

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

Briefing

By: John Heaton

Vice Chair Eddy-Lea Energy Alliance

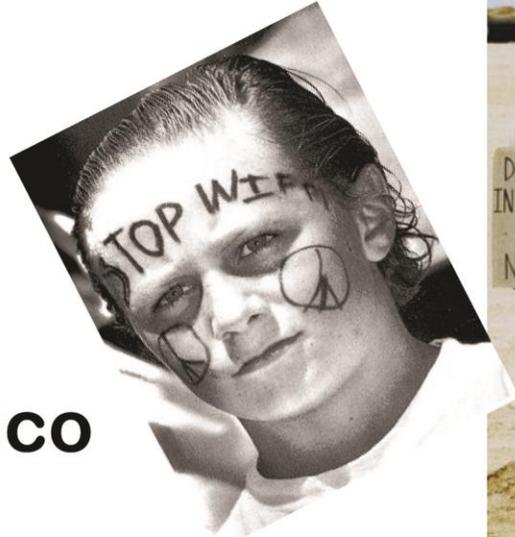
2019



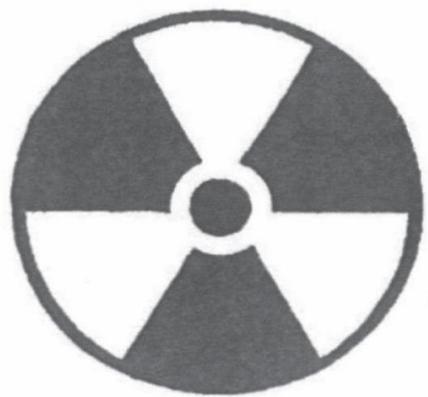
HOW DID WE COME TO FEAR NUCLEAR POWER?



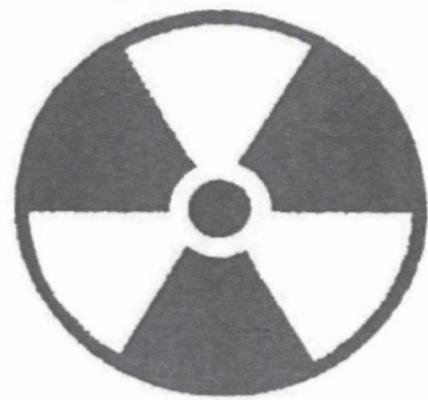
How did we come to fear nuclear power? SHUTTERSTOCK



1980's Santa Fe New Mexico



**ANOTHER
BUSINESS**



AGAINST WIPP

Concerned Citizens for Nuclear Safety



NOTHING

Scoping meeting on Holtec held in Hobbs

Curtis C. Wynne, Hobbs News-Sun Published 10:33 a.m. MT July 20, 2018



Buy Photo

(Photo11: Jessica Onsurez Current-Argus)

HOBBS, N.M. — When it's about radioactivity or nuclear power, it's going to be controversial.

Thursday's meeting of the New Mexico Legislature's interim Radioactive and Hazardous Materials Committee in Hobbs was no exception when rail transportation of spent nuclear fuel...



Editorial: NM, Holtec track records bury storage site worries

BY ALBUQUERQUE JOURNAL EDITORIAL BOARD
Tuesday, May 29th, 2018 at 12:02am



There are two ways to look at the proposal to license an interim storage facility in southeast New Mexico for the nation's spent nuclear fuel from power plants:

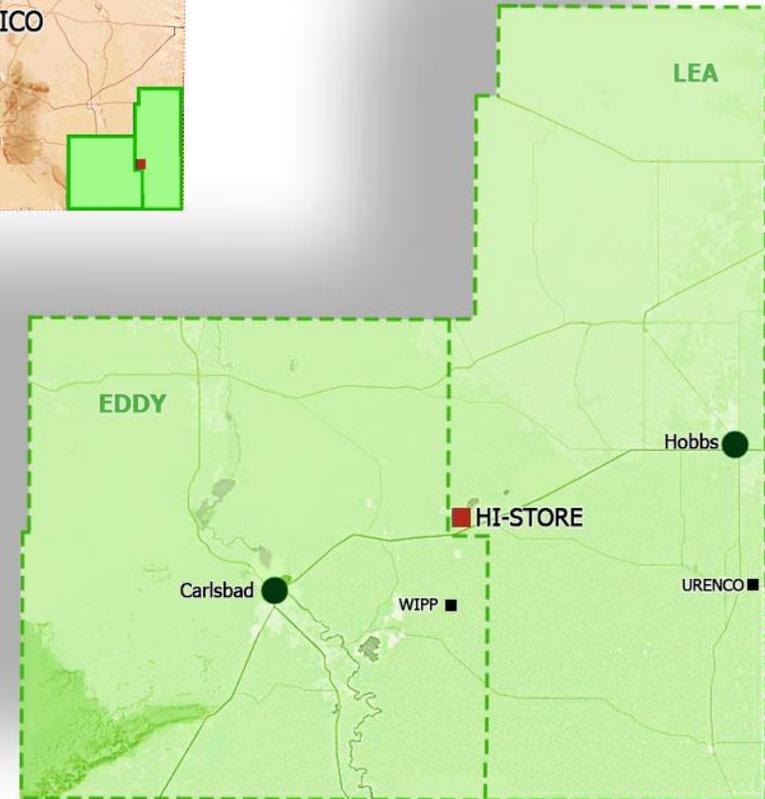
...New Mexico, a poor minority-majority state, is once again destined to be the dumping ground for dangerous items no other state will take, and those items

CHANGES



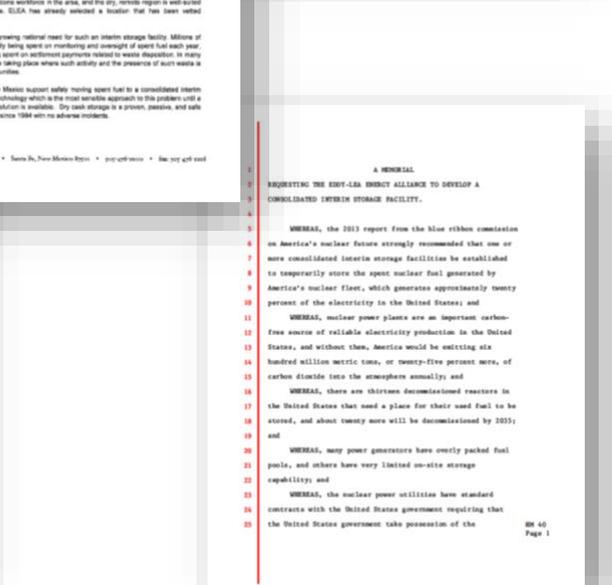
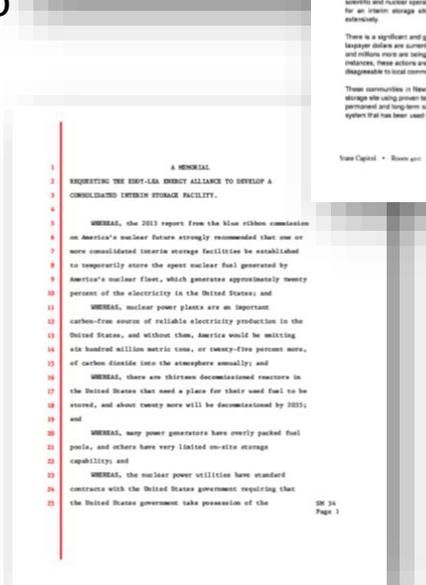
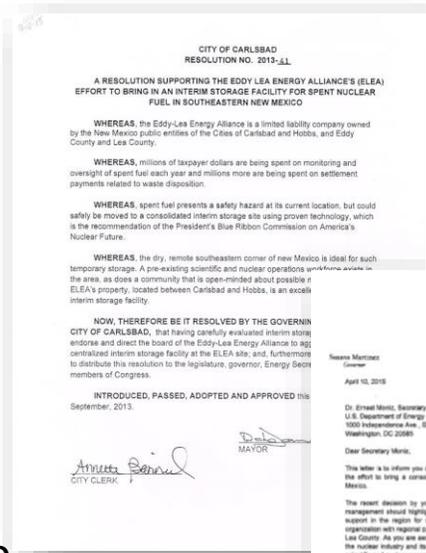
WHO IS EDDY-LEA ENERGY ALLIANCE

- 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
- 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





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



ENERGY ALLIANCE, LLC.

SHIPPING AND STORAGE (FOUR) LAYERS OF CONTAINMENT

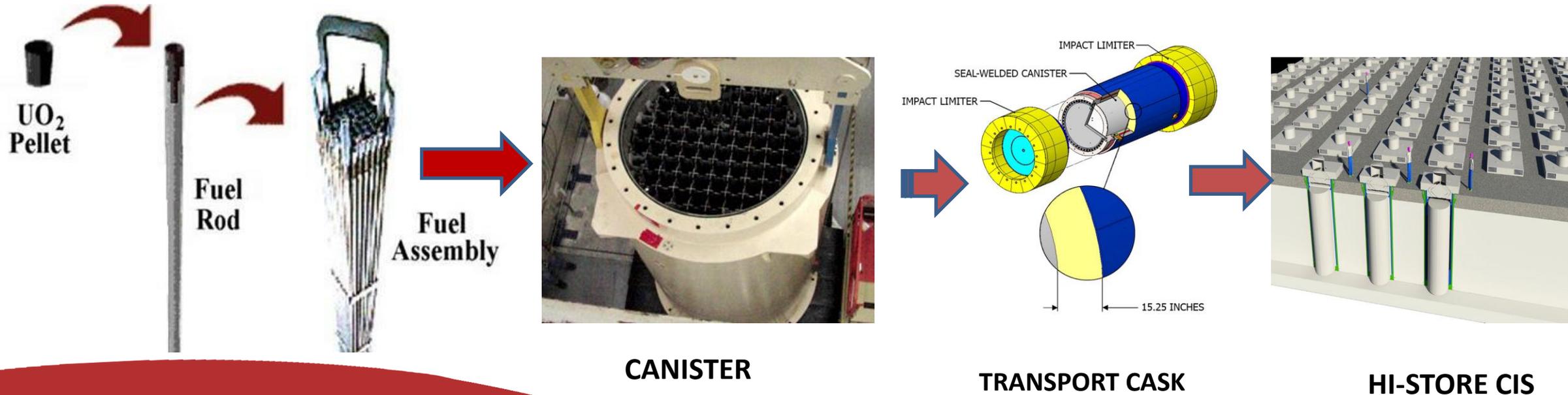


FIRST: FUEL CONTAINING THE URANIUM IS A SOLID CERAMIC

SECOND: FUEL ROD IS ZIRCONIUM METAL

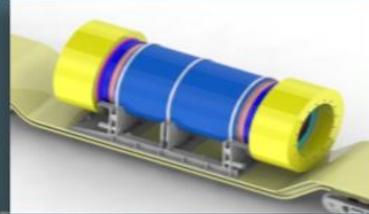
THIRD: CANISTER MADE OF STAINLESS STEEL CONTAINS USED FUEL

FORTH: TRANSPORT CASK OR SUB-SURFACE STORAGE FACILITY



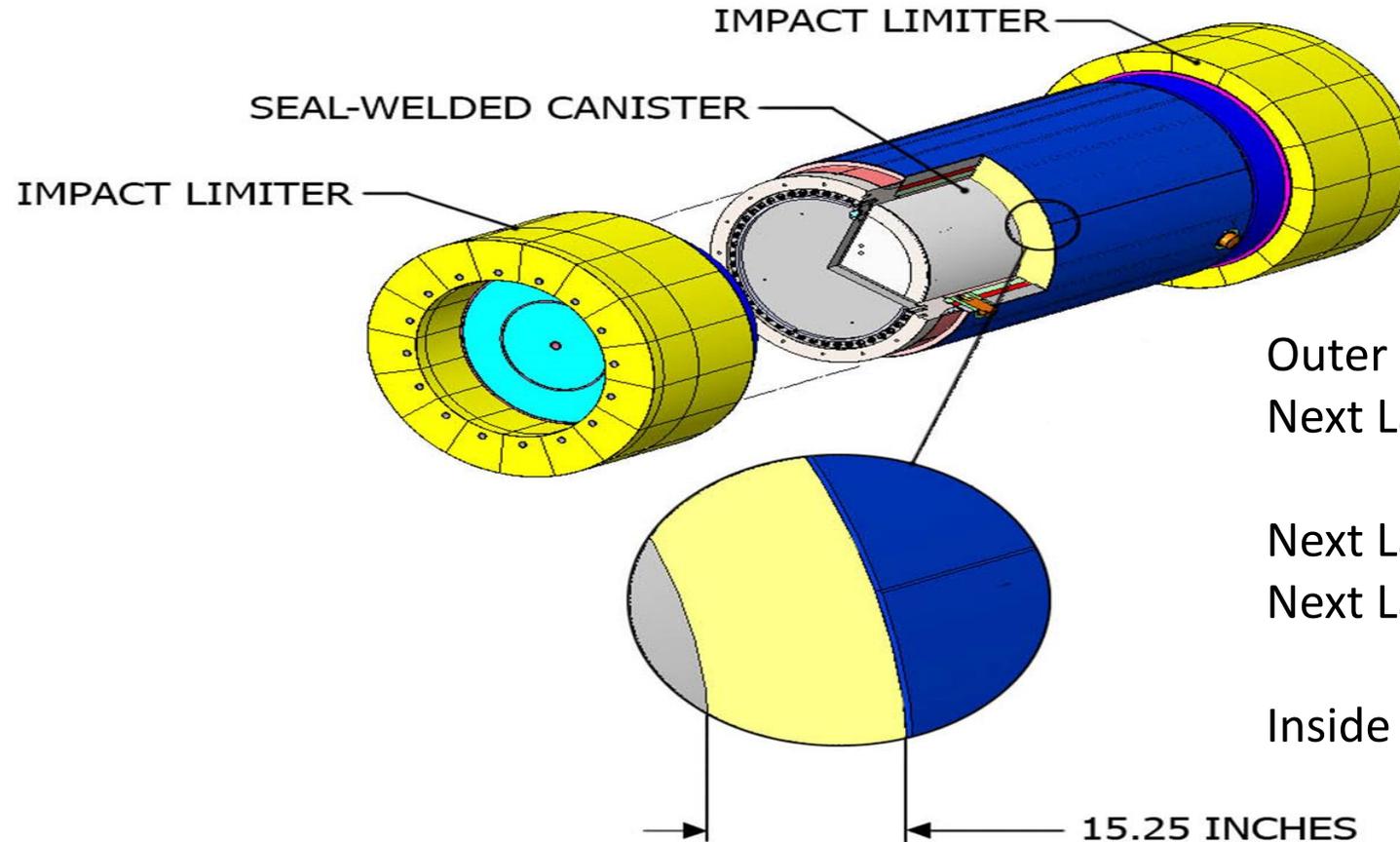
Rectangular Snip

Safety of Spent Fuel Transportation



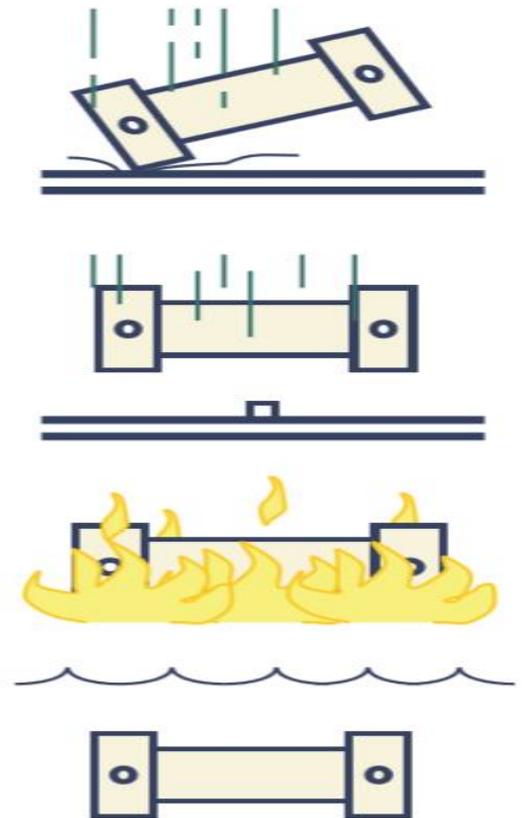
NRC SAYS:
ONE
IN
ONE BILLION
CHANCE OF
RELEASE!!!

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

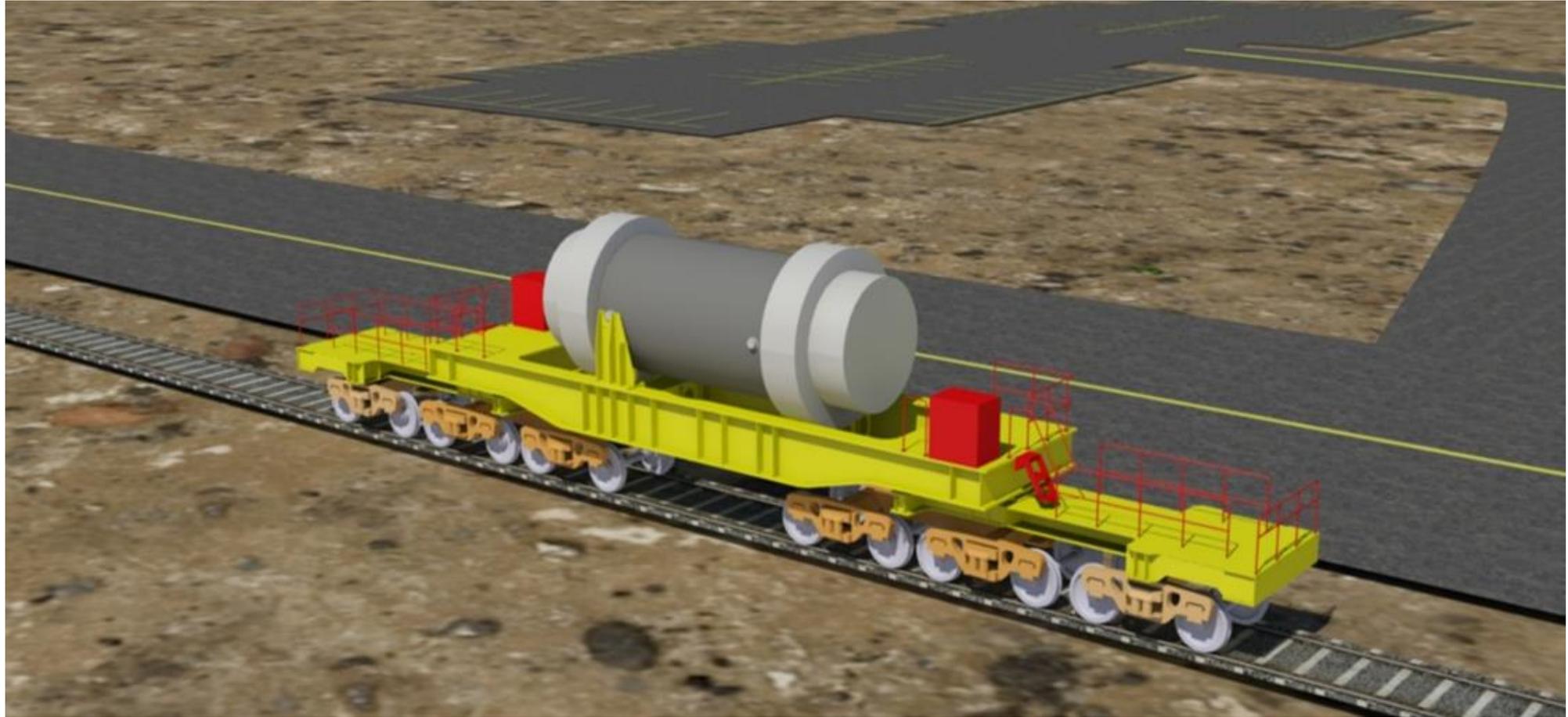
CASK TEST DROP ON SPIKE



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

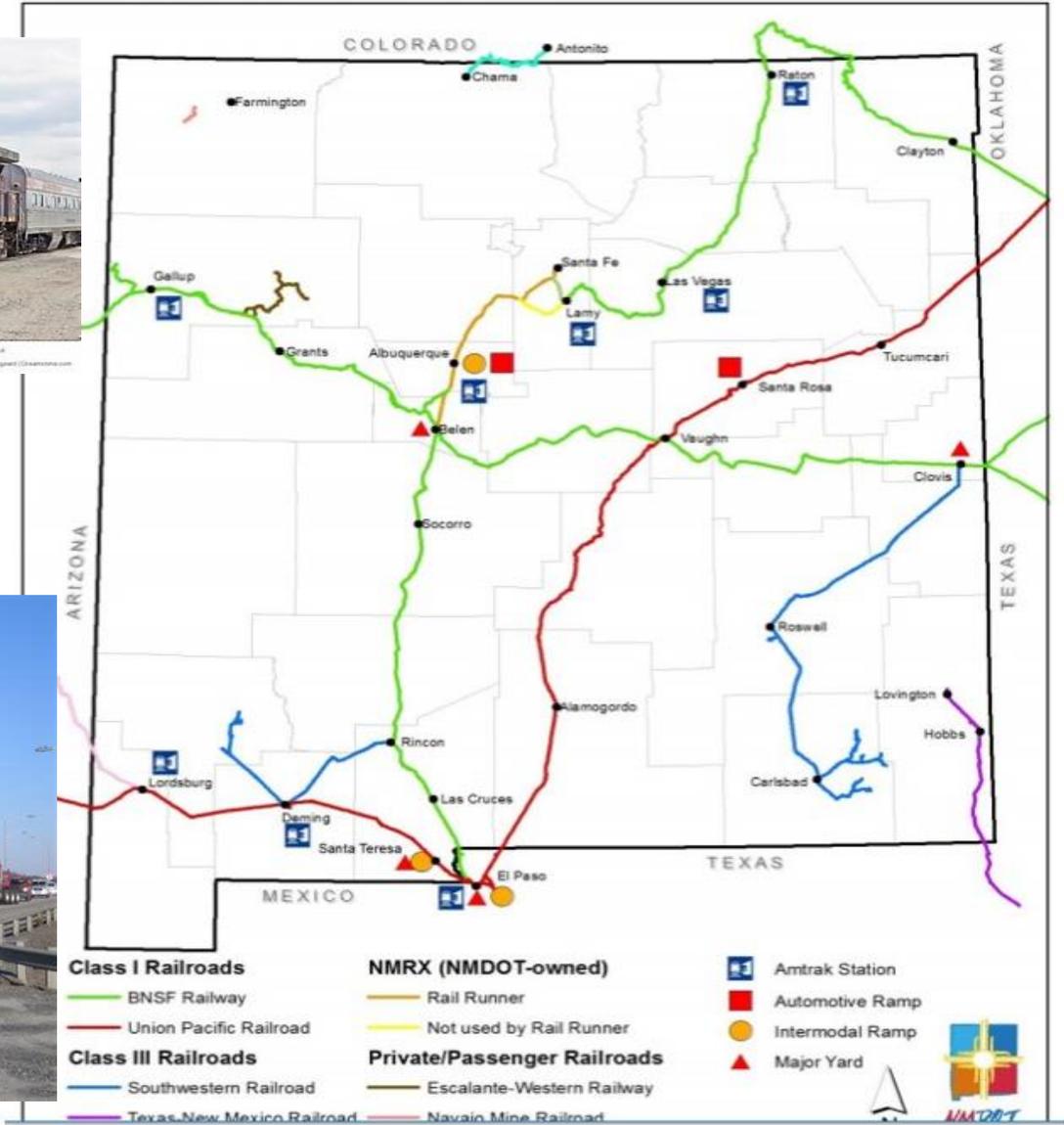
- 92% OF RAIL IS PRIVATELY OWNED
- DOT, NRC, FRA MAKE THE ROUTE DETERMINATIONS
 - ✓ CHOOSE BEST RAIL, SAFEST ROUTES TO DESTINATION
 - ✓ CAREFULLY INSPECTED BEFORE DEPARTING TO MEET STANDARDS
- DEDICATED TRAINS WITH 7 – 10 CARS
 - ✓ BUFFER CAR BETWEEN ENGINE & TRANSPORT CARS & SECURITY CAR
 - ✓ WILL HAVE 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?



EDDY - LEA



ENERGY ALLIANCE, LLC.

HI-STORE CONSTRUCTION

Excavation

www.holtec.com





CEC Placement



CLSM Pour – Controlled Low Strength Material



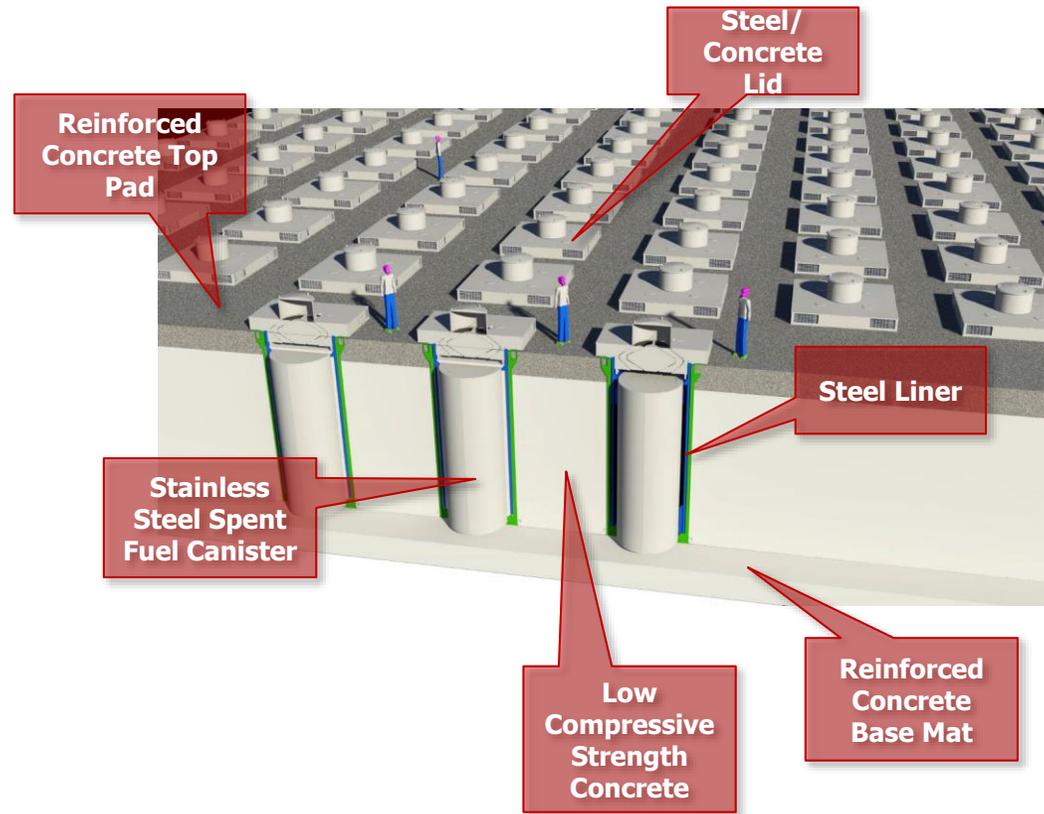


Upper Slab Pours



HI-STORE CISF Utilizes the HI-STORM UMAX Technology

- Below-grade, passive, vertical, air-cooled
- Maximizes Safety & Security
- Store canisters up to:
 - ✓ 75 ¾ 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
- RAI #1 partial: Sept 2018
- 5 NRC Public Meetings in NM: April 30 – May '18
- RAI #2: February 2019
- NRC Completes Review: July 2020
- Pending Agreement w/DoE and/or Nuclear Utilities:
 - ✓ Construction Start: 2020
 - ✓ Construction Complete: 2023
 - ✓ Accept First Shipment: 2023

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 Accept Standing & Contentions May 10, 2019
- Draft EIS June 2019?
- Final EIS Late Spring 2020
- NRC completes review: July 2020





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, HOBBS 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?

