Waste Encapsulation and Storage Facility Capsules

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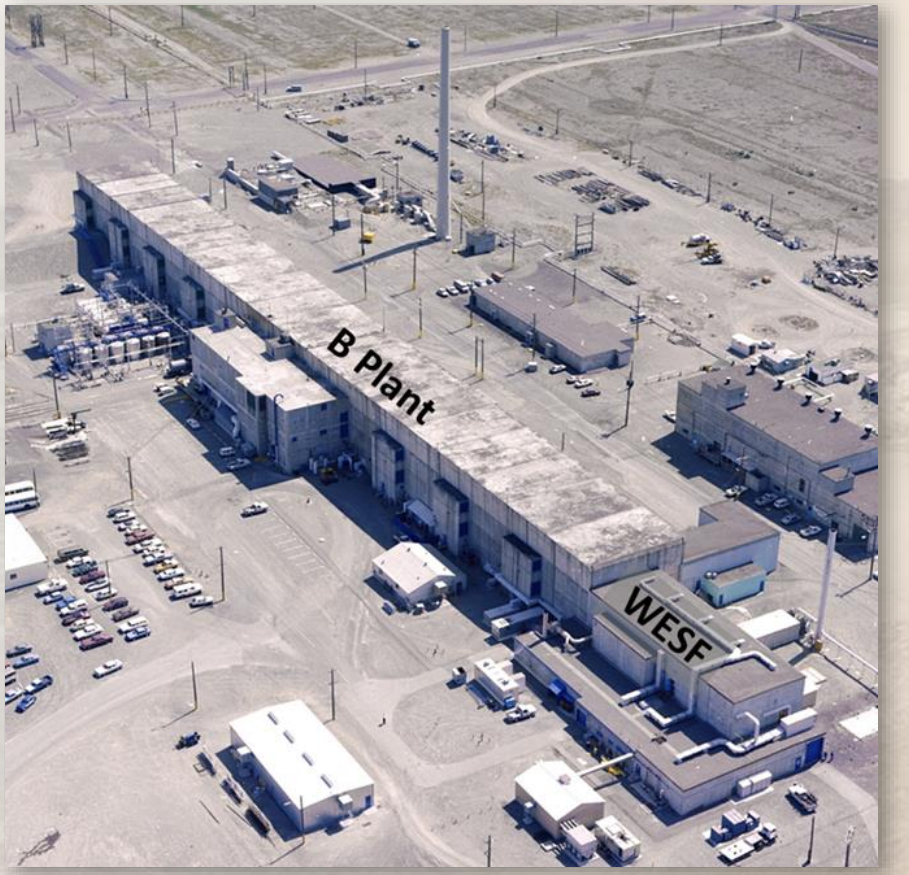
Agenda

- Introductions
- Cesium and Strontium Capsule History
- DOE-RL Planning for Extended Capsule Dry Storage
- Integration with the DOE-HQ Deep Borehole Initiative

Capsule History

- In the 1970s radioactive cesium and strontium were removed from underground waste tanks
  - Reduced the amount of heat generated in waste tanks
  - Provided cesium and strontium for commercial applications
- Between 1974 and 1985, the WESF encapsulated cesium and strontium
  - Double-walled, stainless steel capsules
  - Capsules were welded and leak tested



Capsule History (2)

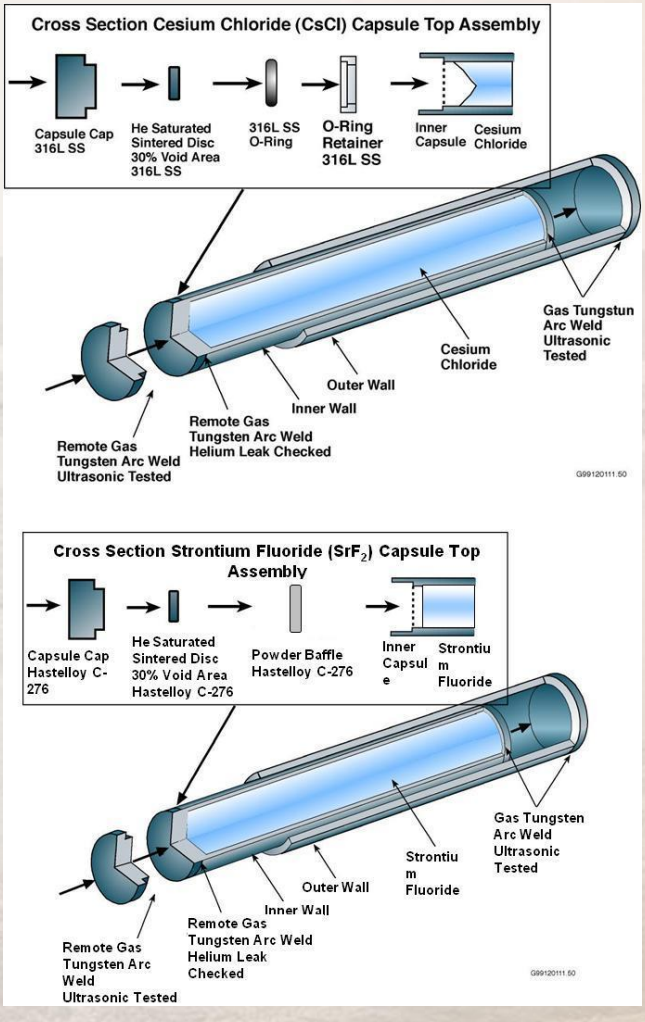
- During WESF operations, hot cells allowed workers to safely handle the cesium and strontium
  - Provided shielding, manipulators, and processing equipment
- WESF was placed into surveillance mode in 1985

Capsule History (3)

- 1,936 capsules are currently at WESF
- Capsules are located in Pool Cells
- 1,335 cesium capsules
- 601 strontium capsules
- Contain approximately 100 million curies
- About a third of the total cesium and strontium activity at Hanford

Capsule History (4)

- Capsules are double-contained
- Length 20 to 22 inches
- Outside Diameter 2.6 to 3.3 inches
- Capsules typically weigh ~25 pounds
- Heat in a cesium capsule ~15 to 181 watts
- Heat in a strontium capsule ~20 to 462 watts



Current Activities

WESF Stabilization and Ventilation Project

- Replace an existing exhaust ventilation system
- Stabilize legacy contamination to prevent a release to the environment
- Project is essential for the continued safe and compliant operation of WESF
- Project is compatible with future activities

Deep Borehole Disposition of Capsules

- DOE-RL participating in the DOE-NE (Nuclear Energy) Deep Borehole Feasibility Study
- Cesium and Strontium Capsules are one of three candidate wastes being considered
- DOE (national-level) expects to receive proposals to drill a small characterization borehole in fiscal year 2016 as part of the feasibility study.
- DOE-EM planning to develop small-diameter universal canister suitable for disposal in deep borehole or mined repository.
- As feasibility study progresses, (incl. as DOE-RL) will work closely with NE to establish canister specifications and other parameters for disposal.

Questions?