HOLTEC INTERNATIONAL

EDDY - LEA ENERGY ALLIANCE, LLC.

HI-STORE: A Holtec/ELEA Consolidated Interim Storage Facility for Used Nuclear Fuel and HLW

February 1, 2017

Agenda

- Purpose of the Meeting
- Brief Project Overview
- Project Schedule
- Site Layout
- Site Specific Application
- Site Specific SAR
- Conclusions
- Proprietary Session

Purpose of the Meeting

- To provide an overview of the HI-STORE site-specific SAR in preparation for the NRC pre-submittal audit

Project Overview - Partnership

- Partnership between Holtec and ELEA (Eddy-Lea Energy Alliance) to license, construct and operate a central interim storage facility
- ELEA is an Alliance of the Cities of Carlsbad & Hobbs and the Counties of Eddy & Lea

The Eddy-Lea Energy Alliance

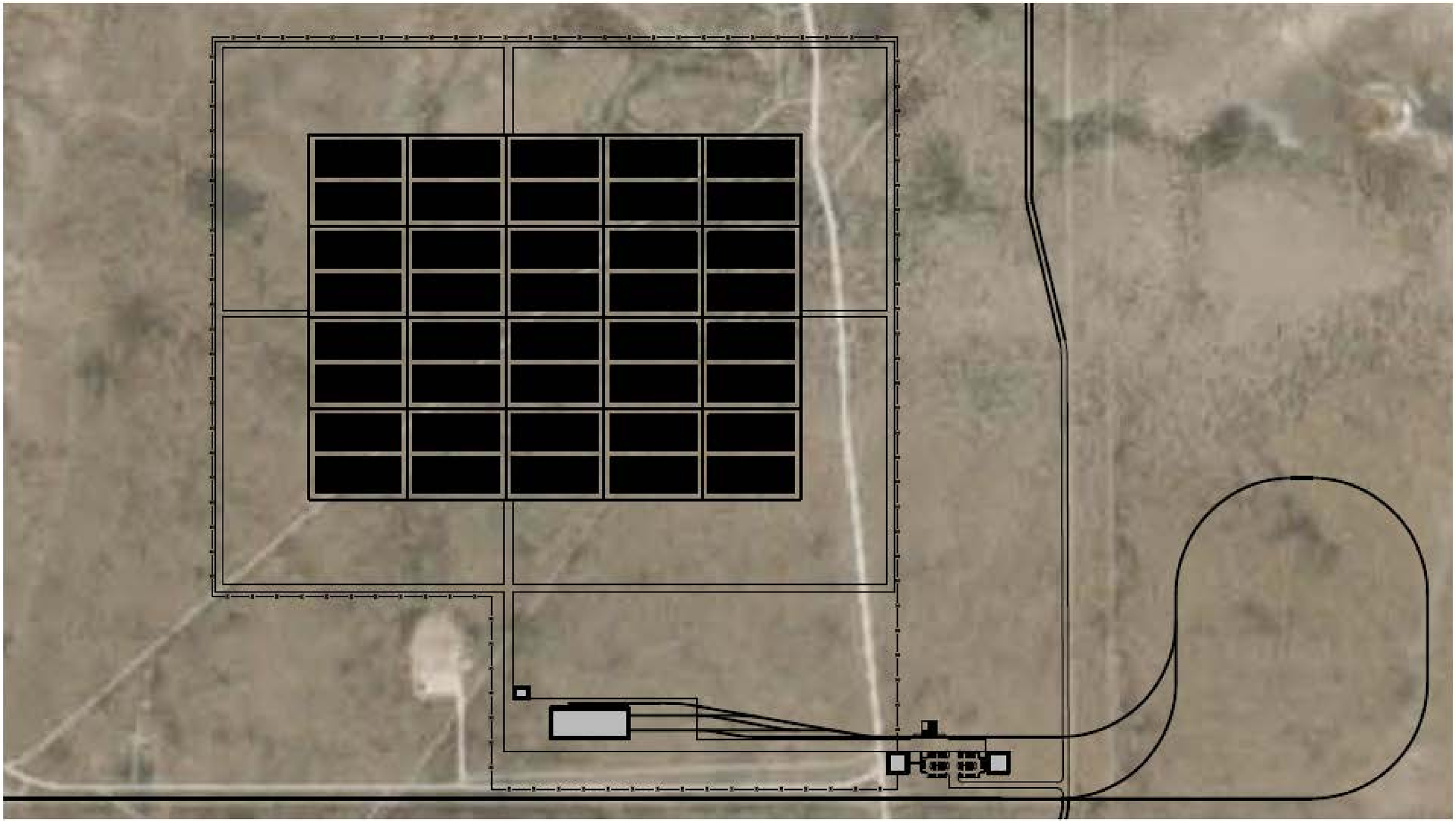
Community-Backed Solutions to National Problems

SE New Mexico's Nuclear Corridor

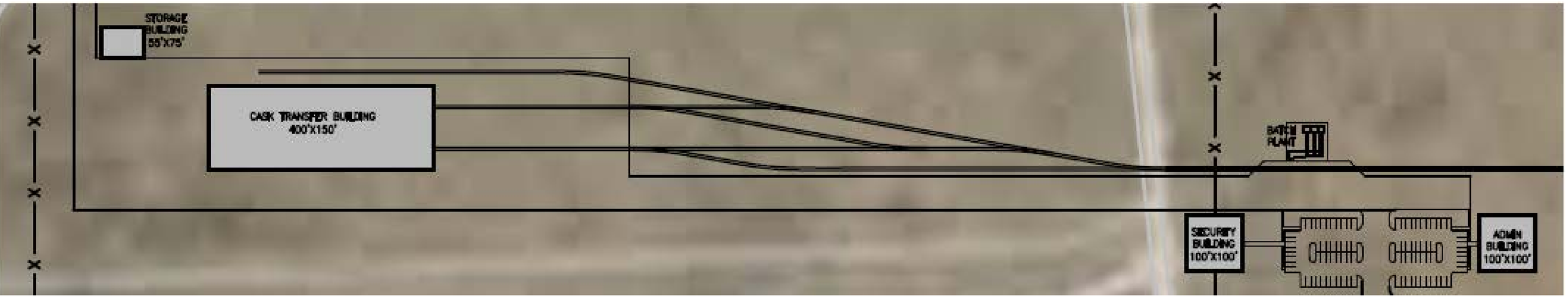
Project Schedule

- HI-STORE Initial Pre-submittal Meeting – December 2015
- HI-STORE Pre-submittal Meeting on UMAX License Amendment – April 2016
- UMAX Generic License Submittal – August 2016
- HI-STORE Pre-submittal Meeting on ER – December 2016
- HI-STORE Pre-submittal Meeting on SAR – Today
- HI-STORE Pre-application Audit – February 2017
- HI-STORE Site-specific license submittal – March 2017

Site Layout



Building Layout



Two Part Approach to Licensing

- Amend HI-STORM UMAX Certificate:
  - ✔ Add additional Holtec canisters
  - ✔ Add canisters from shutdown / decommissioned plants
    - – Priority Waste
  - ✔ Future: Update General License for all canisters projected to store SNF
- License HI-STORE under a 10 CFR 72 site-specific license

Site Specific License Application

- March 2017: Application for HI-STORE under a 10 CFR 72 site-specific license
  - ✔ Initial application - 500 canisters
  - ✔ Future amendments for additional canisters up to 10,000
  - ✔ Reference the amended HI-STORM UMAX Certificate and FSAR for technical details
- Part 72 Site Specific License Contents
  - ✔ General / Financial Information about Holtec
  - ✔ Technical Information – Safety Analysis Report (SAR)
  - ✔ Site Environmental Report
  - ✔ QA and Training Programs
  - ✔ Security and Emergency Plans
  - ✔ Inventory and Records Requirements
  - ✔ Decommissioning Plan

Use of HI-STORM UMAX General License

- Final Safety Analysis Report (FSAR)
  - ✔ Generic HI-STORM UMAX FSAR already contains all the overall system information
  - ✔ Holtec will obtain amendment to generic CoC to include additional canisters, both Holtec fabricated and other systems
  - ✔ This generic CoC and associated supporting FSAR will be incorporated into the site-specific 10CFR72 license
  - ✔ This is consistent with the approach at PFS
- Initial application only include fully approved canisters (up to HI-STORM UMAX Amendment 2) – MPC-37 and MPC-89

Site Specific SAR

- Following NUREG-1567
- Including lessons learned from PFS and other consolidated storage applications
- Storage system information will be fully incorporated from HI-STORM UMAX generic license
  - Exception is HI-TRAC design
  - Tech Spec Information – incorporated by reference vs repeated in site-specific tech specs

Chapter 1

- Introduction
- Description of both site and storage system
- Material Incorporated by Reference
  - ✔ High level list of references in Chapter 1
  - ✔ Each chapter will identify specific material incorporated by reference used in that chapter – all from HI-STORM UMAX generic FSAR

Chapter 2

- Site Characteristics – Based significantly on the ER, by TetraTech
- Geography, Demography, Nearby Facilities, Meteorology
- Surface and Subsurface Hydrology
- Geology and Seismology

Chapter 3

- Operation Description - starting at removal from transportation casks – further discussion in proprietary session
- Spent Fuel Handling Systems
- Operational Support Systems
- No pool facility or control room area

Chapter 4

- Definition of materials to be stored
  - ✔ Matching HI-STORM UMAX Amendment 2
  - ✔ Any further limits due to site specific conditions
- ITS Classifications
- Design Criteria
  - ✔ Structural
  - ✔ Thermal
  - ✔ Shielding
  - ✔ Confinement
  - ✔ Criticality
  - ✔ Decommissioning
  - ✔ Retrieval

Chapter 5

- Structural Design of SSCs
  - ✔ Most using reference from HI-STORM UMAX
  - ✔ Additional analyses as needed for site-specific scenarios, for example: stack-up and CTF
- No pool facilities
- Cask Transfer Building is not a reinforced concrete structure
- Other SSCs such as cranes or transporter – design criteria provided

Chapter 6

- Thermal Evaluation
- Decay Heat Removal Systems – mostly incorporated by reference from HI-STORM UMAX generic licensing documents
- Material Temperature Limits
- Thermal Loads and Environmental Conditions – based on site specific conditions
- Analytical Methods, Models, and Calculations – mostly incorporated by reference from existing HI-STORM UMAX
  - ✔ HI-STORM UMAX information incorporated by reference
  - ✔ New HI-TRAC design included in site-specific license (further information in proprietary session)

Chapter 7

- Shielding Evaluation
- Contained Radiation Gamma/Neutron Sources
- Storage and Transfer Systems
  - ✔ Storage information incorporated by reference from HI-STORM UMAX
  - ✔ New HI-TRAC design evaluated in site-specific SAR
- Shielding Composition and Details
- Analysis of Shielding Effectiveness

Chapter 8 and 9

- Chapter 8
  - ✔ Criticality Evaluation
  - ✔ Fully incorporated by reference from HI-STORM UMAX generic license
- Chapter 9
  - ✔ Confinement Evaluation
  - ✔ Radionuclide Confinement Analysis incorporated by reference from HI-STORM UMAX
  - ✔ No pool facility
  - ✔ Acceptance Test / Aging Management for continued confinement discussed in Chapter 10

Chapter 10

- Conduct of Operations
- Organizational Structure
- Preoperational Testing and Startup
- Normal Operations
  - ✔ Include acceptance tests for transported canisters
  - ✔ Include aging management information for canisters
- Personnel Selection, Training, Certification
- Emergency Planning – reference to separate Emergency Plan document
- Physical Security and Safeguards Contingency Plans – reference to separate document

Chapter 11

- Radiation Protection
- ALARA Considerations
- Radiation Protection Design Features
- Dose Assessment
  - Onsite
  - Offsite
- Health Physics Program

Chapters 12 and 13

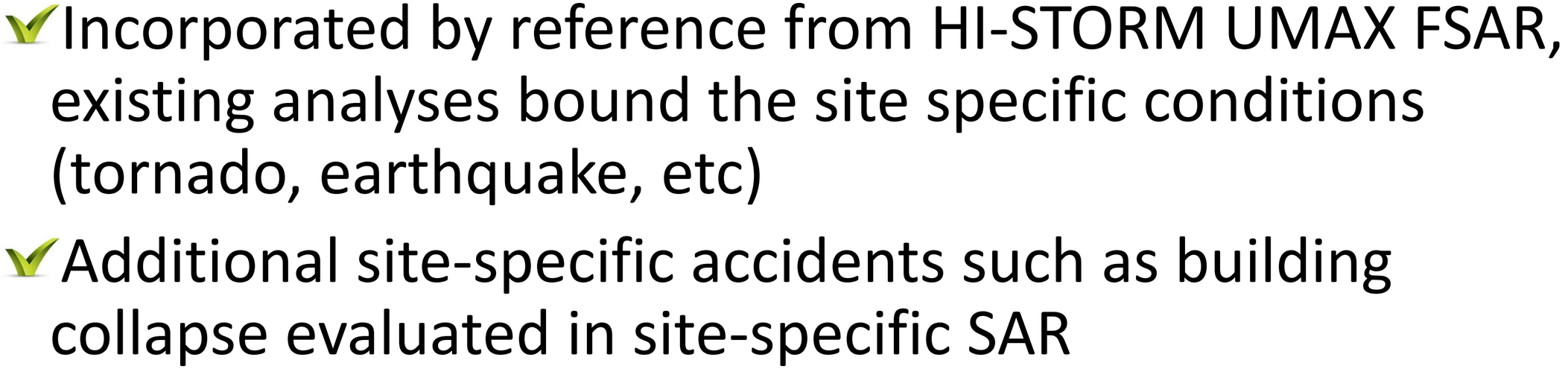
- Chapter 12 - Quality Assurance Evaluation
  - ✔ Holtec has NRC approved QA program
  - ✔ High-level description in the site-specific SAR
- Chapter 13 – Decommissioning Evaluation
  - ✔ Design and Operational Features
  - ✔ Decommissioning Plan – reference to separate document

Chapter 14

- Waste Confinement and Management
- No off-gas treatment or liquid waste
- Solid wastes not generated from HI-STORE processing
- Evaluate radiological impact of normal operations

Chapter 15

- Accident Analysis
- Off-Normal Events – incorporated by reference from HI-STORM UMAX FSAR
- Accidents



Chapter 16

- Technical Specifications
  - Limiting Conditions of Operations
  - Surveillance Requirements
  - Design Features
  - Administrative Controls
- Incorporation by reference vs stand-alone site-specific tech specs
- No canister loading at HI-STORE, minimal LCOs

Conclusions

- HI-STORE Licensing effort well underway:
  - ✔ HI-STORM UMAX Certificate update – Completed August 2016
  - ✔ Site Specific License – March 2017
- SAR following NUREG-1567
- Pre-application audit mid-February