

**Idaho Cleanup Project  
Citizens Advisory Board  
March 2013 Status**

**James Cooper  
Department of Energy  
Idaho Operations Office**



**EM** Environmental Management

# *Idaho Cleanup Project Scope*

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- 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



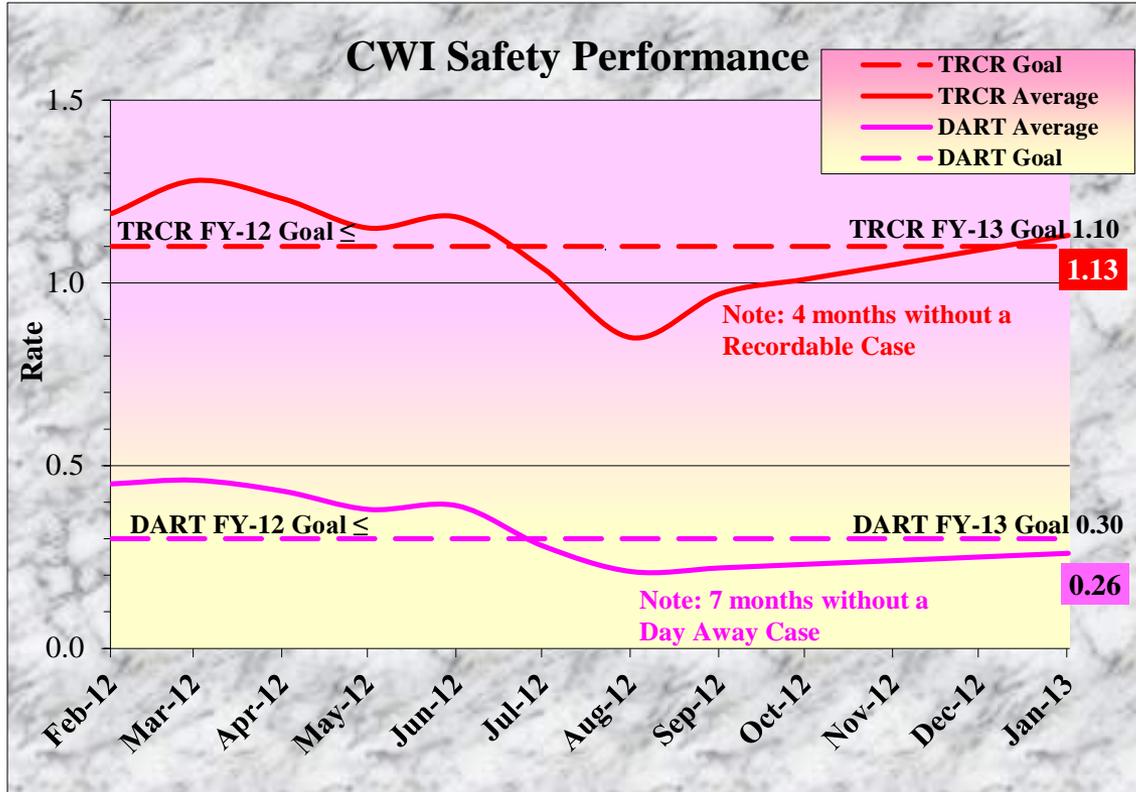
# *Idaho Cleanup Project Scope*

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- 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 – March 2013



## December 2012

**No First Aid Cases or Recordable Injuries**

## **One ORPS Reportable Occurrence:**

- IWTU – Positive Unreviewed Safety Question (USQ) associated with rupture disk performance during facility heatup.

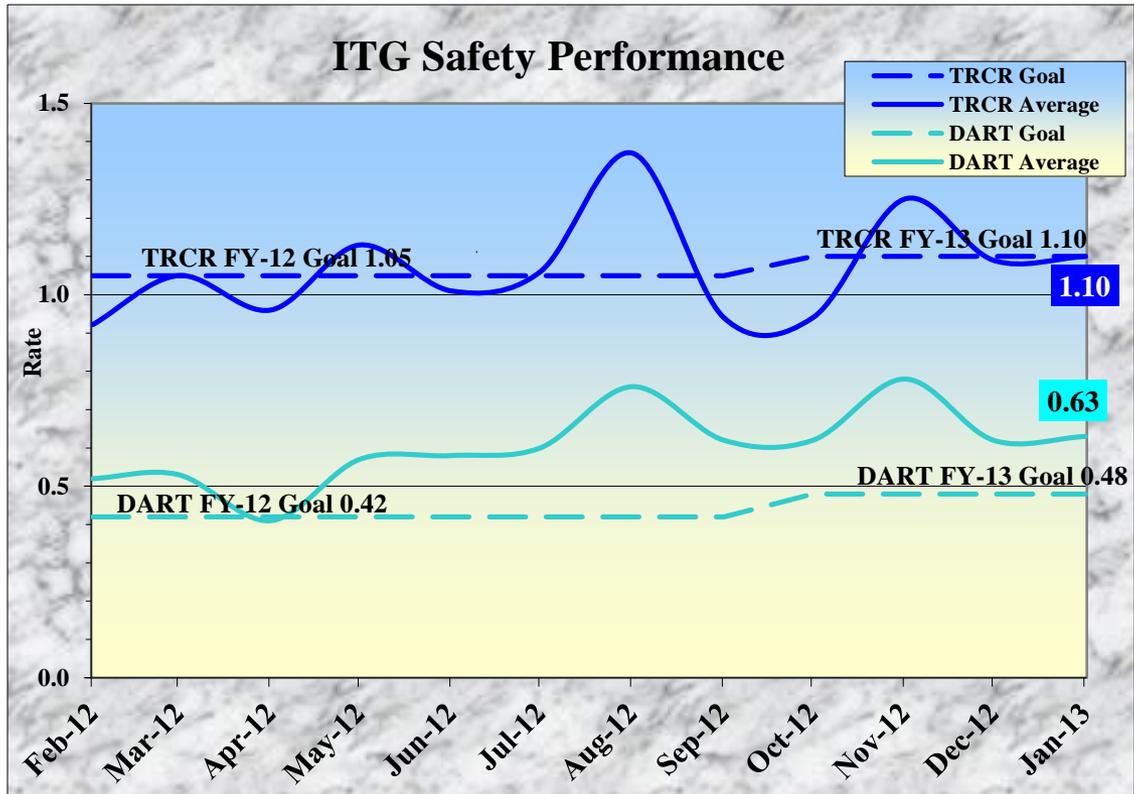
## January 2013

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

**No ORPS Reportable Occurrences**



# AMWTP Safety Performance – March 2013



## December 2012

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

### **Three ORPS Reportable Occurrences:**

- Ineffective Issues Management and Performance Improvement Processes
- Positive USQ from discovery of duplicate bar code labels
- Inadequate hazardous energy control during equipment maintenance

## January 2013

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

### **Two ORPS Reportable Occurrences:**

- Failure to implement fall protection for workers in cell
- Level B suit problems (equipment failures and issues during use)



# Advanced Mixed Waste Treatment Project



ITG employees practice the Drill & Drain procedure, where a hole is drilled in a drum containing liquids (top photo). The liquids are then removed with a high powered vacuum to a collection container



## Key Activities/Actions:

- ITG employees have worked more than 1.7 million hours (14.2 million hours over life of the project) without a lost-time injury
- Continuing to meet all scheduled shipments of transuranic waste to WIPP
- Ahead of shipping goals contained in Production Recovery Plan
- Continuous improvement in AMWTP operations
- Drill & Drain process to remove liquid from a potential of 15,000 drums
- Permit modification from state of Idaho to supercompact formerly prohibited items i.e., aerosol cans
- LINE Commission endorsement

*“... Over \$1 billion has been invested in this facility, which is a national asset. Once the Idaho cleanup efforts are completed the facilities at the AMWTP could be effectively used to assist in the characterization and cleanup being performed at other national locations.”*



**EM** Environmental Management

# *Transuranic Waste Disposition*

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## **Key Activities/Actions:**

- Continue progress on making Remote Handled Transuranic Waste (RH-TRU) shipments to Waste Isolation Pilot Plant (WIPP) during FY-13
  - Average 2 shipments/week in FY13
- Continued making progress on the Accelerated Retrieval Project (ARP) V sludge repack

## **Upcoming Activities:**

- Continue ARP V sludge repack
- Submit Resource Conservation and Recovery Act (RCRA) permit for the Sodium Treatment System by 3/31/2013



RH-TRU repackaging in CPP-659



# *CERCLA Remediation Project Objectives*

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- 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*

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## **Key Activities/Actions:**

- Upgraded the CPP-1608 HVAC system, which permanently eliminated the discharge of steam condensate water to the ground at shallow injection well 35-CPP
- Submitted the final Operational Unit (OU) 3-14 Phase I Remedial Action Report to the state and EPA

## **Upcoming Activities:**

- Conduct Munitions and Explosives of Concern (MEC) field work at the Twin Buttes Bombing Range
- Submit the WAG 7 semi-annual groundwater and vadose zone monitoring reports
- Continued operation of the TAN pump and treat facility and OCVZ units



Groundwater treatment system at Test Area North



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

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## **Key Activities/Actions:**

- Received 6,912 gallons of aqueous waste in the ICDF Evaporation Ponds
- Performed routine operations and maintenance of ICDF complex processes and facilities

## **Upcoming Activities:**

- Continue receipt and disposal of aqueous wastes in ICDF Evaporation Ponds
- Continue operation and maintenance of ICDF complex processes and facilities



ICDF landfill and Evaporation Ponds in fall 2012



## *Waste Area Group (WAG) 7 Project Objectives*

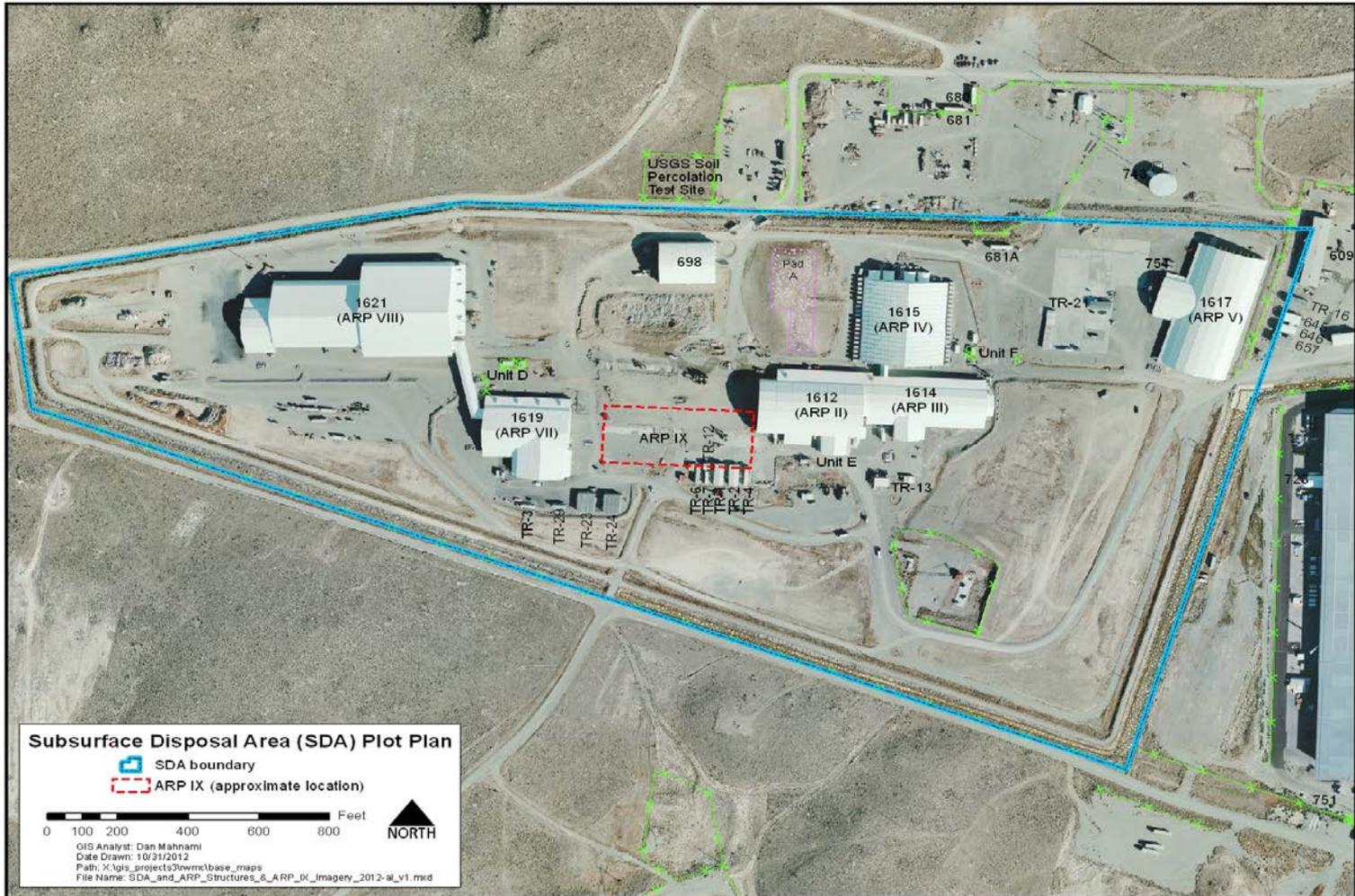
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- Complete remediation work in accordance with the Record of Decision (ROD) for OU 7-13/14
- Conduct Targeted Waste Retrieval at the Accelerated Retrieval Projects (ARP) and disposition waste:
  - ARP I, II, IV, V, and VI (Completed)
  - ARP III exhumation 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 (cont'd)



# WAG 7 Project

## Key Activities/Actions:

- Processed 424 drums to date of RCRA sludge waste inside the ARP V Waste Exhumation Facility
- Completed construction of the ARP VIII Waste Exhumation Facility including system operability testing

## Upcoming Activities:

- Continue ARP V sludge repack
- Continue Operation and maintenance of ARP facilities in standby mode.

Metric	Actual (CTD)	Goal (9/30/15)
Exhume targeted buried waste	-	0.46 acres



ARP V sludge drum repackaging



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

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## **Key Activities/Actions:**

- Maintain Resource Conservation and Recovery Act compliance of MFC-766 (EBR-II Facility)
- Deactivate MFC-799 and demolish MFC-799A

## **Upcoming Activities:**

- Install Sodium Distillation System



Tank being moved from the Process Area in MFC-799 to the Hi-Bay Area of MFC-799



# *Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project Objectives*

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- Design, construct and test the Sodium Bearing Waste Treatment Facility (Completed)
- Complete facility improvement modifications
- Operate the Sodium Bearing Waste Treatment Facility
- Drain sodium-bearing waste material from tanks



# Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project

## Key Activities/Actions:

- Implementation of the recovery plan from the Rapid Shutdown System (RSS) event to include: procedures, and associated system repairs and facility modifications.

## Upcoming Activities:

- Continued implementation of the RSS event recovery plan.
- Prepare for readiness reviews.

Metric	Actual (CTD)	Goal (9/30/15)
Treat sodium-bearing waste	-	820,000 gallons to loss of suction
Package sodium-bearing waste	-	700 canisters filled
Process tank "heels"	-	360,000 gallons



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# *INTEC Liquid Waste Facility (Tank Farm) Closure Project*

## **Key Activities/Actions:**

- Installed a tent over valve box C-12 in preparation for draining the underground cooling coil supply and return headers
- Completed shop fabrication of 16 Grout Mast Lower Assemblies and two Upper Grout Arms

## **Upcoming Activities:**

- Analyze sampling of WM-190
- Modify piping in valve box C-37
- Fabricate two Upper Grout Arms, four Lower Grout Arms, and eight Upper Grout Mast Assemblies

Metric	Actual (CTD)	Goal (9/30/15)
Close liquid waste tanks	-	4 tanks



Personnel donning PPE for entry into valve box C-37



# *Spent Nuclear Fuel Disposition Project Objectives*

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- **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

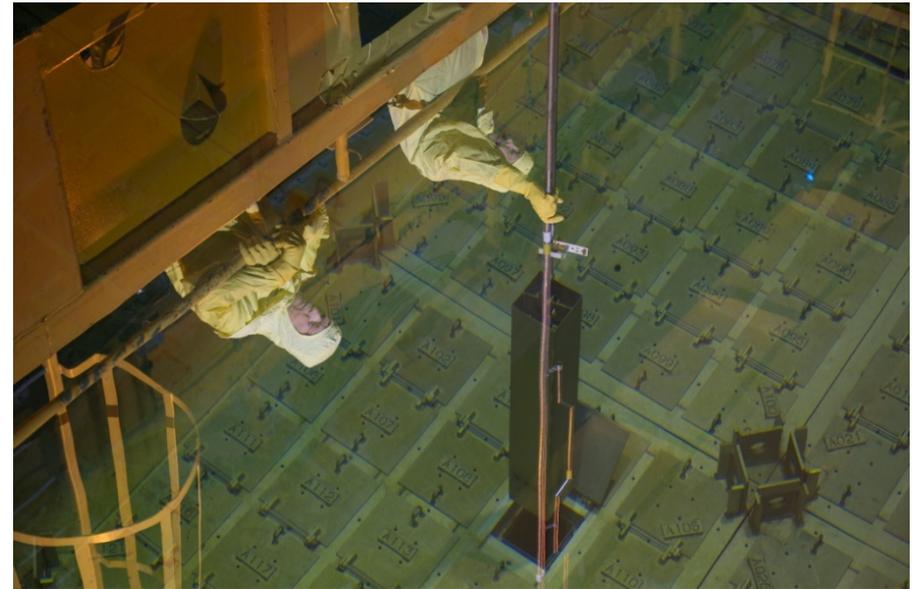
## Key Activities/Actions:

- Completed unloading of 91TRIGA fuel elements from Austria
- Completed receipt and unloading of four Advanced Test Reactor casks (four of 15 planned for FY13 completed to date)

## Upcoming Activities:

- Continue receipt and unloading of ATR casks
- Continue cask shipments to NRF
- Prepare for EBR-II fuel transfers

Metric	Actual (CTD)	Goal (9/30/15)
Receive, unload, and store Advanced Test Reactor fuel	4	45 casks



Fuel movement in February



# *Calcine (HLW) Disposition Project Objectives*

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**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, paragraph C.3)**

- 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

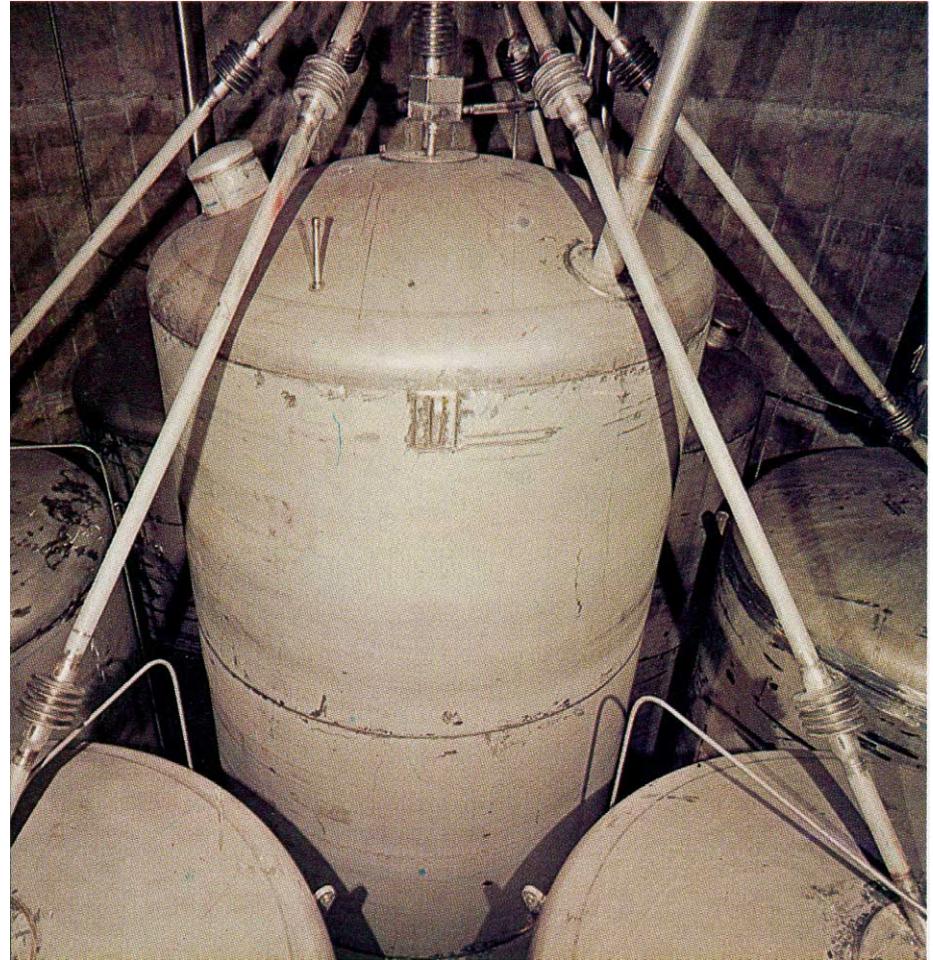


# *Calcine (HLW) Disposition Project*

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## **Key Activities/Actions:**

- Continue to support state review of RCRA Part B Permit



Historic photo showing the interior of a calcine bin set



# Idaho Completion Project Milestones

