Begin unpacking drums for super-compaction direct feed
- Continue ARP V sludge repackaging

Employee ideas including the bullhorn forklift attachment (top), the Box Retrieval Forklift Carriage (bottom right) and the soft sided overpack sack (not shown) are responsible for new technologies helping to safely and compliantly expedite retrieval of the final ~5,000 cubic meters of stored waste at AMWTP.



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CERCLA Remediation Project Objectives

- WAG 1: Test Area North (TAN)
 - TAN Groundwater Remediation
- WAG 3: Idaho Nuclear Technology and Engineering Center (INTEC)
Complete the OU 3-14 Record of Decision for the Tank Farm
 - 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 3.11 acres](#))
 - Complete 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)



CERCLA Remediation Projects

Key Activities/Actions:

- Completed munitions and explosives of concern (MEC) field work at the Arco High Altitude Bombing Range and Twin Butte's bombing range
- Completed disposal of discovered MEC
- Conducted groundwater monitoring at WAGs 4, 10
- Completed soil remediation at ANL-65, Steel Shot North of the Materials and Fuels Complex
- Submitted the Waste Area Group 7 Phase 1 Remedial Design/Remedial Action Work Plan for Accelerated Retrieval Project VIII exhumation

Upcoming Activities:

- Conduct characterization sampling at the Mass Detonation Area
- Continued operation of the Test Area North pump and treat facility and vapor vacuum extraction units at the Subsurface Disposal Area



MEC Disposal (archived photo)



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CERCLA Remediation Projects – Idaho CERCLA Disposal Facility (ICDF)

Key Activities/Actions:

- Received a total of 20,871 gallons of liquid waste at the Evaporation Ponds FY 2013
- Received a total of 13.36 m³ of WAG 3 waste for landfill disposal FY 2013
- Continuing to perform annual preventative maintenance

Upcoming Activities:

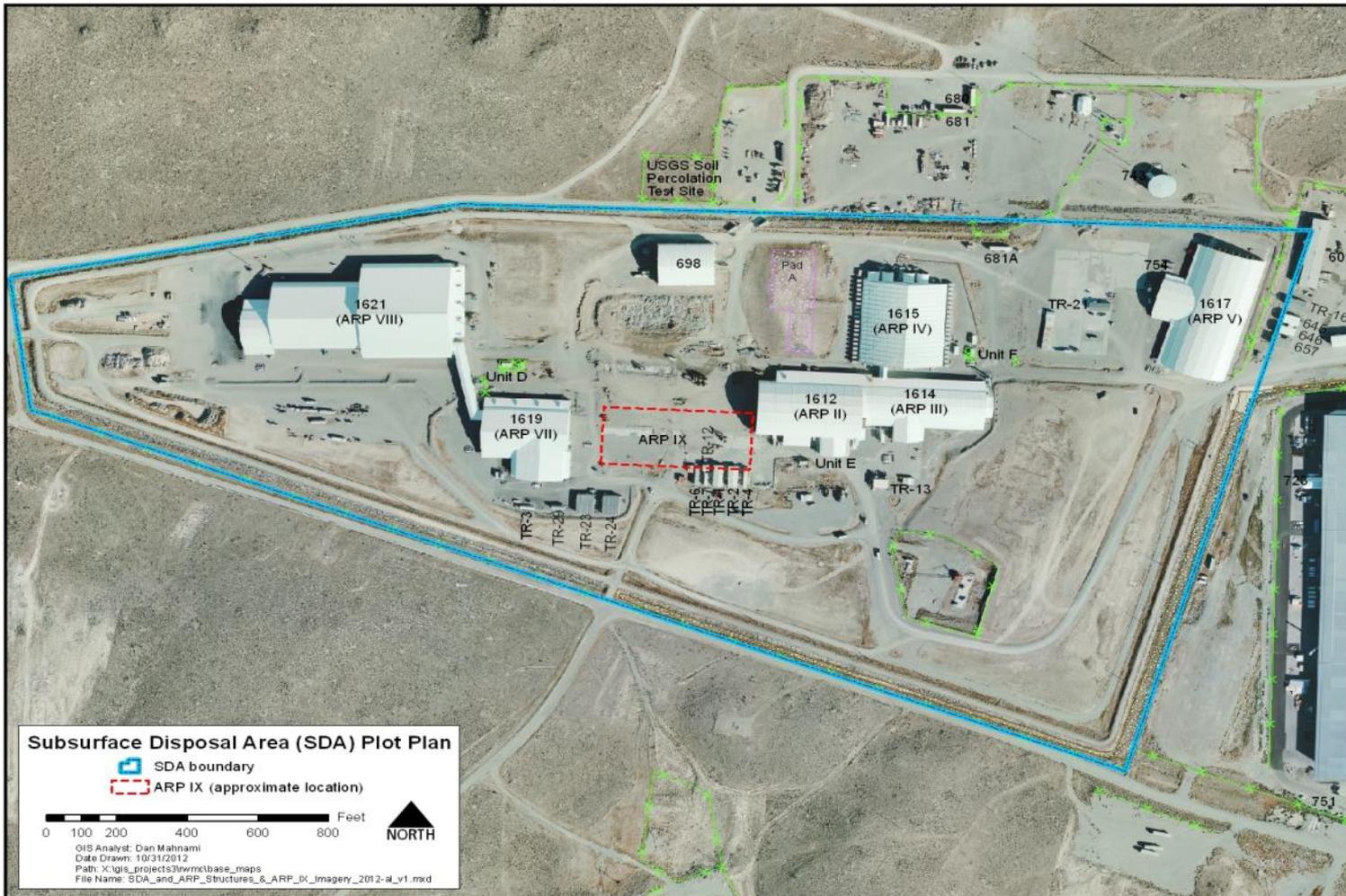
- Continue receipt and disposal of aqueous wastes in Evaporation Ponds
- Potential solid waste disposal in landfill of environmental restoration wastes (WAG 1 and D&D waste from MFC)
- Continue operation and maintenance of ICDF complex processes and facilities



Spare leachate pump performance check installation of new level sensor



Waste Area Group (WAG) 7 Project



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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, IV, V, and VI (Completed)
 - ARP III exhumation completed 0.38 of 0.43 acres
 - ARP VII exhumation completed 0.15 acres of 0.27 acres
 - ARP VIII 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



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WAG 7 Project

Key Activities/Actions:

- Completed dismantlement of the ARP II waste transfer vestibule and foundation in preparation for resuming buried waste exhumation in Accelerated Retrieval Project (ARP) III
- Resumed waste exhumation in ARP III

Upcoming Activities:

- Complete waste exhumation in ARP III
- Complete the ARP VIII contractor readiness assessment
- Begin ARP VIII waste exhumation

Metric	Baseline
Exhume targeted buried waste	0.46 acres by 9/2015



ARP V sludge drum repackaging



Integrated Waste Treatment Unit (SBW) Project

Key Activities/Actions:

- Initial leak testing is complete with minor leaks being identified for rework.
- Started Contractor management self-assessment
- Operator Training

Upcoming Activities:

- Perform final process leak check and test the Rapid Shutdown System
- Training for Federal staff
- Complete Pre-operational Testing to process Sodium Bearing Waste
- Prepare for Contractor Readiness Assessment and DOE Readiness Assessment
- Commence Operations March 2014 (Baseline)

Metric	Baseline
Treat sodium-bearing waste	820,000 gallons to loss of suction
Package SBW Waste	700 canisters filled
Process tank "heels"	360,000 gallons



Installing the DMR waste feed spray nozzles



INTEC Liquid Waste Facility Closure Project

Key Activities/Actions:

- Completed piping installation to allow the drainage of underground cooling coil main supply and return lines
- Completed tank winterization to allow washing during the winter
- Modify piping in CPP-628 to allow flushing of cooling coil main supply and return lines

Upcoming Activities:

- Complete installation of a cooling coil flush pump to the water storage tank piping
- Perform demolition in CPP-635 and CPP-636 of selected cooling coil lines to allow future flushing to occur
- Remove remaining cooling coil solution in the main underground piping

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



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Spent Nuclear Fuel Disposition Project Objectives

- **Transfer legacy, EM-owned spent nuclear fuel (SNF) from wet storage to appropriate dry storage (completed)**
- **Receive and store SNF from the Advanced Test Reactor**
- **Receive Domestic and Foreign Research Reactor SNF for storage (suspended at this time)**
- **Prepare the SNF facilities for transition to another government entity by installing a segregation fence (completed)**
- **Provide safe, regulatory-compliant, routine operations for INTEC SNF handling and storage facilities**



Spent Nuclear Fuel Disposition Project

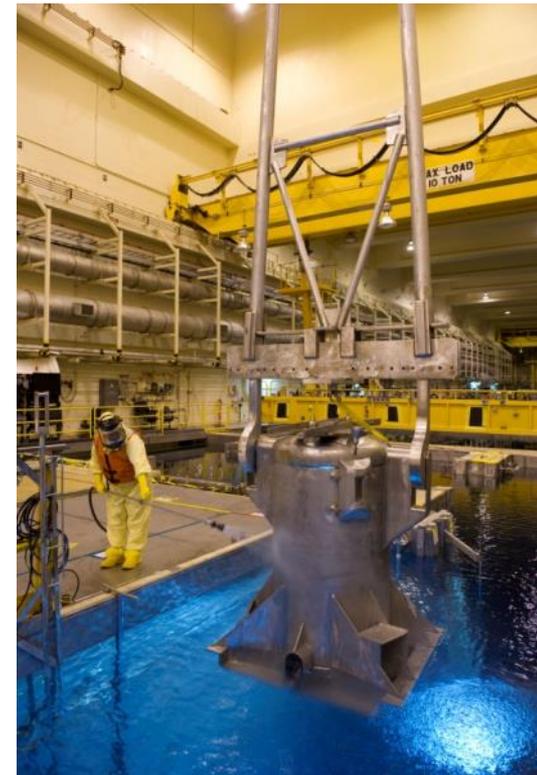
Key Activities/Actions:

- Fifteen cask shipments of SNF received from the Advanced Test Reactor (ATR) in FY-13
- Three Experimental Breeder Reactor (EBR) II shipments made to the Materials and Fuels Complex in FY13

Upcoming Activities:

- Continue SNF cask receipts from ATR-15 in FY14
- Initiate the Three Mile Island-2 license renewal process with the Nuclear Regulatory Commission
- Continue EBR-II Fuel transfer – 6 in FY14
- Transfer of West Valley Casks From rail cars to cask storage pad

Metric	Baseline
Ship Advanced Test Reactor fuel	15 ATR
Ship EBR-II	3 EBR



Fuel movement



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Calcine (HLW) Disposition Project Objectives

DOE shall treat all high-level waste currently at INL so that it is ready to be moved out of Idaho for disposal by a target date of 2035. (Idaho Settlement Agreement)

- Design and construct processing facility using IWTU structure
- Treat Calcine
- Package treated waste form
- Store resultant canisters pending shipment out of State
- Perform RCRA performance-based closure on existing HLW facilities

Calcine (HLW) Disposition Project

Key Activities/Actions:

- Continue to support DEQ's review of RCRA Part B Permit



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D&D – Materials and Fuels Complex (MFC) Project

Completed Activities:

- Completed sodium treatment at MFC-799: Day Tanks A & B, and Sodium Storage Tank
- Obtained Professional Engineer (PE) Certification supporting closure of MFC-799
- Initiated sodium contaminated pipe removal from MFC-766



Sodium Contaminated Piping MFC-799

Upcoming Activities:

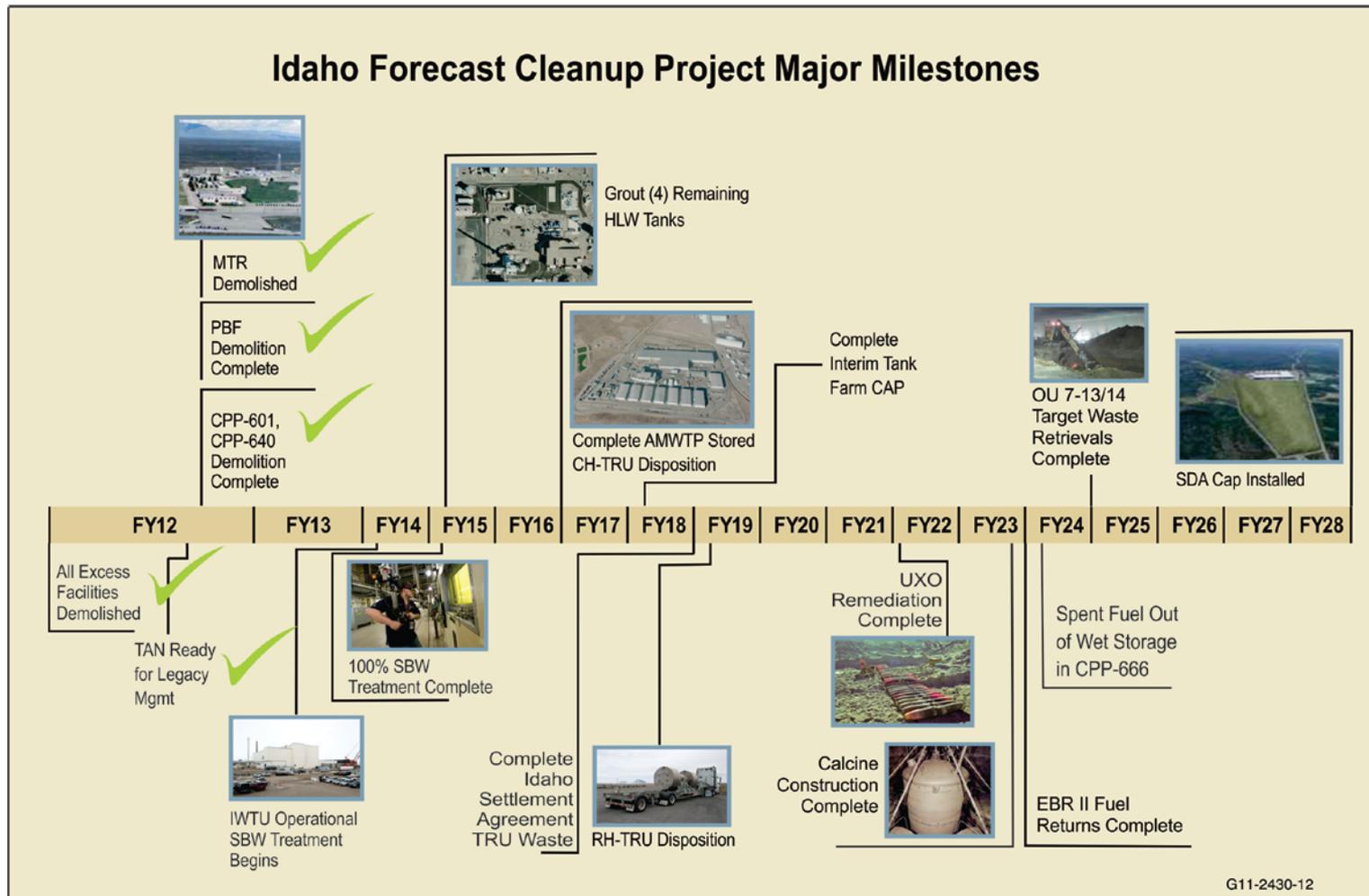
- Complete removal of the MFC-799 Sodium Storage Tank (Post treatment MFC-766)
- Initiate RCRA closure of MFC-799 / 799A
- Identify funding for removal of MFC-766 affected piping (small diameter)



Demolition of MFC-799A



Idaho Completion Project Milestones



Dashboard Summary for ICP Program

Key Questions	Dashboard Indicator	Comments
Budget Concerns and Issues		FY14 is now under continuing resolution. Appropriations provides funding for ITG and CWI while cost savings will continue to support exhumations for ARPs III and VIII.
Employment/Economic Conditions		Employment/Economic conditions should remain consistent. However, sequestration could impact FY14 goals.
Affect on Agreements		No impact on meeting current agreements
Safety and Environment		CWI Safety record is exceptional ITG safety record is at targets and improving
ICP Cleanup Condition		ICP continues to support WIPP – Meet scheduled TRU shipments

