Hanford Spent Nuclear Fuel Facility Aging

Presented to: Nuclear Waste Technical Review Board

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Hanford Spent Nuclear Fuel

- Hanford Spent Nuclear Fuel (SNF) is consolidated at the Canister Storage Building and the 200 Area Interim Storage Area
  - ~2,100 metric tons of heavy metal
  - ~56 million curies of radioactivity in the SNF
- SNF safely stored awaiting disposition to a National Repository
Spent Nuclear Fuel Disposition Path

Fuel Packaged in Multi-Canister Overpacks for Canister Storage Building
N Reactor and Single Pass Reactor Fuel
- 389 Multi-Canister Overpacks
Shippingport Pressurized Water Reactor Fuel
- 18 Multi-Canister Overpacks

K Basin "Knock-Out Pot" Product Material
- 5 Multi-Canister Overpacks

Fuel Packaged in Dry Storage Casks for the Interim Storage Area
Fast Flux Test Facility Fuel
- 49 Interim Storage Casks
Other Irradiated Nuclear Fuel - DOE Owned
- 6 Casks of Commercial Origin
- 24 Casks of Fuel from Small Test Reactors

Potential Future Inventories
Fuel from Transuranic Waste Retrieval Activities
- 67 Small Dry Storage Casks
Fuel Found during Remediation of Burial Grounds/Facilities
- Anticipate less than 20 Small Casks

Central Plateau Irradiated Nuclear Fuel Consolidation Area

200 Area Interim Storage Area
(Dry Cask Storage)

Canister Storage Building
(Vault Storage)

Repackaging for Off-Site Shipment and Final Disposition

National Repository

DOE Standardized Canisters
Multi-Canister Overpacks
Canister Storage Building (CSB)

- Shielded vault storage of spent nuclear fuel in Multi-Canister Overpacks (MCOs)
- MCOs are passively cooled by convection
- Initiated operations in 2000
- CSB and MCOs have a 75-year design life

Left: CSB interior. Center: Empty MCO loading into cask at CSB. Far Right: CSB vault construction.
200 Area Interim Storage Area (ISA)

- Provides interim storage of spent nuclear fuel in dry storage casks
- Initiated operations in 2002
- Storage casks have design life of 40-50 years
- Repackaging required for off-site disposition

Far Left: Cask placement at ISA. Center: TRIGA Rad-Vault lid installation. Far Right: NAC-1 Casks in ISO (standard) Containers