American Recovery and Reinvestment Act Projects at the WVDP

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Safety

#1 Safety ranking in DOE's Office of Environmental Management

- Overall Project Stats:
  - Total Recordable Case Rate (TRC) **0**
  - Days Away, Restricted, Transferred (DART) **0**
  - Safe work hours since last lost-time work accident **2,066,842**
- Recovery Act Safety Stats:
  - TRC **0**
  - DART **0**
  - Safe work hours **114,473**

Department of Energy VPP Star of Excellence

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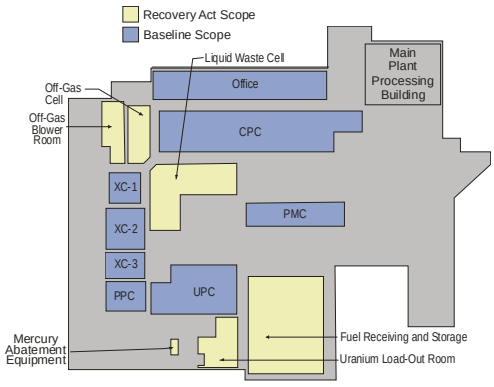
Recovery Act Projects

$74M

- **The Projects**
  - Accelerate decontamination of the Main Plant Process Building (MPPB) in preparation for demolition
  - Install solidification system for Main Plant liquids
  - Install Tank and Vault Drying System
  - Accelerate stored waste processing/packaging
  - Install Permeable Treatment Wall to mitigate North Plateau Sr-90 plume
  - Remove 01-14 Building
- **The People**
  - 54 new hires, 10 additional new hires expected to start Nov 30

Main Plant D&D

- Accelerate work activities in the MPPB to accomplish removal of residual process vessels and piping from the facility by June 30, 2011
- Targeted areas are:
  - Off-Gas Cell and Off-Gas Blower Room
  - Uranium Load-Out area
  - Liquid Waste Cell
  - Miscellaneous Piping in Process Aisles
  - Fuel Receiving and Storage
  - Asbestos-Containing Material Removal
  - Ventilation Exhaust Cell functional replacement in kind
- This scope integrates with related removal scopes from existing Project baseline that includes the Acid Recovery Cell, Hot Acid Cell, and Extraction Cells 1 and 3



Main Plant D&D (cont)

- MPPB
  - Acid Recovery Cell (ARC)
    - Completed in-cell equipment removal and applied spray fixative
    - Core drilling through wall of cell into adjacent Off -Gas Cell to prepare for Off-Gas Cell D&D
  - Extraction Cell-3 (XC-3)
    - 100% of process piping removed from cell
    - 11 of 14 vessels removed to date
    - In-cell work to be complete in January 2010
  - Head End Cells
    - Decontaminating the Process Mechanical Cell Crane Room Extension (PMCRE)

ARC asbestos removal on 28-foot-tall vessel complete

Vessel being removed from XC-3

Crane lift of waste containers from PMCRE

Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

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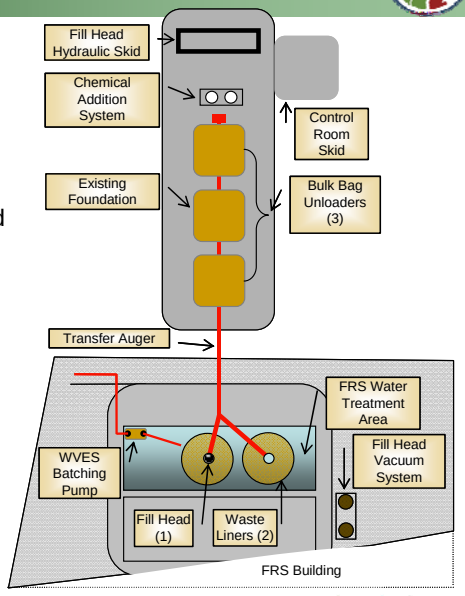
Main Plant Liquids Solidification

- Solidify ~7,500 gallons of residual liquids from flushing the Liquid Waste Treatment System tank in the Main Plant (Tank 5D-15A1 in the Uranium Product Cell)
  - Will use process similar to that used for solidifying the sodium-bearing waste in 2004
    - Process knowledge
    - Lessons learned
  - System will be placed in the Fuel Receiving Storage area, for potential future reuse during Main Plant decommissioning



Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

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Main Plant Liquids Solidification (cont)

- Major Tasks
  - Develop recipe
  - Design Systems: waste liquid feed, dry ingredient feed, controls, ventilation
  - Revise and submit RCRA Part A permit application
  - Procure equipment, install and check-out
  - Develop waste profile, obtain NTS approval
  - Train personnel
  - Conduct readiness evaluation
  - Verify stabilization to land disposal restrictions and compliance with waste acceptance criteria
  - Ship waste containers to disposal site

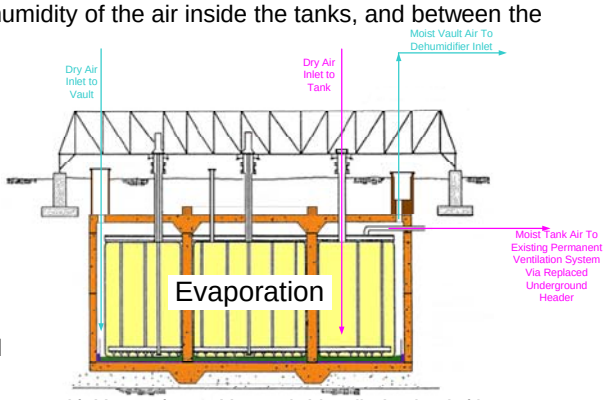
IP-2 containers, like the ones used for shipping sodium-bearing waste in 2004 shown above, will be used for this project

Tank & Vault Drying System

- Design, install and operate the Tank and Vault Drying system in all four underground storage tanks and the three associated vaults by December 31, 2010
  - Solidification of Tank 8D-4 liquids (including the Decontaminated Tank 8D-4 liquid) will be completed by June 30, 2011
  - Integrate Recovery Act scope with the following scope:
    - Waste Tank Farm isolation
    - HLW Tank characterization
    - Liquid removal from the STS vessels
    - Groundwater infiltration mitigation

Tank & Vault Drying System (cont)

- The T&VDS will:
  - Eliminate liquid heels in Tanks 8D-1, 8D-2, 8D-3 and 8D-4
  - Reduce the risk and consequences of a tank leak
  - Reduce the relative humidity of the air inside the tanks, and between the vaults and the tanks
  - Reduce corrosion and prolong the lives of the tanks
  - Additional decontamination of 8D-4 liquid
  - Solidification of decontaminated 8D-4 liquid and shipment for disposal



Simplified drawing of proposed drying method that will reduce the risk of the tanks leaking or corroding and prolong the life of the tanks for up to 30 years

Radioactive Waste Management

- Accelerate processing of Contact Handled-Transuranic (CH-TRU) waste, legacy (stored) Low-Level Waste (LLW), and Mixed LLW (MLLW) for offsite disposal by December 31, 2010
  - Two strategies:
    - Process 5,100 ft^3 of legacy LLW and MLLW off-site
      - Procurement underway
    - Employ a second crew to accelerate legacy CH-TRU processing on-site
      - Second crew deployed in October
      - Combination of new and experienced operators
  - Modifications made to enable CH-TRU waste processing in two facilities
    - Waste Packaging Area (WPA)
    - Container Sorting and Packaging Facility (CSPF)

CH-TRU waste processing in the WPA

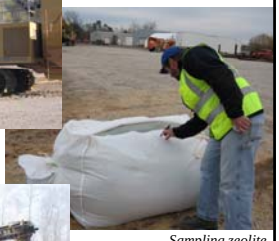
Sr-90 Groundwater Plume

- Install a permeable reactive in-ground barrier that will contain a naturally-occurring mineral (zeolite) to remove Strontium-90 from groundwater by adsorption as the groundwater passes through the barrier by December 2010
  - Major activities include:
    - Install barrier using a continuous trencher that can excavate trench to required depth and width, and place zeolite in excavation
  - WVES partnering with University at Buffalo and AMEC Geomatrix

Sr-90 Groundwater Plume (cont)

- Recent Actions
  - September
    - Completed report on field characterization of the plume
  - October
    - Completed draft zeolite testing laboratory report
  - November
    - Conducted preliminary permeable treatment wall design review
    - Conducted test of zeolite installation using one-pass trenching equipment

One-pass trencher assembled

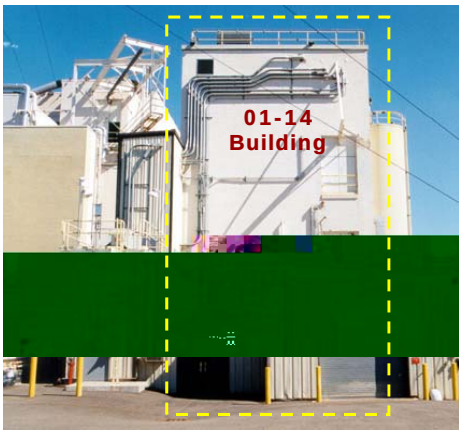


Sampling zeolite

Trencher in operation

Section of test trench

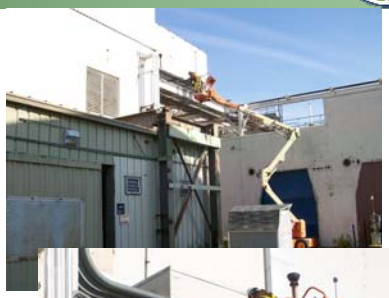
Remove 01-14 Building



- Decontaminate and demolish the 01-14 Building
  - Reduce future infrastructure and support costs
  - Provide a model for demonstrating demolition techniques and cost data directly applicable to the future potential Main Plant demolition

Remove 01-14 Building (cont)

- Demolition Preps are underway
  - Isolate electrical equipment
  - Drain and sever incoming and outgoing piping runs for steam, water, air, chemical and process piping, communications lines
  - Cap and air-gap utility lines
  - Isolate and stabilize filter bank with filters
  - Remove remaining process piping
  - Isolate, stabilize and prepare the Waste Dispensing Vessel for removal during demolition
- Demolition contractor mobilize June 2010
- Demolition complete October 2010



Electrical equipment isolations and piping removal began in Oct