

Questions for Clarification on Holtec Response to HI-STORM 100 Amendment 14 RAIs

**Docket No. 72.1014
Certificate of Compliance No. 1-14
Amendment 14 to the HI-STORM 100 Multipurpose Canister Storage System**

1. What is the orientation of the top and bottom DFI caps?

Holtec Response:

The orientation of the bottom DFI cap is such that the DFI opening faces upward to allow the fuel assembly to rest inside of the bottom DFI cap. The orientation of the top DFI cap is such that the DFI opening faces downward. FSAR Section 2.1.3.1 has been revised to include this clarification.

2. In the response to RAI 3-1, Holtec states that the insertion depth of the DFO sidewalls inside the basket cell is greater than the clearance gap between the DFI top cap assembly and the underside of the MPC lid.

- a. **Does this mean the gap between the top of the basket and the MPC lid?**
- b. **Provide a minimum length for how much longer the DFI sidewalls will be compared to the gap.**
- c. **Is the DFI attached to the fuel assembly?**

Holtec Response:

- a. Yes, this refers to the gap between the top of the fuel basket and the MPC lid. FSAR Section 2.1.3.1 has been revised to include this clarification.
- b. FSAR Figure 2.1.10 has been revised to provide the minimum length for the top DFI sidewall.
- c. No, the DFI is not attached to the fuel assembly. The top DFI cap is installed such that it contacts the top of the fuel assembly, but it is not connected to it.

3. In the response to RAI 3-1, Holtec states that the design accident loads of the DFI will be the self-weight of the DFI amplified by the maximum decelerations in Table 3.1.2.

- a. **Why is the amplified weight of the fuel not included as a load on the DFI?**
- b. **What is the self-weight of the DFI?**

Holtec Response:

- a. The amplified weight of the fuel is not included as a load on the DFI because the DFI, by design, does not play a role in supporting or resisting the weight of the fuel. Since the DFI top and bottom caps are not physically connected to each other or to the basket cell walls, they are free to move in the longitudinal direction within the confines of the basket cell that they are installed. This means that, if the stored fuel assembly were to shift inside the basket cell due to a tip over event, the DFI would

move together with the fuel assembly until the DFI top plate bottomed out against the underside of the MPC lid. At that moment, the inertia load from the fuel assembly would be fully resisted by the MPC lid with the DFI top plate acting merely as a shim plate. The behavior of the DFI bottom cap at the base of the cell is similar, with the DFI bottom plate acting as a thin shim plate between the stored fuel assembly and the MPC base plate. FSAR Section 2.1.3.1 has been revised to include this clarification.

- b. The total self-weight of a single DFI assembly (including top and bottom caps) is less than 30 pounds, with the top and bottom caps each weighing less than 15 pounds individually.

- 4. **In the response to RAI 3-1, Holtec states that the load bearing members of the DFI will be designed to satisfy Level D stress limits per ASME Section III, Appendix F.**
 - a. **Include this statement in the FSAR.**
 - b. **Provide this design for review**

Holtec Response:

- a. FSAR section 2.1.3.1 has been revised to include this statement.
- b. In response to questions 1 through 4a, Holtec provided additional information to clarify the dimensions, orientation and criteria which will be used to manufacture the DFIs. In particular, the height of the top DFI sidewall and its position in the fuel basket cell, provided in FSAR section 2.1.3.1 and Figure 2.1.10, demonstrate that the top DFI will remain within the basket cell to perform its intended function of constraining the fissile material during normal and credible accident conditions. Table 2.2.6 contains safety classification, material of construction and applicable codes for the DFI. Furthermore, the design criteria for the load bearing members of the DFI to satisfy the Level D stress limits per ASME Section III, Appendix F were also included in FSAR section 2.1.3.1. The design criteria specified are carried into purchase orders to ensure that the DFI, as built, complies with the design criteria set forth in the FSAR.

The information provided for the DFI is commensurate with the level of detail provided for the DFC in the more recently approved HI-STORM FW. Holtec believes the additional information provided in response to these clarification questions, provides the information necessary for review of the DFI. The design criteria for the DFI ensures that regulations for criticality, structural and thermal are met.