HI-STORE CISF:
A Consolidated Interim Storage Facility for Used Nuclear Fuel & HLW

Briefing
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Vice Chair Eddy-Lea Energy Alliance
2019
WHO IS EDDY-LEA ENERGY ALLIANCE

- JPA Between Carlsbad, Hobbs, Eddy & Lea Counties
- Formed For Joint Economic Development Efforts
- Bought 1,000 acres: Geologically stable, dry, elevated land
- BRC Strongly Recommending CIS
- Thoroughly Characterized
- Electric, water, roads & rail Access
- Remote location:
  - 35 miles from nearest town
  - Midway between Carlsbad & Hobbs, NM
- Robust scientific & nuclear workforce
  - WIPP
  - URENCO
Strong Local Support

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

- Resolutions from the Cities of Carlsbad and Hobbs

- Resolutions from Counties of Eddy and Lea

- Memorial from House and Senate of New Mexico

- Member’s letter of New Mexico State Radioactive & Hazardous Materials Committee of support

- Letter from City of Tatum
WHY HOLTEC?

- Issued RFI and Received Presentations from Majors
- ELEA Board Visited Manufacturing, Storage Systems, Consulted Experts
- Issued RFP
- HOLTEC Outright Winner
  - Safest Most Robust System – Only System Approved for San Andres Fault
  - 60% of SNF Storage in the U.S.
  - Strong Record of Safety
  - Extremely Strong Financially
  - Research Oriented to Continue to Advance
  - Strong Leadership
SHIPPING AND STORAGE

(FOUR) LAYERS OF CONTAINMENT

FIRST: FUEL CONTAINING THE URANIUM IS A SOLID CERAMIC
SECOND: FUEL ROD IS ZIRCONIUM METAL
THIRD: CANISTER MADE OF STAINLESS STEEL CONTAINS USED FUEL
FORTH: TRANSPORT CASK OR SUB-SURFACE STORAGE FACILITY
NRC SAYS: ONE IN ONE BILLION CHANCE OF RELEASE!!!
HOLTEC 190
TRANSPORTATION CASK

Outer Layer – 1/2 inch SS
Next Layer – 6 ¼ “ SS Ribs with Neutron Absorber
Next Layer – 3 inches of SS
Next Layer – 3 ½ inches Lead Gamma Shielding
Inside Layer – 2 inches SS
The NRC requires spent fuel shipping casks to survive four tests in sequence:
1. free-drop impact,
2. puncture impact,
3. fire, and
4. water immersion.
TRANSPORTATION SYSTEM
HOW RAILROADS WORK

- 92% OF RAIL IS PRIVATELY OWNED
- DOT, NRC, FRA MAKE THE ROUTE DETERMINATIONS
  - ✓ CHOOSE BEST RAIL, SAFEST ROUTES TO DESTINATION
  - ✓ CAREFULLY INSPECTED BEFORE DEPARTING TO MEET STANDARDS
- DEDICATED TRAINS WITH 7 – 10 CARS
  - ✓ BUFFER CAR BETWEEN ENGINE & TRANSPORT CARS & SECURITY CAR
  - ✓ WILL HAVE A SECURITY CAR WITH GUARDS AND GUNS
  - ✓ SATELLITE TRACKED AND GIVEN RAIL PREFERENCE TO DESTINATION
- SLOWER SPEED ON ALL CLASSES OF RAIL FOR SAFETY (50 MP MAX)
- WEIGHT IS DISTRIBUTED BY ADDING AXLES TO CARS
- LOCOMOTIVES WEIGH THE SAME AS THE LOADED RAIL CAR
USED FUEL TRANSPORT HISTORY

- 1,300 Used Fuel Transports by Utilities Have Occurred in U.S. Without Incident or Release
- 850 Naval Fuel Transports by Navy Without Incident or Release
- 1,000s of Warhead Shipments Between Kirkland & Pantex
- 30,000 World Wide Transport Without Incident or Release
- WIPP 12,000 Shipments Without Release
- WIPP 14 Million Loaded Miles (moon and back 28 times)
- Sandia Does Cask Integrity Testing
- Casks are Virtually Indestructible
HOW WILL SHIPPING OCCUR?

- Will it be rail?
- Will it be barge?
- Will it be ship?
- Will it be heavy haul?
- Will it be all of above?
CEC Placement
CLSM Pour – Controlled Low Strength Material
Form for Top Pad
HI-STORE CISF Utilizes the HI-STORM UMAX Technology

- Below-grade, passive, vertical, air-cooled
- Maximizes Safety & Security
- Store canisters up to:
  - $75 \frac{3}{4}$ in dia. / 213 in tall
- Any US-origin commercial nuclear fuel approved by NRC:
  - Packaged in dry storage canisters
  - Stored in fuel pools
- Operational Advantages
- No repackaging required
WHAT ARE STATE & AREA BENEFITS?

- INCENTIVE PAYMENTS:
  - INCENTIVE PAYMENT IS TARGET OF GROSS REVENUE
    - ESTIMATE 25% LOCAL; 75% STATE FOR ROADS
  - $2.4 BILLION CAPITAL INVESTMENT
  - 215 HIGHLY PAID JOBS
    - 100 CONSTRUCTION WORKER FOR 10 YEARS
    - 100 TECHNICAL RAD TRAINED MATERIAL HANDLERS & SECURITY FORCE
      - 10 RAIL CAR AND TRANSPORT CASK MAINTENANCE
      - 5 CENTER OF EXCELLENCE FOR HOLTEC WORLD WIDE TRAINING
    - 15-30 SILO CONSTRUCTION WELDERS AND FABRICATORS
    - OTHER POTENTIAL SPIN-OFFS (Research: Aging, Science, Heat Transfer, etc)
HI-STORE Site-Specific License Timeline

- Application submitted to USNRC: March 2017
- Application accepted by USNRC: March 2018
- NRC public meetings (phone & in NM): April – May 2018
- RAI #1 received (partial): September 2018
- Adjudicatory process closed: September 14, 2018
- Holtec answers to petitions submitted: October 2018
- ASLB Oral Arguments: January 23, 24 2019
- RAI #2: February 2019
- ASLB Rejects Standing & Contentions: May 10, 2019
- Draft EIS: Late 2019?
- Final EIS: Summer 2020
- NRC completes review: Late 2020
- Construction: Early 2021
- First Shipment: 2023
FINAL THOUGHTS

- THERE WILL BE A CONSOLIDATED INTERIM STORAGE FACILITY!!
- YOU CAN HAVE IT IN NEW MEXICO OR TEXAS?
- IF IN TEXAS:
  - EUNICE 2 MILES AWAY, HOBBES 15 MILES & JAL 15 MILES
  - RAIL ROUTE THROUGH JAL & EUNICE
  - NEW MEXICO HAS ALL THE EMERGENCY RESPONSE RESPONSIBILITY 37 miles to Andrews
  - TEXAS GETS ALL THE BENEFITS & NEW MEXICO HAS ALL RESPONSIBILITY
- WIPP & URENCO HAVE BEEN GREAT PROJECTS FOR OUR AREA
- RURAL AREAS HAVE TO FIND THEIR NICHE
- RURAL AREAS DON’T TELL OTHERS WHAT BUSINESS TO PURSUE
- NO INTERACTION WITH WATER OR O&G INDUSTRY
- VERY BENIGN – NO PUMPS – NO MOVING PARTS – GETS COOLER EVERY DAY.
THANK YOU & Questions?