HI-STORE CISF:
A Consolidated Interim Storage Facility for Used Nuclear Fuel in Southeast New Mexico

34th INMM Spent Fuel Management Seminar
Evolving Options for SNF Management

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Consolidated Interim Storage

Topics

✔ About Holtec International
✔ Our Message on Consolidated Interim Storage
✔ HI-STORE: Holtec’s Consolidated Interim Storage Facility for Used Nuclear Fuel & High Level Waste (HLW)
✔ Site-specific License and Construction Timeline
✔ No. 1 Perceived Issue?
Who is Holtec International?

- A vertically integrated turnkey supplier of goods and services to the power generation industry
- Established in 1986
- Orders booked for future deliveries: 5.0 Billion USD +
- No history of long-term debt
- Highest industrial credit rating [D&B-1R2]
- Financially strong with self-financed R&D
- Largest exporter in US for capital equipment supporting the nuclear industry
- 116 nuclear plants worldwide: 65 domestic, 51 international
- Over 60,000 SNF assemblies loaded into Holtec Dry Cask Storage/Transport Systems
- 1,200 + Holtec supplied systems are loaded
Core Business Activities

- Safe & Secure Used Fuel Storage
- Heat Transfer Equipment
- SMR-160 Delivery
- Decommissioning of Retired Nuclear Plants
- Consolidated Interim Storage
Holtec’s Worldwide Dry Storage and Transport Experience

1,200+ Systems Loaded

116 Nuclear Plants Worldwide Rely on Holtec’s Dry Storage Technology for their Storage & Transport; 65 Domestic, 51 International
Holtec’s Manufacturing Capabilities
Three Major U.S. Manufacturing Plants

- Holtec Manufacturing Division (HMD)
  - Turtle Creek, PA
- Orrvilon, Inc. (ORR)
  - Orrville, Ohio
- Advanced Manufacturing Division (AMD)
  - Camden, NJ
- 1.4M ft² of Total Shop Space
Our Message on Consolidated Interim Storage

- **Safe**: The spent fuel storage system is designed and built to withstand natural and man-made events with no release of radioactivity.

- **Secure**: The spent fuel storage system and the facility provide an impregnable fortress for protecting the spent fuel against even the most egregious attacks.

- **Retrievable**: Allows removal of used fuel canisters from the facility to the final repository in one shift.

- **Temporary**: The canisters containing the spent nuclear fuel will be shipped off site to the DOE facility in the same manner they were shipped to the site.
HI-STORE CISF: A Consolidated Interim Storage Facility for Used Nuclear Fuel

- Holtec & ELEA Team – Public Private Partnership formed in 2016
- Eddy-Lea Energy Alliance, LLC
  - Long-standing NM alliance
  - Owners are:
    - Counties of Eddy & Lea
    - Cities of Carlsbad & Hobbs
  - Formed in 2006 under the NM Local Economic Development Act
- ELEA owns the property
- Holtec funding licensing and will operate the facility
- Robust scientific & nuclear workforce
  - WIPP
  - URENCO
Strong Local Support

- Strong support:
  - Local communities
  - State & Local government

- Letters from the Cities of Carlsbad and Hobbs

- Letters from Counties of Eddy and Lea

- Letter from Governor of New Mexico

- Memorial Letters from House and Senate of New Mexico

- New Mexico State Radioactive & Hazardous Materials Committee

- Letter from City of Tatum
HI-STORE CISF Utilizes the HI-STORM UMAX Technology

- Maximizes safety & security
- Stores used nuclear fuel in strength-welded canisters in below ground vertical silos
- Produces no pollution
- Does not need any water, nor does it emit any water or any chemical
- It does not make any noise
- No aquifers or ground water will be affected
- The radiation dose at the site’s protected boundary will be a small fraction of the cosmic radiation that bathes the state every single day
Initial Storage Capacity = 500 canisters (8,680 MTU)
Total Storage Capacity = 10,000 canisters (173,000 MTU)
Facility utilizes 500 of the 1,000 acres available
Operations could commence by 2023
HI-STORE Site-Specific License Timeline

- Application submitted to USNRC: March 2017
- Application accepted by USNRC: March 2018
- RAI #1 received 4 of 5 parts: various times in 2018
- Response to RAI #1 part 1 & half of 2: May & November 2018
- NRC ASLB Oral Arguments: January 23 & 24, 2019
- Response to RAI #1 part 2 remainder: January 31, 2019
- Response to RAI #1 part 3: March 30, 2019
- Response to RAI #1 part 4: March 15, 2019
- RAI #1 part 5 expected: TBD 2019
- RAI #2 (if needed): 2019
- NRC completes review: July 2020
HI-STORE Construction Timeline

- Pending Agreement w/DoE and/or Nuclear Utilities:
  - Construction Start: 2020 - 2021
  - Construction Complete: 2023
  - Accept First Shipment: 2023
No. 1 Perceived Issue?

- Industry has experience
- HI-STAR 190 is licensed for transport
  - High burnup fuel
  - Incorporates Part 72-71-72 requirements
  - Fabricated
- HI-STAR 100 is licensed for transport
  - Includes Humboldt Bay (HI-STAR HB)
  - Fabricated & in use for storage
- 8 & 12 axle rail car
- NEI Transportation Tabletop
Transport of Spent Nuclear Fuel is Proven and Safe

According to a report prepared by Oak Ridge National Laboratory and Argonne National Laboratory (2016):

- More than 25,000 shipments of used nuclear fuel have been made worldwide, shipping more than 87,000 Metric Tons of Fuel.
- All shipments were undertaken without any injury or loss of life.

According to the NRC, more than 1,300 used fuel shipments have been completed safely in the United States over the past 35 years:

- Most of the used fuel was shipped by rail.
- All shipments were completed with no release of radioactivity.

The U.S. Navy reports that, over the past 60 years, it has completed nearly 850 shipments of used fuel from naval propulsion reactors, covering 1.6 million transportation miles.

- All shipments were completed with no release of radioactivity.
Questions?