

Action Items for HI-STORE CISF (November 2022):

	Action	Status
1.	Holtec Bearing Capacity and Settlement Calculation Package: Holtec has given the same figure in Attachment A.1 for ISFSI storage pad and Attachment B.1 for CTF foundation to describe the subsurface profiles underneath each site. Figure in A.1 has been repeated in B.1. (this is in Attachment 6 of Holtec's 4/15/22 submittal, HI-2188143, Revision 3). Holtec should also correct the MathCad file in the Report No. HI-2188143, "HI-STORE Bearing Capacity and Settlement Calculations," on Page B.4 of B.15 (or, PDF Page 36 of 53). Part of the calculation to estimate the modified cohesion and friction angle is missing and, consequently, resulted in unrealistic static and seismic bearing capacity on Page B.5 of B.15 (or, PDF Page 38 of 53).	The identified calculation package has been updated.
2.	Long-term settlement of the pad (25x10) with UMAX FSAR is limited to 0.2 in, application calculates settlement assuming a 5x5 array with site parameters. NRC confirmatory calculation shows long-term settlement would be 0.2 in using the site data and 25x10 ISFSI array. Holtec could conduct this analysis using MathCad quickly and confirm.	HI-2188143 has been updated/
3.	The SAR pagination is off in the Table of Contents, at least for Section 5.4.	Table of contents has been updated throughout, including Section 5.4
4.	License Condition 16 for physical security needs to be updated to cite specific revision number for the PSP.	License Condition 16 has been updated with specific revisions for all reports. License Condition 15 has also been similarly updated.
5.	License Condition 20 for insurance needs to indicate a specific version number of HI-2177593 (Revision 2). The License Condition and HI-2177593 also need to be specific about the effective date of the insurance.	License Condition 20 has been updated with specific revision and effective date of insurance.
6.	Holtec needs to submit a public version of their financial assurance document, HI-2177593:	A non-proprietary version of HI-2177593 Rev 2 is

	Current latest revision is Rev.2, ML22227A162 Latest public revision found in ADAMS is Rev.1, ML18345143	included in this submittal
7.	Holtec needs to submit a public version of their UMAX/HI-STORE thermal evaluation, HI-2177591: Current latest revision is Rev.2, ML21304A005 Latest public revision found in ADAMS is Rev.0, ML18191B013	A non-proprietary version of HI-2177591 Rev 2 is included in this submittal
8.	Holtec needs to submit a public version of their CTF thermal evaluation, HI-2177597: Current latest revision is Rev.2, ML21228A215 Latest public revision found in ADAMS is Rev.0, ML18191B014	A non-proprietary version of HI-2177595 Rev 2 is included in this submittal.
9.	Holtec needs to submit a public version of their thermal evaluation for the HI-TRAC CS Transfer Cask, HI-2177553: Current latest revision is Rev.3, ML22108A130 Latest public revision found in ADAMS is Rev.0, ML18191B012	A non-proprietary version of HI-2177553 Rev 3 is included in this submittal
10.	Decommissioning Funding Plan Report cites MOX and GTCC as authorized contents for storage at HI-STORE, although the license does not authorize those contents.	An updated version of HI-2177565 is included in this submittal.
11.	License Condition 12 to be deleted	License condition 12 has been deleted.
12.	Paragraph (e) of SAR section 1.2.1: "As can be ascertained from the design information in this SAR, the HI-STORM UMAX CIS features no above-ground important-to-safety building structure. All canister transfer facilities are below-ground."	This paragraph has been updated to acknowledge the Cask Transfer building as an above ground important to safety facility.
13.	The definitions of ambient temperature in the Tech Specs and the SAR are different (24-hour average vs. 72-hour average)	The SAR glossary has been updated to be 72 hours consistent with the Tech Specs
14.	The license number, if issued, would not be SNM-1051. The number would likely be SNM-2516. Proposed license number can be revised to "SNM-25XX."	The proposed license number

		has been updated to SNM-25XX.
15.	HI-STORM 100 FSAR Revision 14 (SAR reference [1.3.3] not found in ADAMS.	The HI-STORM 100 FSAR Revision 14 is included as an attachment to this letter (both proprietary and non-proprietary versions)
16.	HI-STAR 190 and HI-TRAC CS cannot be placed less than 1 inch away from the edge of any slab. This dimension is limited by the calculation on sliding of the cask under tornado and seismic loads. Set a more reasonable operational edge distance for cask storage in the operational procedure that is to be used.	Considering the current design of the slab and cask transporters it should be physically impossible to place a HI-STAR 190 or HI-TRAC CS within 1 inch of the edge. However for full assurance, a note has been added to the operational procedures in Chapter 10 to make sure this distance is considered.
17.	The maximum height of the HI-TRAC CS from the ground during its transport to the ISFSI is limited to 1 ft by analysis. This restriction needs to be captured in the operational procedure.	A note has been added to the operational procedures in Chapter 10 to ensure the carry height is controlled.
18.	HI-STAR 190 and HI-TRAC CS has been evaluated against tip-over and missile impact during a tornado hence no administrative control of operation is necessary in using the HI-STAR 190 or HI-TRAC CS in a free-standing configuration.	While the major short term operations involving the HI-TRAC CS and HI-STAR 190 are fully evaluated as

		described in Chapter 15, there may be intermediate activities that are not explicitly analyzed, and so the administrative controls provides assurance that a tornado / tornado missile is not a credible event.
19.	In the ISFSI design, the demand due to the increased weight of the HI-TRAC CS is enveloped by the UMAX design because the input design seismic event is higher. While this is a may be the case, the staff notes that only the vertical component of the event plays into the vertical load increase. The SAR should have a note that compares the vertical components of both GM to take credit for this claim. Currently only the Newmark summations are compared.	A comparison of vertical PGA has been added to Chapter 5.
20.	SAR Figures 5.3.4 through figure 5.3.6 show comparison at 20% damping RG 1.60. However, Table 4.3.3 shows the DBE at 5%, and the DECE at 5% was used for design. What was the design input at the base of the soil springs? This need to be clearly stated in the SAR, with explanation for why this was chosen.	A description of the damping used for Figures 5.3.4 through 5.3.6 has been added to Chapter 5.
21.	Add percentage damping to the spectra shown in SAR Chapter 5 figures. This information is in the calculation package.	The figures have been updated to provide percentage damping.
22.	A representative design of the tilt frame assembly anchoring in the CTB is shown in Attachment 13A of Holtec Report No. HI-217758. The pictorial shows the tilt frame attached to a floor plate weldment via Tee bolts and the floor plate weldment attached to the CTB floor slab via J-hooks. This design configuration needs more details about the floor plate weldment, Tee bolt design stress and the J-hook design.	This calculation package has been updated and is included with this submittal.
23.	A design for the crane runway beam could not be found in any of the submitted documents. The crane vendor has provided a design that starts at the crane bridge and covers the rest of the crane.	Information on the crane runway beam has been added to Chapter 5.

24.	Add an argument why the corbel does not see the torsional load that arises from seismic and surge loads from crane operation. It can be argued that the crane girder at the top is restrained by the truss system and the lateral forces are spread into the RC wall. So, there is no torsion in the girder.	Information on the torsional load has been added to Chapter 5.
25.	SAR Section 14.4 mentioned the presence of low-level waste at the site. However, there was no mention of its location, no mention of a fire's impact on the low-level radioactive waste, and no mention of the means to contain the low-level waste in the event of a fire. In addition, there was no discussion regarding its consideration in the Fire Protection Plan (Holtec Report HI-2177938) and Emergency Response Plan (Holtec Report HI-2177535) (e.g., fire prevention, fire detection and control).	Section 14.4 has been updated to state that the low-level waste will be stored within flammable storage cabinets/containers and a pointer statement to Section 14.4 has been added to SAR Section 6.5.3. Also, Section 5.3.1 of the Emergency Response Plan has been updated, and HI-2177535 attached to this submittal. The Fire Protection plan is not impacted by this level of detail.
26.	Although SAR Section 6.5.3 stated that there are no combustibles stored within the ISFSI, the HI-STORE CIS Facility Environmental Report (HI-2167521) Section 6.5 mentioned "all above ground diesel storage tanks" and Section 4.10.2 mentioned "back-up diesel generators" and Section 1.4.2.3 mentioned "fire pump diesel engine". Clarify that the combustibles (e.g., fuel, hydraulic fluid), diesel engine, diesel generators, and the diesel tanks would mitigate fire impacts and are not stored in an area that would impact radioactive materials (e.g., spent fuel during receipt, operations within CTB and CTF, and storage of the low-level radioactive waste (mentioned in SAR Section 14.4)).	Section 6.5.3 of the SAR has been updated to state that all fixed locations with combustible materials (such as diesel generators and storage tanks) are not located in areas that could impact radioactive materials.
27.	Although system details were not provided, Holtec Report HI-2177535, Section 5.3.1 of the Emergency Response Plan indicated that fire protection systems "are designed in accordance with NFPA 30 requirements" [National Fire Protection Association 30 "Combustible and Flammable Liquids Code"]. The response	HI-2177535 Section 5.3.1 has been updated to point at the NFPA codes in general

	<p>should confirm that this broad statement indicates the fire detection and suppression systems are of sufficient size and performance and that the facility is in accordance with NFPA 801 "Standard for Fire Protection for Facilities Handling Radioactive Materials" and other relevant NFPA codes, including the "automatic sprinklers and water spray systems" and "portable fire extinguishing systems" mentioned in Section 6.3 of Holtec Report HI-2177535. Confirm that diesel tanks are in accordance with relevant NFPA codes.</p>	<p>rather than pointing out a specific one. Reference 3.4 of HI-2177938 has been deleted so that it does not point at one single NFPA code (there previously was no direct reference to that document). Chapter 4 of the SAR has also been revised to point to the NFPA codes in general. Chapter 19 has been updated to delete the references no longer used (4.5.7 and 4.5.12). Also HI-2177938 Section 7.1.1.2 has been updated to state that all permanent fire loads shall be located, designated, operated, and maintained in accordance with applicable NFPA code guidelines. Diesel tanks would fall into this category</p>
28.	<p>SAR Section 2.2.2 discussed results that indicated a postulated rupture of gas pipelines near the site would not adversely impact operations of the HI-STORE CIS facility. Using similar considerations, clarify that the active gas and oil wells near the site (e.g., SAR Table 2.1.5) would not adversely impact HI-STORE CIS facility operations.</p>	<p>SAR Section 2.1.2 has been updated to address the gas and oil wells.</p>
29.	<p>Clarify that the Fire Protection Audits and Self Assessments mentioned in Section 3 include audits and assessments of the Fire Protection Plan document as well as fire hazards analyses that</p>	<p>Section 7.3 of the Fire Protection Plan (HI-2177938)</p>

	periodically examine the design of systems, operating plans (including as the site expands), and controls and that these audits and assessments are by qualified fire safety personnel. In addition, the qualification requirements for qualified fire safety personnel, and the bases for the qualifications, should be listed.	has been revised to include other activities in the audit, required the audit to be performed whenever the site expands or changes significantly, and requires the individuals performing the audit to be qualified per applicable NFPA code guidelines.
30.	Clarify the criteria associated with fire protection at the site, such as being in accordance with NFPA 801 "Standard for Fire Protection for Facilities Handling Radioactive Materials".	See responses to other comments above. The SAR has been updated to point at NFPA codes in general rather than any specific code.
31.	Holtec Fire Protection Plan (FPP) Report HI-2177938 Section 6 uses the word "should" when describing the objectives; the Fire Protection Plan should be clear that objectives are to be met.	HI-2177938 has been updated to change should to shall in Section 6.