

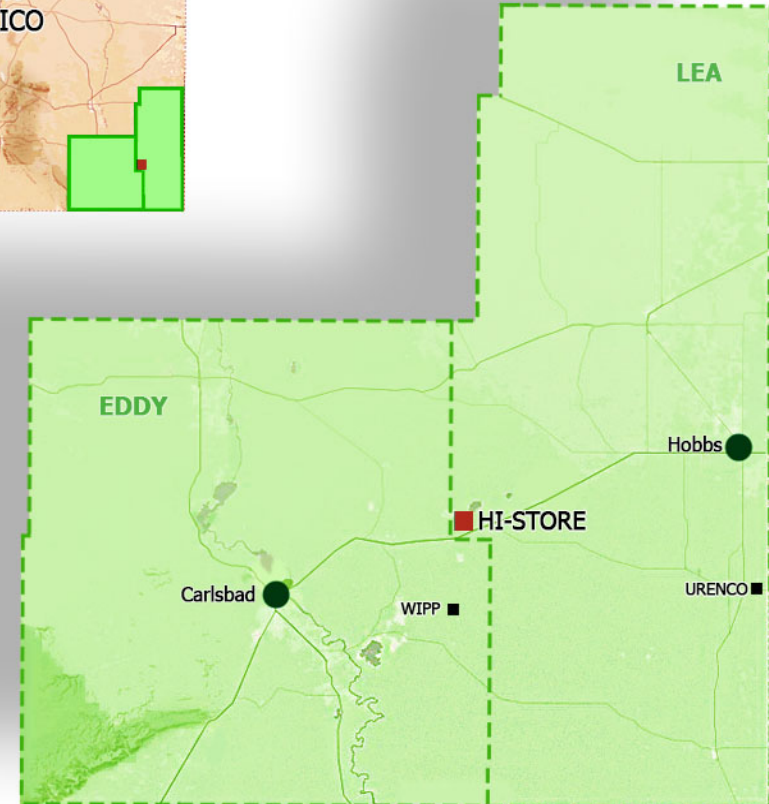
**HI-STORE CISF:**  
***A Consolidated Interim Storage  
Facility for Used Nuclear Fuel &  
HLW***

**Presentation To:**  
**REVENUE STABILIZATION & TAX POLICY COMMITTEE**  
**SANTA FE**

**By: John Heaton**  
**Vice Chair Eddy-Lea Energy Alliance**  
**October 29, 2018**

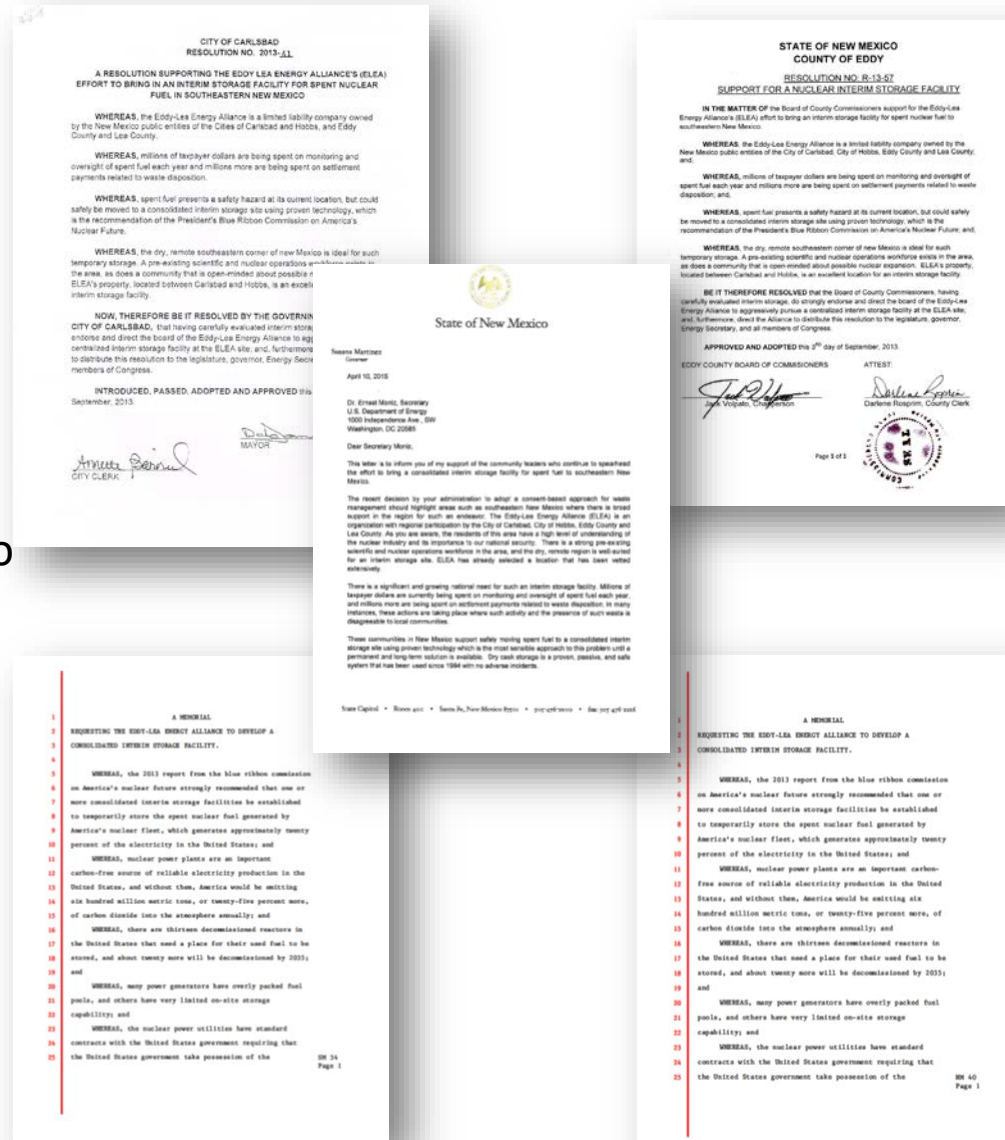
# WHO IS EDDY-LEA ENERGY ALLIANCE

- 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



# Who is Holtec International?

- A vertically integrated turnkey supplier of goods and services to the power generation industry
  - ✓ Design & Engineering
  - ✓ Licensing
  - ✓ Fabrication
  - ✓ Critical Material Supply
  - ✓ Construction
  - ✓ Site Installation
  - ✓ Operations
- Three U.S. manufacturing plants (1.3M ft<sup>2</sup>)
- Financially strong with self-financed R&D: SMR-160, Highest DB rating  
Decommissioning & Consolidated Interim Storage
- **105** nuclear plants worldwide: **59** domestic, **46** international
- **1,078** Holtec supplied systems are loaded: **141** systems in **21** campaigns scheduled for 2018
- Largest ISFSI at Chernobyl – **270** hybrid systems (NUHOMS / MPC)





EDDY - LEA

ENERGY ALLIANCE, LLC.

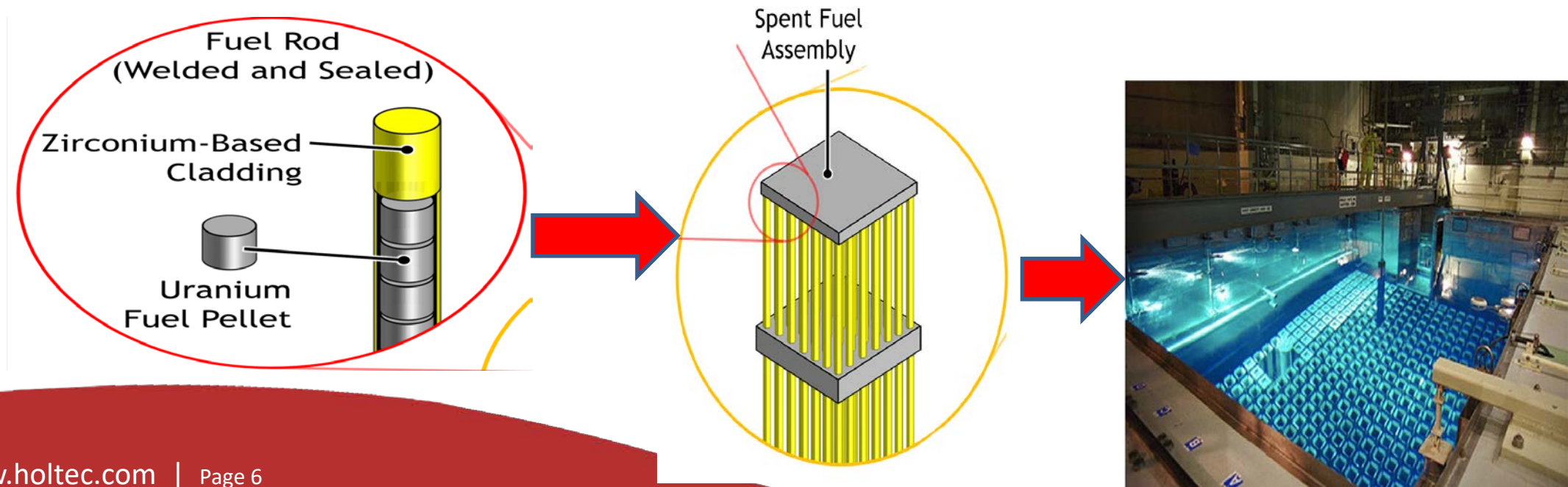
# WHY HOLTEC?



- 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

# WHAT IS NUCLEAR FUEL?

- Uranium 235 is Enriched to About 5%
- It Is Incorporated Into a Ceramic Pellet
- Placed into Zirconium Metal Tube about 12 feet long & welded shut
- Then Made into a Bundle of Fuel Rods Called an Assembly
- They Are Moved into The Reactor Core Where Fission Occurs





ENERGY ALLIANCE, LLC.

# SHIPPING AND STORAGE (FOUR) LAYERS OF CONTAINMENT

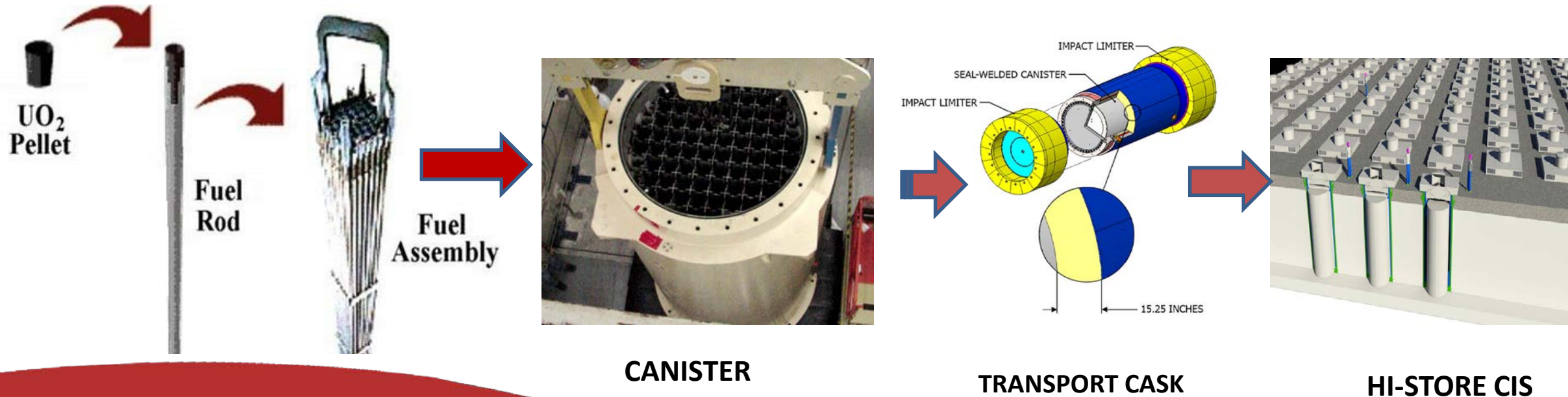


FIRST: FUEL CONTAINING THE URANIUM IS A SOLID CERAMIC

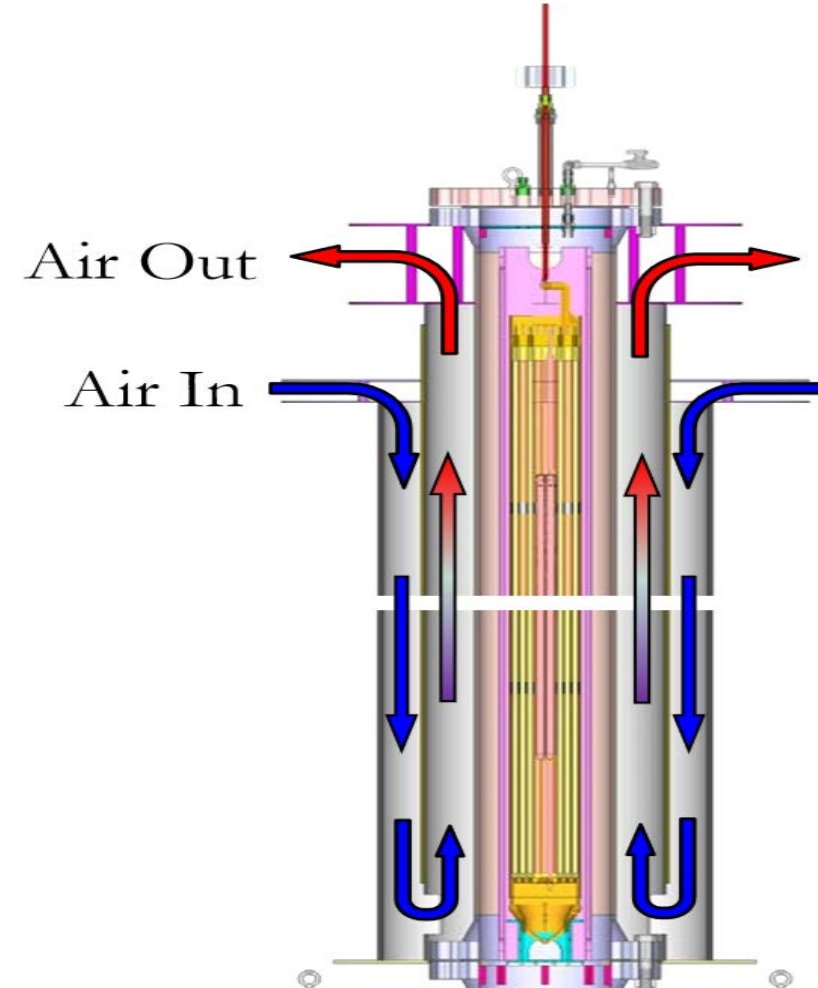
SECOND: FUEL ROD IS ZIRCONIUM METAL

THIRD: CANISTER MADE OF STAINLESS STEEL CONTAINS USED FUEL

FORTH: TRANSPORT CASK OR SUB-SURFACE STORAGE FACILITY

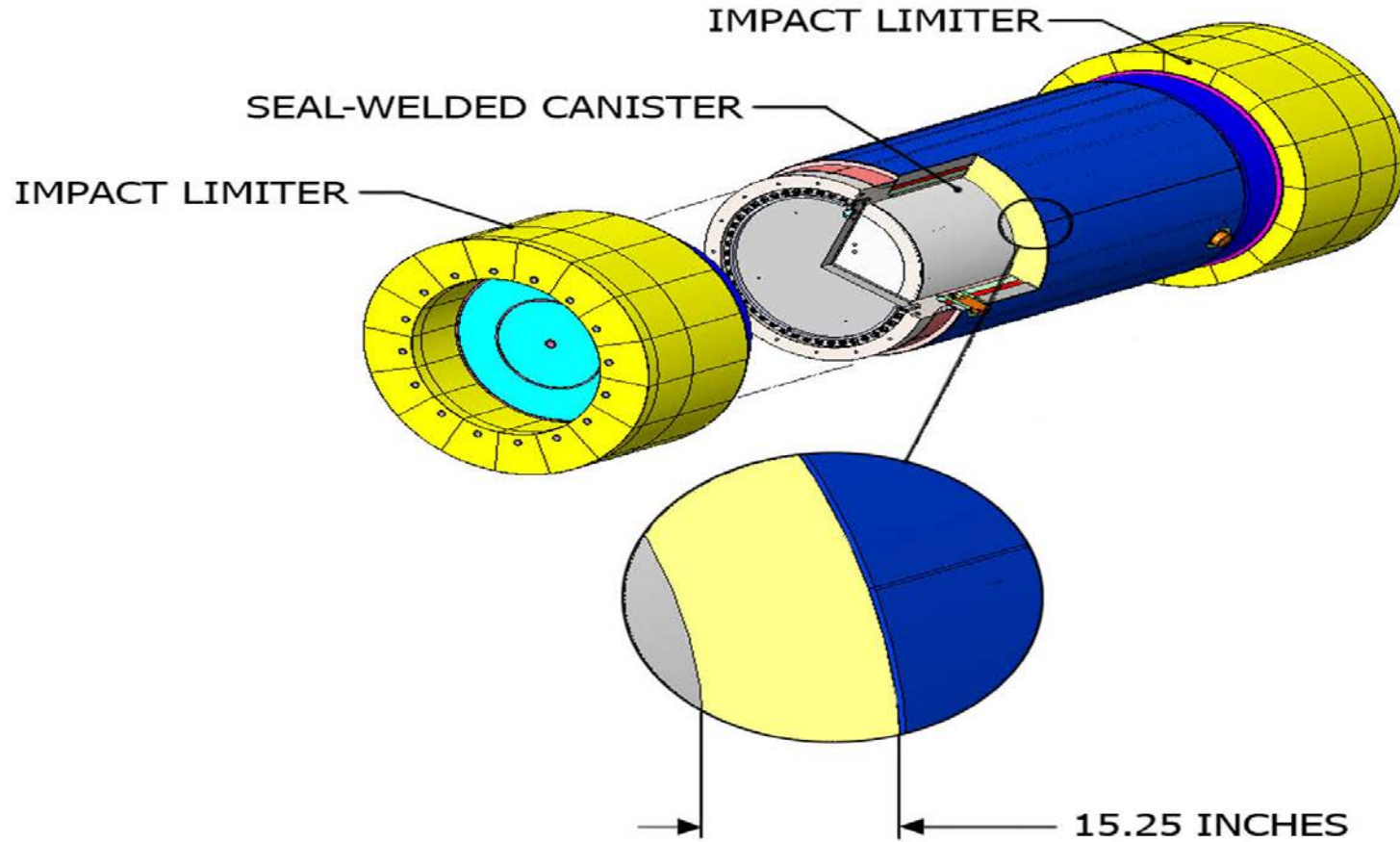


# SANDIA DRY CASK SIMULATOR CONFIRMS THERMO-HYDRAULIC MODELS

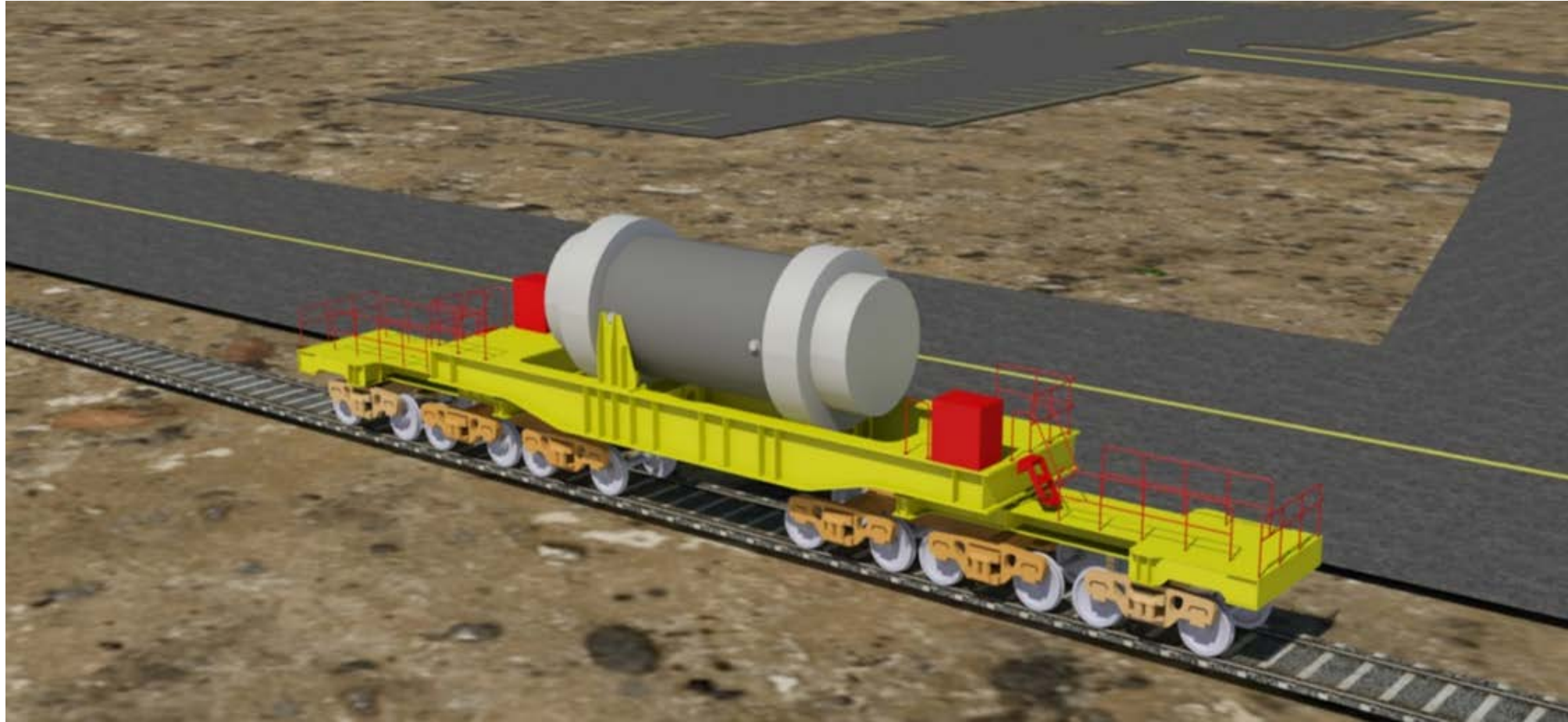




# HOLTEC 190 TRANSPORTATION CASK



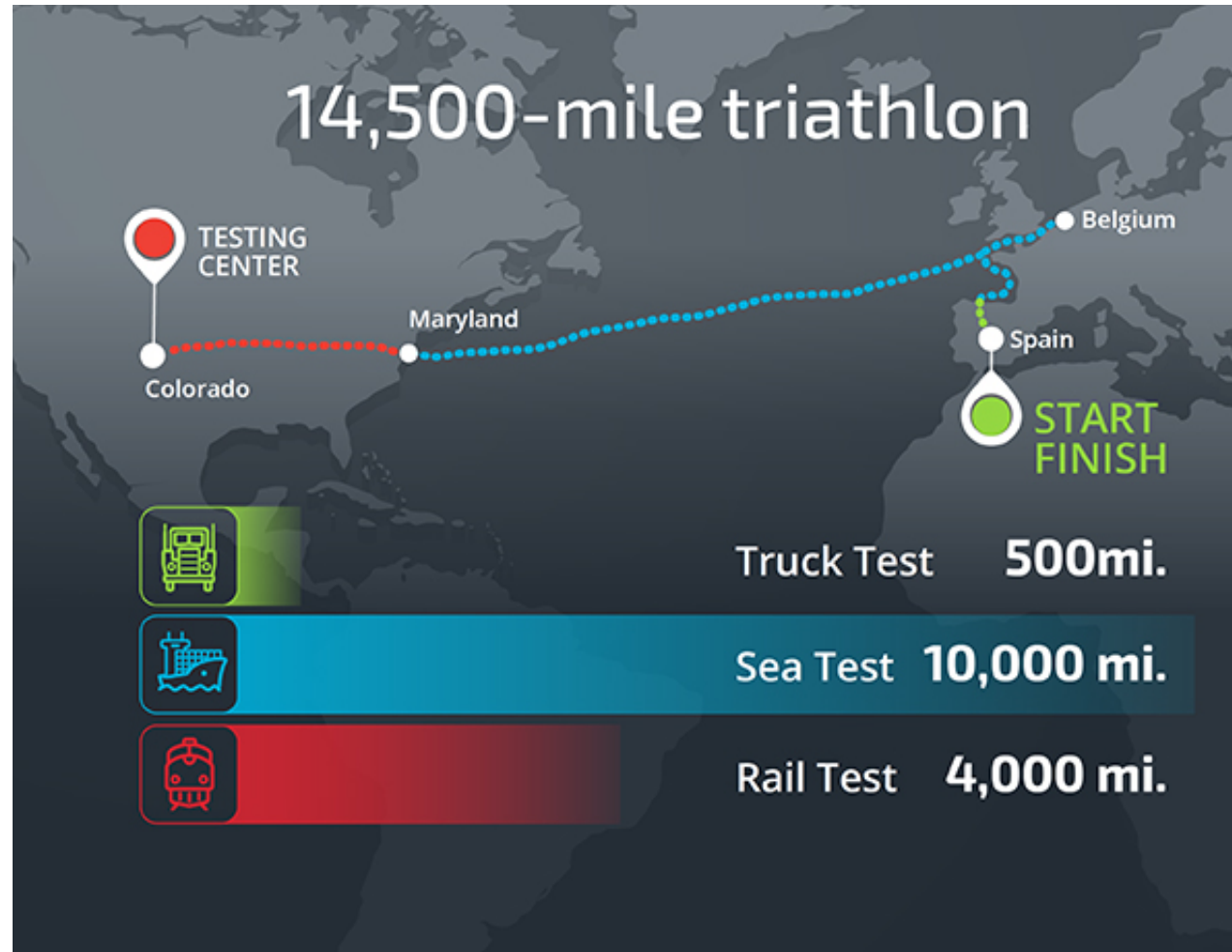
# TRANSPORTATION SYSTEM



# SANDIA ROAD, BARGE, SHIP, RAIL SHIPPING DEMONSTRATION



# ROAD, SEA, RAIL TESTING





# 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

EDDY - LEA



ENERGY ALLIANCE, LLC.

# HI-STORE CONSTRUCTION Excavation

[www.holtec.com](http://www.holtec.com)





# CEC Placement





# CLSM Pour – Controlled Low Strength Material



EDDY - LEA



ENERGY ALLIANCE, LLC.

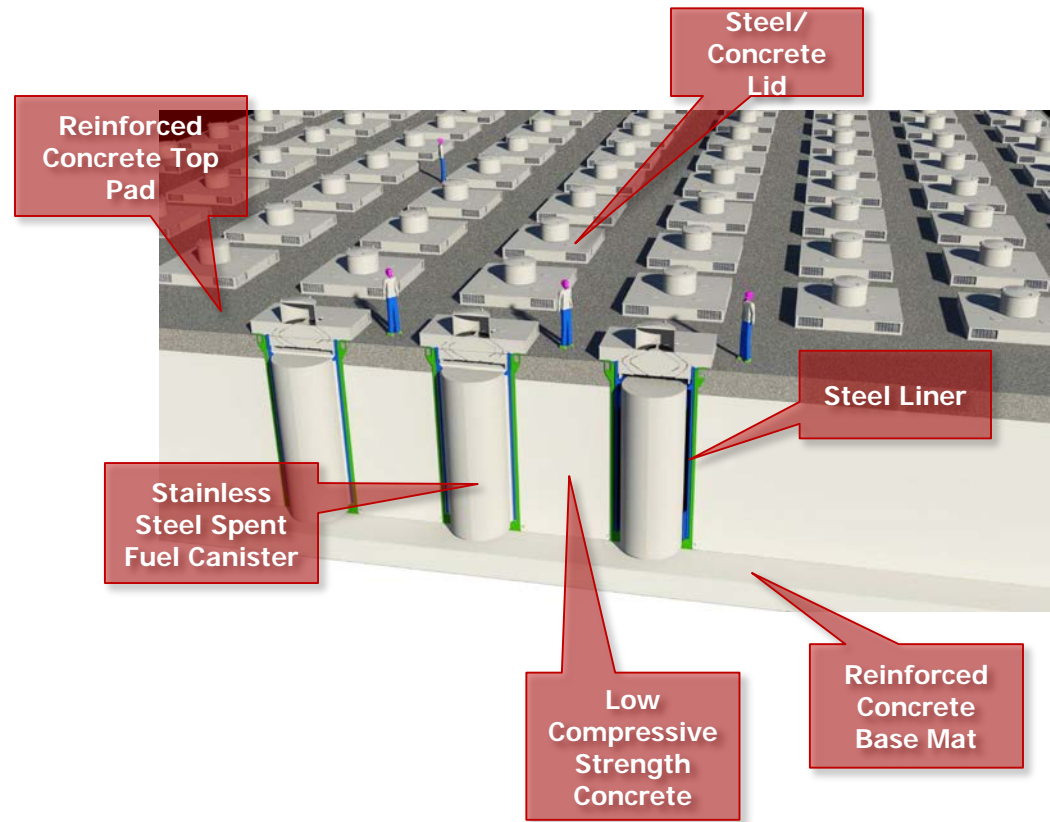
# Upper Slab Pours

[www.holtec.com](http://www.holtec.com)



# 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 Estimates

- |  |                  |
|--|------------------|
| ■ 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 2018   |
| ■ Holtec answers to petitions submitted: | October 2018     |
| ■ RAI #2 (if needed):                    | February 2019    |
| ■ Draft EIS:                             | June 2019?       |
| ■ Final EIS:                             | Mid 2020         |
| ■ NRC completes review:                  | 2020             |
| ■ Construction start:                    | 2020             |
| ■ Accept 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, 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?

