

**New England Conference of Public Utility
Commissioners Symposium
June 5th, 2017
Nuclear Waste Panel**

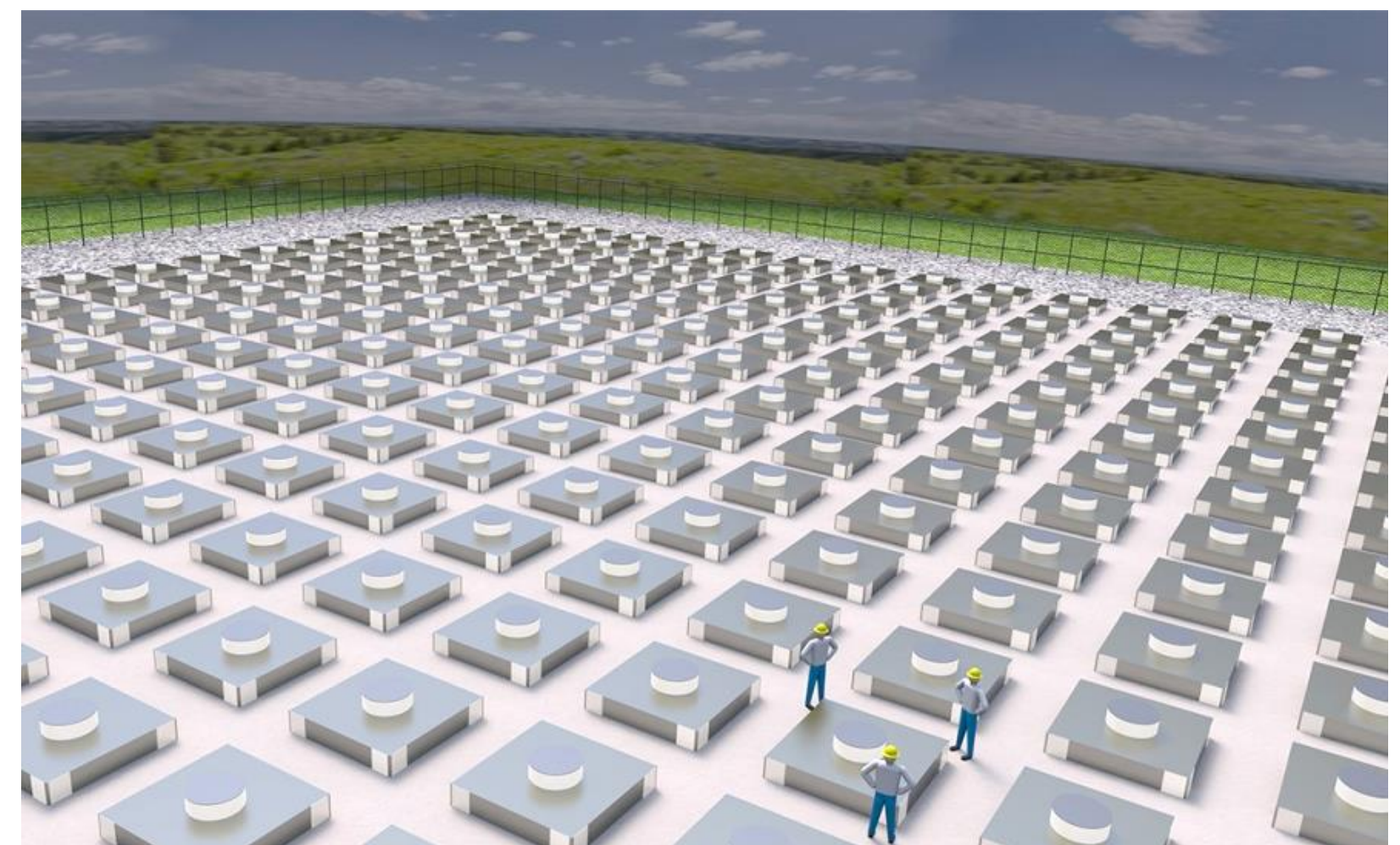


HI-STORE: A Consolidated Interim Storage Facility for Used Nuclear Fuel & HLW

By: Ed Mayer, HI-STORE Program Director, Holtec International

HI-STORE: How Private Initiative Can Contribute

- Opportunity for DOE to follow through on government's promise to defuel nuclear plant sites
- Supplements long-term repository
- Allows removal of used fuel from nuclear plant sites sooner than awaiting repository
- Cost efficient away-from-reactor storage
- Eliminate stakeholder & political challenges with fuel storage at reactor plant site by relocating fuel to area with strong local and state support



Holtec & ELEA Team



■ Holtec International

- ✓ U.S. company with U.S. manufacturing
- ✓ Advanced dry storage technology
- ✓ Experience in licensing fuel storage facilities
- ✓ Turnkey Projects
- ✓ Vertically Integrated

■ Eddy-Lea Energy Alliance, LLC

- ✓ Long-standing NM alliance:
 - ✓ Cities of Carlsbad & Hobbs
 - ✓ Counties of Eddy & Lea
- ✓ Formed in 2006
- ✓ NM Local Economic Development Act

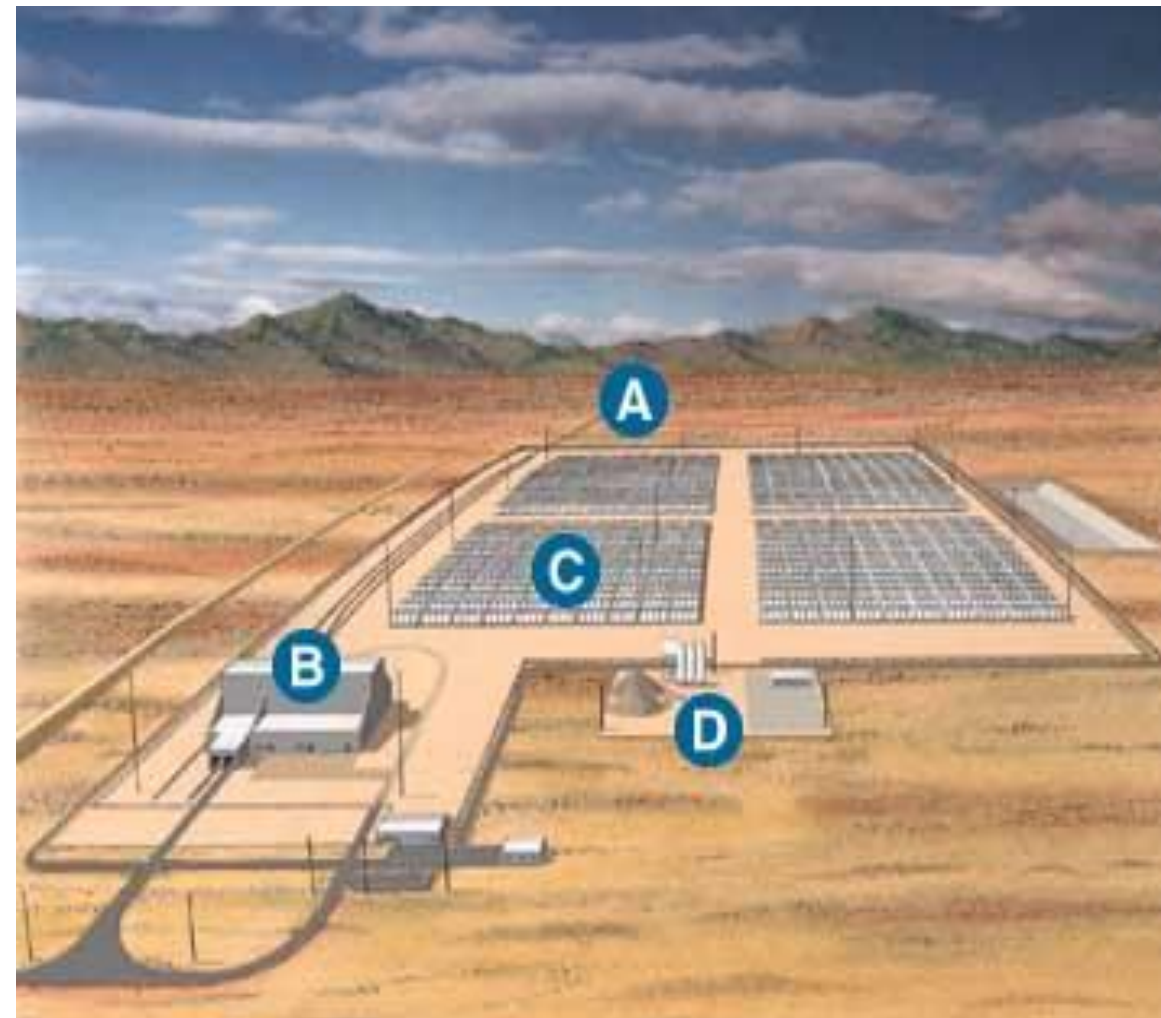


Holtec Advanced Manufacturing Division, Camden, NJ

Holtec's CIS Expertise:

Only world supplier with extensive experience in developing CIS:

1. America's only licensed CIS (Skull Valley, Utah)
2. Ukraine's facility in Chernobyl.



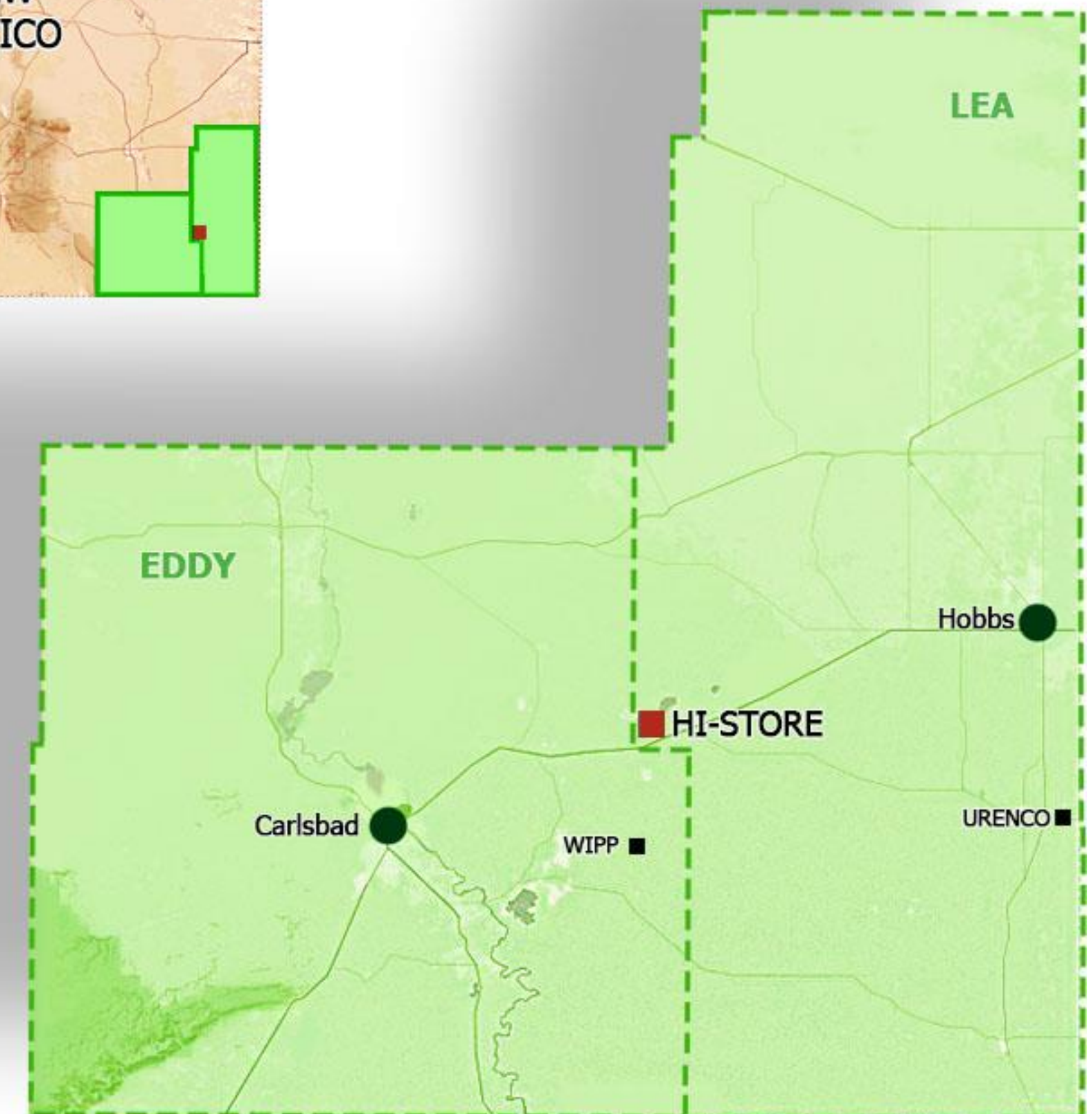
Private Fuel Storage,
CISF licensed
for 4000 Holtec
Storage Systems
(licensed 2003)



Ukraine's Central
Storage Facility
(in development)

HI-STORE Site & Location

- 1,000 acres: geologically stable, dry, elevated land
- Developed infrastructure: electric, water, roads & rail
- Remote location:
 - ✓ 35 miles from nearest town
 - ✓ Midway between Carlsbad & Hobbs, NM
- Populace: robust scientific & nuclear workforce
- Strong support:
 - ✓ Local communities
 - ✓ State & Local government



Support for HI-STORE



- Letters from the Cities of Carlsbad and Hobbs

CITY OF CARLSBAD
RESOLUTION NO. 2013-41

A RESOLUTION SUPPORTING THE EDDY LEA ENERGY ALLIANCE'S (ELEA) EFFORT TO BRING IN AN INTERIM STORAGE FACILITY FOR SPENT NUCLEAR FUEL IN SOUTHEASTERN NEW MEXICO

WHEREAS, the Eddy-Lea Energy Alliance is a limited liability company owned by the New Mexico public entities of the Cities of Carlsbad and Hobbs, and Eddy County and Lea County;

WHEREAS, millions of taxpayer dollars are being spent on monitoring and oversight of spent fuel each year and millions more are being spent on settlement payments related to waste disposition;

WHEREAS, spent fuel presents a safety hazard at its current location, but could safely be moved to a consolidated interim storage site using proven technology, which is the recommendation of the President's Blue Ribbon Commission on America's Nuclear Future;

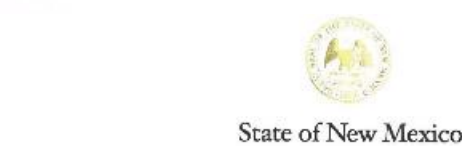
WHEREAS, the dry, remote southeastern corner of new Mexico is ideal for such temporary storage. A pre-existing scientific and nuclear operations workforce exists in the area, as does a community that is open-minded about possible nuclear expansion. ELEA's property, located between Carlsbad and Hobbs, is an excellent location for an interim storage facility.

NOW, THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF CARLSBAD, that having carefully evaluated interim storage, do strongly endorse and direct the board of the Eddy-Lea Energy Alliance to aggressively pursue centralized interim storage facility at the ELEA site; and, furthermore, direct the Alliance to distribute this resolution to the legislature, governor, Energy Secretary, and all members of Congress.

INTRODUCED, PASSED, ADOPTED AND APPROVED this 10th day of September, 2013.

Amelia Garcia
CITY CLERK

Debra
MAYOR



Susana Martinez
Governor

April 10, 2015

Dr. Ernest Moniz, Secretary
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Secretary Moniz,

This letter is to inform you of my support of the community leaders who continue to support the effort to bring a consolidated interim storage facility for spent fuel to southeast Mexico.

The recent decision by your administration to adopt a consent-based approach for waste management should highlight areas such as southeastern New Mexico where there is broad support in the region for such an endeavor. The Eddy-Lea Energy Alliance (ELEA) is an organization with regional participation by the City of Carlsbad, City of Hobbs, Eddy County and Lea County. As you are aware, the residents of this area have a high level of understanding of the nuclear industry and its importance to our national security. There is a strong pre-existing scientific and nuclear operations workforce in the area, and the dry, remote region is well-suited for an interim storage site. ELEA has already selected a location that has been vetted extensively.

There is a significant and growing national need for such an interim storage facility. Millions of taxpayer dollars are currently being spent on monitoring and oversight of spent fuel each year, and millions more are being spent on settlement payments related to waste disposition. In many instances, these actions are taking place where such activity and the presence of such waste is disagreeable to local communities.

These communities in New Mexico support safely moving spent fuel to a consolidated interim storage site using proven technology which is the most sensible approach to this problem until a permanent and long-term solution is available. Dry cask storage is a proven, passive, and safe system that has been used since 1964 with no adverse incidents.

State Capitol • Room 400 • Santa Fe, New Mexico 87501 • 505/476-2000 • fax: 505/476-2226

A MEMORIAL
REQUESTING THE EDDY-LEA ENERGY ALLIANCE TO DEVELOP A CONSOLIDATED INTERIM STORAGE FACILITY.

WHEREAS, the 2013 report from the blue ribbon commission on America's nuclear future strongly recommended that one or more consolidated interim storage facilities be established to temporarily store the spent nuclear fuel generated by America's nuclear fleet, which generates approximately twenty percent of the electricity in the United States; and

WHEREAS, nuclear power plants are an important carbon-free source of reliable electricity production in the United States, and without them, America would be emitting six hundred million metric tons, or twenty-five percent more, of carbon dioxide into the atmosphere annually; and

WHEREAS, there are thirteen decommissioned reactors in the United States that need a place for their used fuel to be stored, and about twenty more will be decommissioned by 2035; and

WHEREAS, many power generators have overly packed fuel pools, and others have very limited on-site storage capability; and

WHEREAS, the nuclear power utilities have standard contracts with the United States government requiring that the United States government take possession of the

SM 34
Page 1

- Letters from Counties of Eddy and Lea

STATE OF NEW MEXICO
COUNTY OF EDDY

RESOLUTION NO. R-13-57
SUPPORT FOR A NUCLEAR INTERIM STORAGE FACILITY

IN THE MATTER OF the Board of County Commissioners support for the Eddy-Lea Energy Alliance's (ELEA) effort to bring an interim storage facility for spent nuclear fuel to southeastern New Mexico.

WHEREAS, the Eddy-Lea Energy Alliance is a limited liability company owned by the New Mexico public entities of the City of Carlsbad, City of Hobbs, Eddy County and Lea County; and,

WHEREAS, millions of taxpayer dollars are being spent on monitoring and oversight of spent fuel each year and millions more are being spent on settlement payments related to waste disposition; and,

WHEREAS, spent fuel presents a safety hazard at its current location, but could safely be moved to a consolidated interim storage site using proven technology, which is the recommendation of the President's Blue Ribbon Commission on America's Nuclear Future; and,

WHEREAS, the dry, remote southeastern corner of new Mexico is ideal for such temporary storage. A pre-existing scientific and nuclear operations workforce exists in the area, as does a community that is open-minded about possible nuclear expansion. ELEA's property, located between Carlsbad and Hobbs, is an excellent location for an interim storage facility.

BE IT THEREFORE RESOLVED that the Board of County Commissioners, having carefully evaluated interim storage, do strongly endorse and direct the board of the Eddy-Lea Energy Alliance to aggressively pursue a centralized interim storage facility at the ELEA site; and, furthermore, direct the Alliance to distribute this resolution to the legislature, governor, Energy Secretary, and all members of Congress.

APPROVED AND ADOPTED this 3rd day of September, 2013.

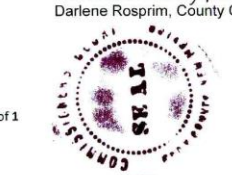
EDDY COUNTY BOARD OF COMMISSIONERS

ATTEST:

Jack Volpatto
Jack Volpatto, Chairperson

Darlene Rosprim
Darlene Rosprim, County Clerk

Page 1 of 1



- Letter from Governor of New Mexico

- Memorial Letters from House and Senate of New Mexico

A MEMORIAL
REQUESTING THE EDDY-LEA ENERGY ALLIANCE TO DEVELOP A CONSOLIDATED INTERIM STORAGE FACILITY.

WHEREAS, the 2013 report from the blue ribbon commission on America's nuclear future strongly recommended that one or more consolidated interim storage facilities be established to temporarily store the spent nuclear fuel generated by America's nuclear fleet, which generates approximately twenty percent of the electricity in the United States; and

WHEREAS, nuclear power plants are an important carbon-free source of reliable electricity production in the United States, and without them, America would be emitting six hundred million metric tons, or twenty-five percent more, of carbon dioxide into the atmosphere annually; and

WHEREAS, there are thirteen decommissioned reactors in the United States that need a place for their used fuel to be stored, and about twenty more will be decommissioned by 2035; and

WHEREAS, many power generators have overly packed fuel pools, and others have very limited on-site storage capability; and

WHEREAS, the nuclear power utilities have standard contracts with the United States government requiring that the United States government take possession of the

HM 40
Page 1

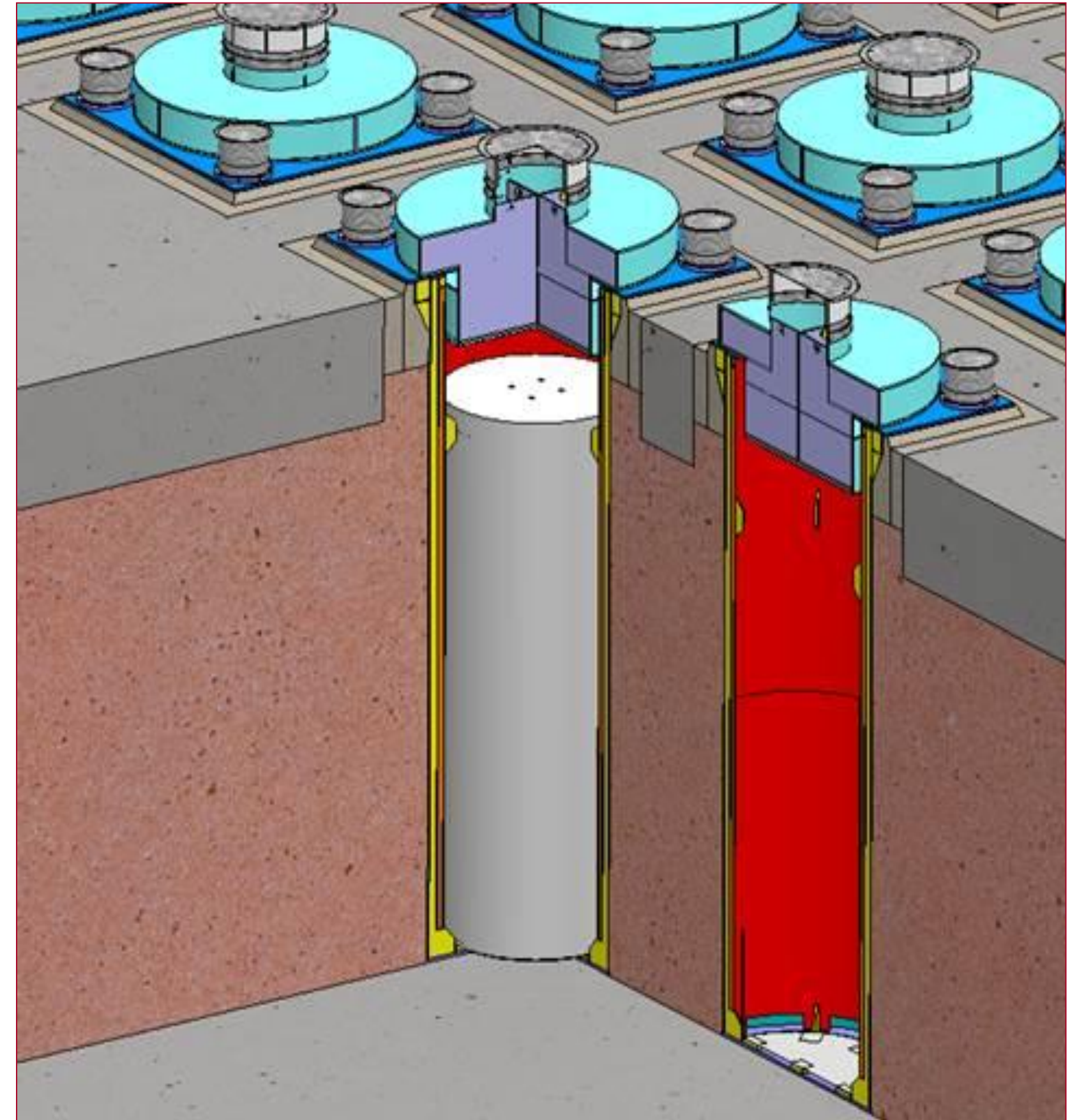
HI-STORE Technology: HI-STORM UMAX



HI-STORM UMAX at Callaway, MO

HI-STORM UMAX Characteristics

- Holtec's Below Grade Dry Storage Technology
- Designed to store canisters up to 75 ¾ in dia / 213 in tall
- Will store any US-origin commercial nuclear fuel:
 - Packaged in dry storage canisters
 - Stored in fuel pools
- No repackaging of fuel required



HI-STORM UMAX Characteristics

- Operational Advantages
 - ✔ Single, Universal System
 - ✔ Canister placed into storage or removed in less than one shift
- Maximizes Security
 - ✔ Facility visually inconspicuous
 - ✔ Profile < 2 ft tall
 - ✔ No area of obstructed view
 - ✔ Less visible from air
 - ✔ Reduced visibility from public land
- Maximizes Safety
 - ✔ Minimize dose to environment & crew
 - ✔ Virtually immune to environmental disasters - hurricanes, floods, tornados, earthquakes
 - ✔ Designed to withstand crashing aircraft or on-site fire without any radiological consequences



HI-STORM UMAX at Callaway, MO

Two Part Approach to Licensing



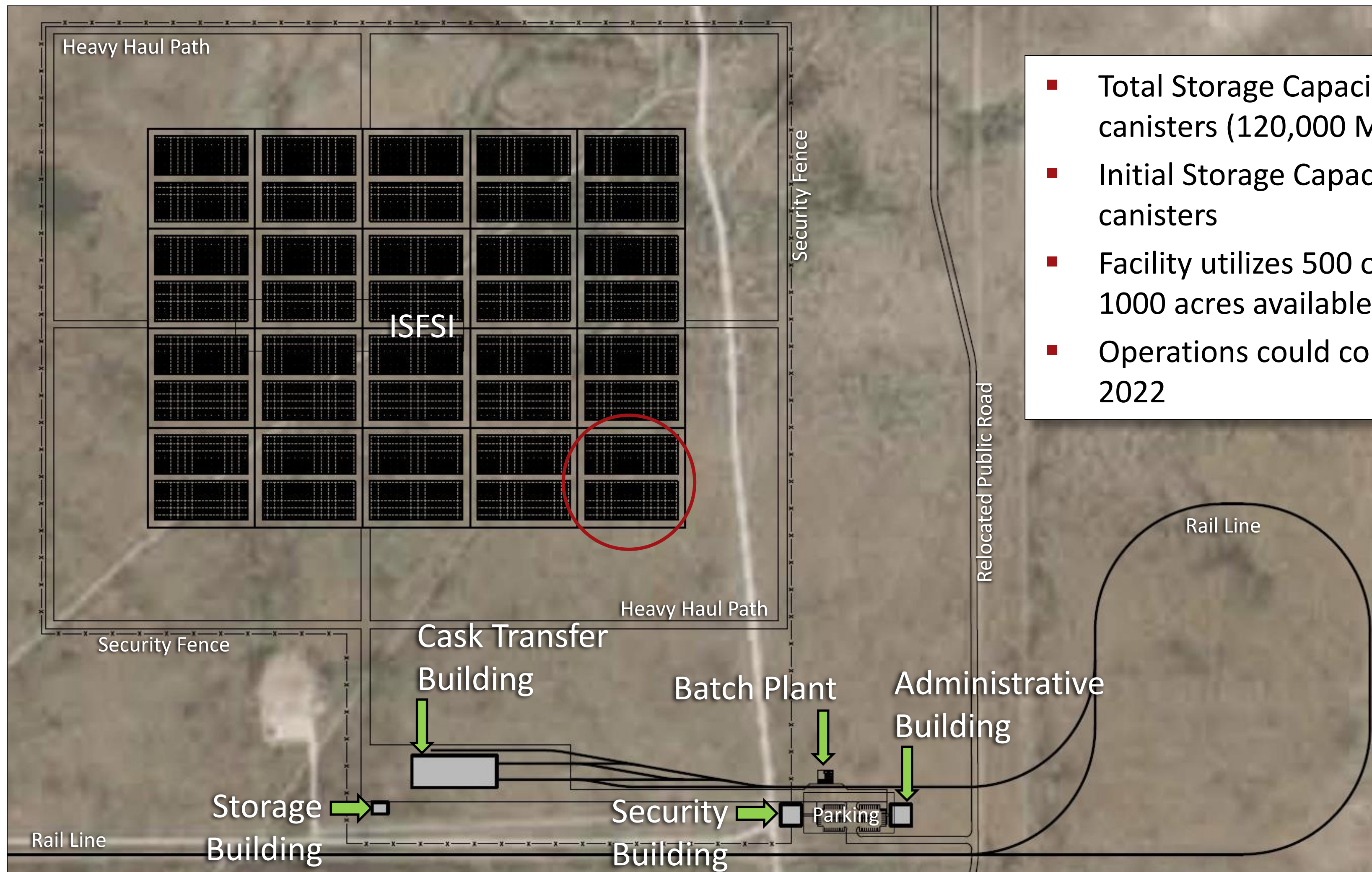
Part 1. HI-STORM UMAX

- August 2016 Submitted HI-STORM UMAX License Amendment:
 - ✓ Added NUHOMS 24PT1 canister for vertical storage
 - ✓ RSIs received & responded to Feb 17
- In succession update HI-STORM UMAX certificate to:
 - ✓ Add canisters from specific shutdown / decommissioned plants
 - ✓ Add all canisters licensed to store SNF

Part 2. Site Specific License

- Pre-submittal Mtg Dec 6, 2016: Focus - Environmental Report
- Pre-submittal Mtg Feb 1, 2017: Focus - Outline of the SAR
- NRC audit Feb 22 & 23, 2017
- Mar 31, 2017: Submitted Site Specific License Application
 - ✓ Initial application - 500 canisters
 - ✓ Reference the HI-STORM UMAX Certificate & FSAR
- Future Amendments
 - ✓ Will reference the amended HI-STORM UMAX CoC & FSAR
 - ✓ Amendments for additional canisters up to 10,000

HI-STORE Site Layout



- Total Storage Capacity 10,000 canisters (120,000 MTU)
- Initial Storage Capacity 500 canisters
- Facility utilizes 500 of the 1000 acres available
- Operations could commence 2022

Timeline: HI-STORE CIS

■ Pending agreement with DoE and Nuclear Utilities:

- ✓ License issued by the USNRC: Early 2019
- ✓ Construction Start: 2019
- ✓ Construction Complete: 2022
- ✓ Accept First Shipment: 2022



San Onofre, CA

Transportation to HI-STORE

■ HI-STAR 190

- ✓ 8/7/2015 - Initial application submitted
- ✓ 01/25/17 - Holtec response to second round RAIs submitted
- ✓ 04/07/17 – Informal communication with NRC continues to resolve additional NRC questions
- ✓ NRC is targeting end of June, 2017 for CoC

■ HI-STAR 100

- ✓ Licensed for HI-STORE 100
- ✓ Pilgrim & VT Yankee



Below-grade Storage at Humboldt Bay Power Plant, Eureka, CA

Questions?

