High-Level Waste Canisters Relocation and Storage Project Overview
Quarterly Public Meeting

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Objective: Relocating waste from Main Plant’s High-Level Waste (HLW) Interim Storage to a stand-alone dry cask storage system:

- 275 HLW canisters
- 2 evacuated canisters
- 1 non-routine HLW canister (WV-413)
- 2 Spent Nuclear Fuel (SNF) debris drums

New Storage Location for the High-Level Waste Canisters
HLW Canister Relocation & Storage Project

Technical Approach
- Move HLW canisters from Chemical Process Cell racks to decontamination station
- Decontaminate each HLW canister
- Load 5 HLW canisters into multi-purpose canister (MPC) within shielded cask
- Secure and weld the MPC lid remotely
- Transfer the casks to new storage location for eventual shipping

Use current licensed SNF shipping cask, multi-purpose canister (MPC) overpacks, and current SNF storage cask designs.

MPC Transfer (Future)

When ready to ship, MPC transferred from Storage Cask to Shipping Cask

MPC/Shipping Cask configuration will be NRC licensed for HLW Certificate of Compliance (CoC)

HLW Destined for Storage Pad
- 278 HLW Canisters
- Canister Features
  - 10’ high x 2’ diameter
  - 304L stainless steel
  - Filled weight: 5,200 lbs. each

HLW Overpack w/ Internal Basket
- 304L stainless steel with welded 4” thick lid
- Each overpack to hold 5 HLW canisters
- Unloaded weight: 14,500 lbs.
**Major Subcontracts**

NAC International
- HLW Storage System

Butler Construction Co.
- Construction of Storage Pad

**NAC Scope**

- The design, fabrication, and delivery of a HLW Storage System
  - 56 overpacks and storage casks
  - Storage Pad (design only)
- In-facility transport equipment
- MPC lid welding equipment
- Ancillary equipment (e.g., lifting fixtures)
- Equipment and transportation of loaded storage casks from the Main Plant to the storage pad
- Design and specifications of storage pad
- Data and analysis to support the design and safety analysis (DOE 10 CFR 830)

- NRC Coc for HLW shipping using an approved shipping cask (NAC-STC)
- Training and mockup support
Notes:
Transfer cask height must be less than 137.5-inches (6-inch margin) and fit through opening dimensions shown.
Recent/Current Activities

Chemical Process Cell (CPC) and Equipment Decontamination Room (EDR) Cleanup/Preparations

- CPC Waste Disposition
- Size Reduction
- Waste Packaging Activities

Recent/Current Activities

Canister Decontamination
- Performed testing
- Received/evaluated proposals for system

- Planning Canister Decontamination
- Remote Vacuuming of a Canister Top
- Remote Wiping of a Canister Top
- Vertical Decontamination Testing
Recent/Current Activities

Completed Storage System Design
- Multi-purpose Canister Overpack
- Vertical Storage Casks
- Transport system

Performed Hazard Analysis
- < Hazard Category 3

Certificate of Compliance
- Drafted/reviewed NAC shipping cask Safety Analysis Report amendment

Preparing for Vertical Storage Cask fabrication
- Liners being fabricated
- Planning on-site rebar/concrete forming for casks

Quality Control/Vendor Visits for Procurements

Vertical Storage Cask (VSC)
- 161” tall with lifting lugs
- 120” diameter, 20” concrete with 4” thick steel liner
- 14” thick bolted lid comprised of 4” steel and 10” concrete
- Unloaded weight: 133,500 pounds

Recent/Current Activities

EDR Design and Modifications
- Soaking Pit inspected/sampled
- Design 90% complete/includes floor loading upgrades

Equipment Procurement Awards for
- 8 VSC liners
- Materials for 8 MPCs
- TL22O transporter
- Transport A Frame and Tugger
- Quality Control/Vendor list completed for Vertical Storage Cask liner

Video Inspection of Pit
Recent/Current Activities

Storage Pad Design/Construction

- Subsurface soil characterization, hydrologic and hydraulic testing completed for pad site
- Surface soils and structural conditions testing/analysis completed for haul road
- Final design completed
- Developed Stormwater Pollution Prevention Plan for construction
- Awarded construction contract to Butler

Storage Pad Features

- Excavation up to 12 feet
- Placement of approximately 2,800 cubic yards of locally-produced concrete.
- Three-foot-thick structurally engineered reinforced concrete
- Pad dimensions: 144’ X 110’
- Engineered crane and approach pads
  - Concrete approach: 98’ X 170’
  - 2-Crane pads: 26’ X 144’ each
- Construction to complete in November

Storage System Features

- Minimum design life of 50 years (casks and pad)
- Loaded individual storage cask weight is ~175,000 pounds (87.5 tons)
Project Look Ahead

- Evaluate and award procurement for
  - Design and fabrication of decontamination system
  - Automatic Welding System for MPCs
  - Engineering and construction for structural floor modifications
- Vertical Storage Cask fabrication startup
- Characterize/Grout Soaking Pit
- Waste Compliance Plan submittal
- EDR floor core borings
- Haul road upgrades
- Deliveries
  - 8 Vertical Storage Cask liners - Oct
  - Materials for 8 MPCs - Dec
  - TL220 transporter - April
  - Transport A Frame and Tugger - April

Current HLW Project Schedule

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<thead>
<tr>
<th>Major Tasks</th>
<th>Projected Date</th>
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<tbody>
<tr>
<td>Construct Storage Pad</td>
<td>November 2013</td>
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<tr>
<td>Obtain DSA Approval (DOE Safety Evaluation Report)</td>
<td>December 2013</td>
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<tr>
<td>Obtain NRC Certificate of Compliance (CoC) for Shipping HLW</td>
<td>November 2014</td>
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<td>Approved Start of Transfers (Operations)</td>
<td>September 2016</td>
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<td>Complete Relocation of Canisters/SNF debris/etc.</td>
<td>June 2018</td>
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