



# Pre-Submittal Meeting for STP Exemption Request

March 8, 2022



# Introduction

- South Texas Project utilizes the HI-STORM FW Storage System, with Multi-Purpose Canister (MPC) 37
- Dry Spent Fuel is stored under the Part 72 General License utilizing Amendment 2 of Certificate of Compliance (CoC) 72-1032
- The HI-STORM FW CoC defines ASME Code, 2007 Edition as the governing code for the HI-STORM FW MPCs
- STP plans on requesting an exemption under 10 CFR 72.7 from the requirements that the cask must conform to the CoC specifications
  - 10 CFR 72.212(b)(3)
  - 10 CFR 72.212(b)(11)

# Introduction (cont)

- During a self-review of manufacturing documentation, Holtec determined that certain records related to digital radiography (RT) are not available
- ASME Code, Division III, Section NB requires that MPC shell-to-baseplate welds are inspected by RT
- Code also requires that repaired welds be inspected to the same criteria as the original weld
- One MPC to be used at STP had a small section of the shell-to-baseplate weld repaired during normal manufacturing process, and an even smaller section of the repair cannot be confirmed to have been radiographed after the repair
  - All portions of the MPC containment boundary but 1 inch of the shell-to-baseplate weld have been confirmed to be successfully RT'd
  - 0.15% of the MPC weld is affected by this issue
- No concern exists with actual weld or weld thickness

# Safety Analysis Summary

Holtec has reviewed the impact of this condition on all MPC functions, summarized below:

Discipline	Safety Analysis
Structural	Updated analysis demonstrates robust safety margins to FSAR acceptance criteria
Confinement	Confinement integrity is maintained, as demonstrated by structural analysis and testing
Criticality	No impact to criticality analysis
Shielding	No impact to shielding analysis
Thermal	No impact to thermal analysis

# Structural Analysis

- The strength of the shell-to-baseplate weld was reduced to a factor of 0.85
  - Factor based on ASME Code requirements for spot radiography
  - Applied to entire weld, even though only a one-inch portion did not have RT performed
- Utilized HI-STORM FW FSAR design basis pressure limits and bounding temperatures that bound all site-specific conditions
- Safety factors remain above 1.0 for all normal, off-normal and accident conditions
- Demonstrates structural performance and integrity of the confinement boundary

# Confinement, Criticality, Shielding, and Thermal

- Confinement is maintained as the safety factor remains above 1.0 under all required conditions and post manufacture testing was completed satisfactorily.
- Criticality is maintained as the structural analysis shows there is no change to confinement or the basket within the MPC
- Shielding is maintained as the storage overpack, and transfer cask were not changed.
- Thermal performance is maintained as confinement integrity and helium environment is maintained

# STP Status

- Off-loading of additional fuel to long-term storage has stopped and not completing the current DCS campaigns would impact full core off-load capabilities by:
  - 1/1/24 for Unit 2
  - 7/1/24 for Unit 1
- Impacted MPC is currently in the HI-TRAC transfer cask in the Fuel Handling Building which is a safe, analyzed condition
- Plan to place MPC into the design storage overpack and normal storage location for safest conditions (as stated in the FSAR)
  - Lower pressure
  - Lower temperatures
  - Lower dose
  - Analyzed for protection against accidents/natural phenomena

# Alternative Action

- Alternative action considered is to return the fuel to the spent fuel pool and reload to a different canister
  - Increased lifting and handling operations and dose to personnel
  - Additional thermal cycles to fuel assemblies
  - Additional rad waste generated
- No safety benefit to this alternative action



# Schedule

- STP to submit exemption request mid-March
- Request NRC approval by mid-April to support DCS campaigns and refueling operations as currently scheduled