



# ***Idaho Cleanup Project Integrated Waste Treatment Unit***

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**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

**Idaho Cleanup Project**

# IWTU Mission

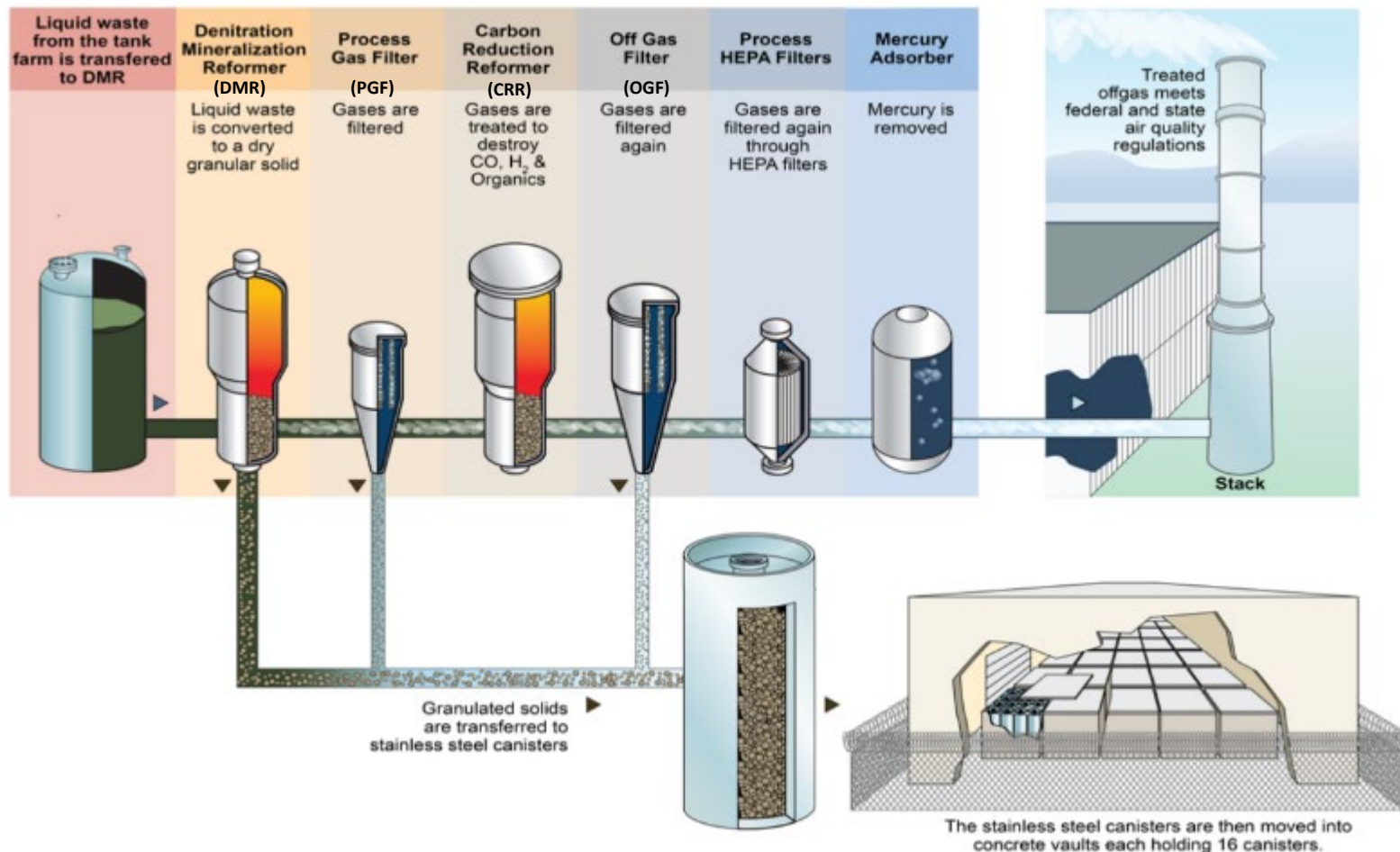
- IWTU is a Hazard Category 2 nuclear facility designed and constructed to treat approximately 850,000 gallons of highly radioactive liquid tank waste (sodium bearing waste – SBW) using the fluidized bed steam reforming process
  - General waste description:
    - Approximately 850,000-900,000 gallons of acidic waste
    - Waste is contained in 3 stainless steel tanks within concrete vaults (WM-187, -188, -189)
    - Tank 187 includes majority of solids (36-inch heel)
- The process will convert liquid SBW into a solid, granular, carbonate product for on-site storage pending final disposition



Treated SBW simulant product

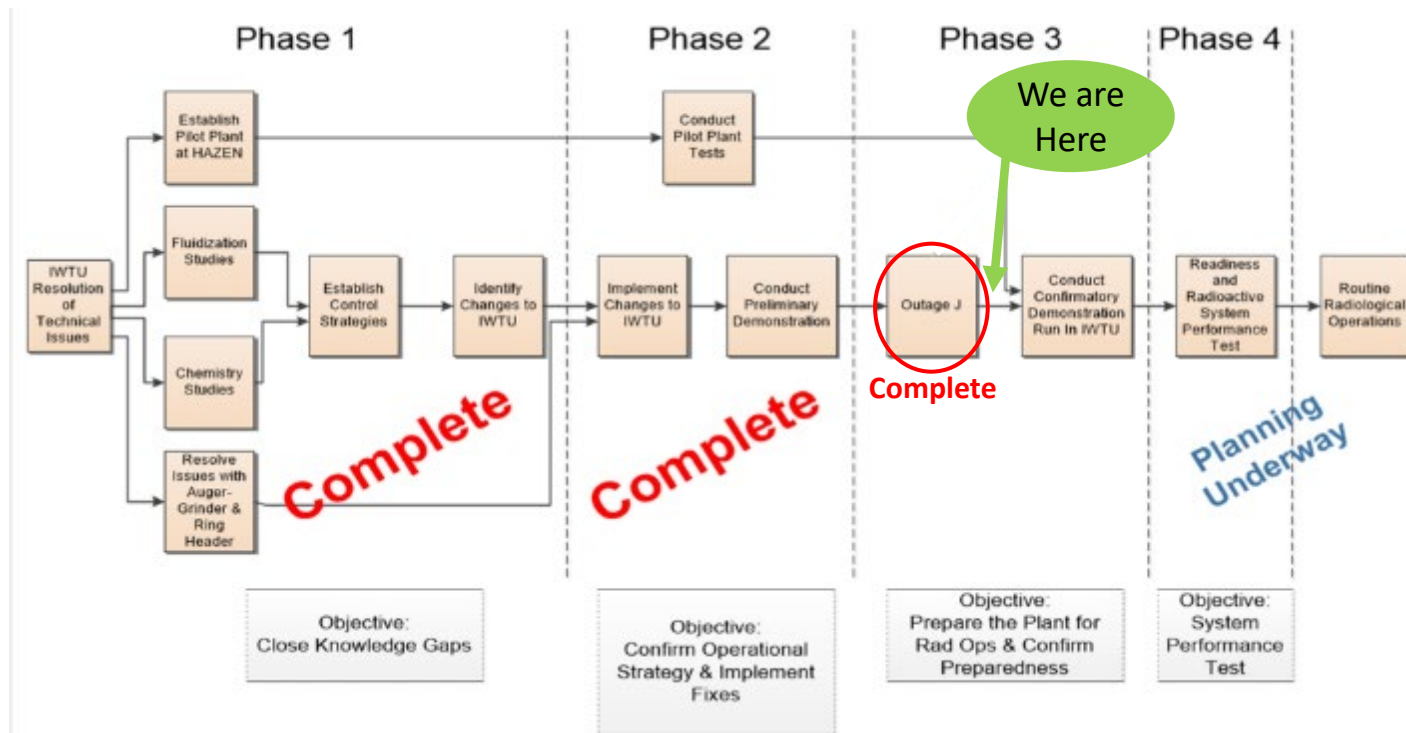


# IWTU Process Flow



# IWTU Phased Approach

- A four phased approach to achieve radiological operations
- Each phase scope of work negotiated separately due to the discrete nature of the work and builds upon previous phase results





# Major Outage J Objectives

- Finalize Process Gas Filter (PGF) design - **complete**
- Optimization for sustained radiological operations - **complete**
  - Wet/dry decontamination system modifications
  - Canister decontamination system modifications
  - Contamination control facility modifications
- Other operability improvements
  - Dedicated IWTU air compressor
  - Permanent simulant system



Wet decon system skid installation (Pre-COVID)



Wet decon control tubing installation inside pipe chase (Pre-COVID)



# Wet and Dry Decontamination System Status

- Integrated system testing - **complete**
  - Wet decon
  - Dry decon
    - Full test will occur following confirmatory run
  - Dry vacuum



Wet decon system control station

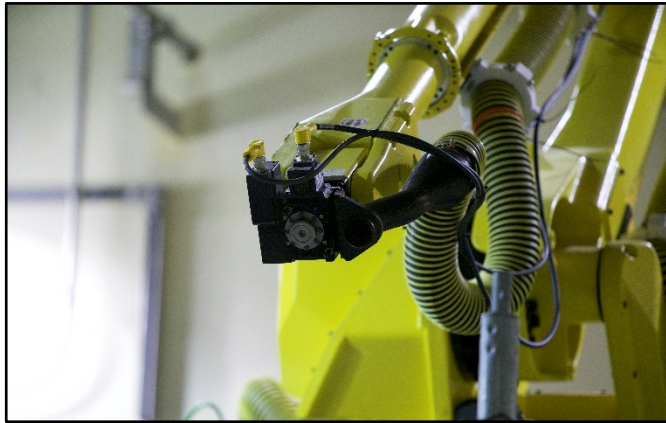


Auxiliary blower



# Canister Decontamination System Status

- Resolved excess canister movement issue
- Completed integrated testing in both canister fill cells
- Conducted on-the-job-training with operators and engineers



Canister fill cell decon robot arm



Operators and engineers conducting integrated testing of canister decon robot





# Contamination Control Modifications Status

- Completed all remaining field activity & testing
  - Canister fill cell & vault loading cell HVAC
  - Vault loading tarping system
  - Personnel decon station
  - Herculite liner under transfer bell crane path
  - Floor prep/painting



Canister fill cell



Vault loading cell HVAC plenum



Vault tarp system



Personnel decon station





# Other Accomplishments

- Removed master Lockout/Tagout (LOTO)
- Completed Outage J documentation closeout
- Completed system turnover to operations
- Implemented revised safety basis
- Commenced readiness assessment activities



Waste feed pump skid



# Project Path Forward Summary

- Perform simulant re-start readiness verification activities
  - Management Self Assessment (MSA): complete
  - Contractor Readiness Assessment (CRA): in progress
  - DOE Readiness Assessment (DRA)
- Conduct confirmatory run
  - Verify effectiveness of Outage J modifications
  - Conduct CRA & DRA to verify readiness for radioactive waste operations under simulated radiological conditions
- Conduct PGF outage
  - Conduct integrated test of dry decon system
  - Perform required PGF vessel & other required inspections
- Conduct system performance test
  - Simulant start up, bed turnover & sample off-gas collection dry-run
  - Initiate test with blended (simulant & SBW) feed to verify rad conditions
  - Establish final permit conditions using 100% SBW tank waste & collect required samples
  - Transition to steady-state SBW treatment operations

