

Attachment 1 to Holtec Letter 5018050

Amendment Request 1032-5, REVISION 0

SUMMARY OF PROPOSED CHANGES

All changes to the CoC are marked in the subsequent attachments. Changes that have occurred as part of prior applications are not marked as changes.

Proposed Change #1

Addition of new heat load patterns for the MPC-89 and MPC-37 (standard and short length), and revision of minimum required cooling time for fuel to 2 years. These patterns also include locations for damaged fuel at higher per cell heat load limits than previously authorized. These changes are shown in the marked changes to Appendix B included with this request.

Reason for Proposed Change #1

The new patterns requested in this change support storage of fuel assemblies with higher per assembly heat loads in the HI-STORM FW MPCs. These patterns support sites planning to shutdown to offload fuel into dry storage sooner. These patterns also address the storage of higher heat load damaged fuel and fuel debris in damaged fuel containers.

Justification for Proposed Change #1

The new loading patterns have been thermally evaluated and found to maintain component temperatures below the required limits. Supporting thermal analyses have been performed, and are included in Chapter 4 of the FSAR. Additional supporting changes have also been included in Chapters 2, 3, 5, and 6 of the FSAR. Marked up copies of the affected chapters are included, as well as proposed CoC pages to include the new patterns.

In Chapter 3, analyses used in the justification of these changes were previously added to the FSAR in support of other changes under 10CFR72.48. Holtec is not requesting NRC review of these changes, and as such they are labeled with the appropriate 10CFR72.48 number in the margin of the affected chapter.

Proposed Change #2

Addition of two new fuel types, 10x10I and 11x11A to the approved contents in CoC 1032, Appendix B.

Reason for Proposed Change #2

This proposed change allows storage of additional fuel types in the HI-STORM FW System.

Justification for Proposed Change #2

Criticality analyses of the new fuel were performed and the results of these analyses have been added to Chapter 6. The new fuel types were determined to be bounded by the design basis fuel already analyzed in the FSAR for thermal and structural, for shielding the design basis assembly

Attachment 1 to Holtec Letter 5018050

Amendment Request 1032-5, REVISION 0

SUMMARY OF PROPOSED CHANGES

in the FSAR is still considered representative; therefore no additional analyses were required. A marked copy of FSAR Chapters 2 and 6 are provided to show the changes.

Proposed Change #3

It is proposed to add an exception to the ASME Code to allow the use of certain duplex stainless steels in the HI-STORM FW system.

Reason for Proposed Change #3

Duplex stainless steel material can have improved corrosion resistance properties, and therefore is added to the list of options under the Alloy X designation.

Justification for Proposed Change #3

Duplex stainless steel material has been evaluated, and is included in the attached, revised Alloy X Appendix (HI-STORM FW FSAR Appendix 1.A). The structural and thermal limits for the duplex stainless steel material have been evaluated and shown to be acceptable for use in the HI-STORM FW system. This same change has been added to the HI-STORM 100 (Amendment 12), and NRC staff feedback and RSIs on that amendment have been incorporated into this application.

Proposed Change #4

It is proposed to revise the calculation for evaluating effective fuel conductivities to utilize FLUENT.

Reason for Proposed Change #4

This change aligns all calculations on a common computational platform.

Justification for Proposed Change #4

FLUENT is able to calculate the effective fuel conductivities, and is consistent with the method previously submitted and used in Amendment 4 for the MPC-32ML and MPC-31C. The thermal evaluations presented in the proposed FSAR pages for Chapter 4 show that with this computational method to calculate the effective fuel conductivities, the HI-STORM FW thermal model demonstrates that all temperatures remain below their design limits. Additionally, as part of this change, Chapter 1 has been updated to add a revise the Metamic-HT emissivity specifications. This change aligns with manufacturing process enhancements made in Metamic-HT production.

Attachment 1 to Holtec Letter 5018050

Amendment Request 1032-5, REVISION 0

SUMMARY OF PROPOSED CHANGES

Clarifications and Editorial Suggestions in the CoC/FSAR

- CoC Appendix A, definition of Repaired/Reconstituted Fuel Assembly has been modified to clarify that if dummy stainless steel rods are present in the loaded spent fuel assemblies, the dummy/replacement rods will be considered in the site-specific dose calculations.
- Clarification to address hafnium rods. These hafnium rods are addressed in the HI-STORM FW FSAR, Section 5.2.3.2 as being bounded by other Control Rod Assembly (CRA) absorber materials. These hafnium rods are explicitly added to Appendix B.