Attachment 1 to Holtec Letter 5014802

LAR 1014-11, REVISION 0

SUMMARY OF PROPOSED CHANGES

Proposed Change #1

Increase the per storage location weight limit for cells authorized for DFCs in the MPC-68, 68FF and MPC-68M in the HI-STORM 100 System CoC, Appendix B, Table 2.1-1.

Reason for Proposed Change #1

This proposed change allows storage of additional fuel types in the HI-STORM 100 System.

Justification for Proposed Change #1

The new fuel weights have been structurally evaluated. The overall MPC bounding weight remains unchanged, and therefore the current FSAR analyses remain bounding. A marked copy of FSAR Chapters 2 and 3 are provided to show the changes.

Proposed Change #2

It is proposed to remove the requirement to pressure test loaded MPCs.

Reason for Proposed Change #2

The hydrostatic test of the MPC with loaded fuel is a contributor of dose to the loading crew, and over 800 loadings have provided no evidence of a leak.

Justification for Proposed Change #2

As stated above, the hydrostatic testing of over 800 MPCs has shown no leakage. Furthermore, inaccessibility of welds and base materials while the loaded MPC is in the overpack precludes any meaningful examination of the MPC structural integrity. FSAR Chapters 8 and 9 and CoC Appendix B have been revised accordingly.

Proposed Change #3

It is proposed to revise the helium leak testing of the confinement boundary welds to be performed on a statistical basis.

Reason for Proposed Change #3

The helium testing of the Confinement boundary welds, having been established to be redundant (and unnecessary to insure confinement integrity) through testing of over 800 MPCs, is being proposed to be performed on a statistical basis in the manner the mechanical properties of Metamic-HT are tested. The testing of the thick closure lid as a helium blockage boundary is deleted as evidently unnecessary. This manufacturing update will eliminate several heavy load handling evolutions in the shop with its attendant personnel safety implications.

SUMMARY OF PROPOSED CHANGES

Justification for Proposed Change #3

As stated above, the confinement boundary testing of over 800 MPCs has shown no leakage. MPC leak test data is provided as justification for the change. FSAR Chapter 9 and CoC Appendix B have been revised to document the statistical testing plan.

Proposed Change # 4

It is proposed to provide more options on surveillance requirements and actions to be taken in the event of Overpack vents blockage when containing a loaded MPC.

Reason for Proposed Change # 4

To relax surveillance requirements for MPCs with much lower heat loads than design basis maximum. This will help reduce the necessary surveillance burden on users of ISFSI sites prone to unfavorable weather conditions periodically.

Justification for Proposed Change # 4

For heat loads below an established threshold, during OVERPACK vents blockages that render the system inoperable, thermal analysis has shown that the accident condition temperature limits for system components and the fuel cladding are not exceeded under steady state conditions. Mark-ups of FSAR Chapters 4 and 12 and CoC Appendix A are provided with the identified changes.

Proposed Change 5

It is proposed to evaluate mixture of low enriched CILC fuel and normal fuel.

Reason for Proposed Change #5

This change provides flexibility to system users by permitting the loading of low enriched CILC fuel with other undamaged fuel assemblies. Therefore, the inventory of fuel assemblies in the spent fuel pool is reduced and complex activities (i.e. insertion of fuel assemblies into DFCs) are avoided.

Justification for Proposed Change #5

Criticality analysis performed in support of this change indicates that k_{eff} remains below 0.95 limit under all analyzed storage conditions. Mark-ups of FSAR Chapters 2 and 6 and CoC Appendix B are provided to show the changes.

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SUMMARY OF PROPOSED CHANGES

Proposed Change #6

It is proposed to increase the enrichment limit for 10x10G (BWR) fuel assembly from 4.6 wt.% ^{235}U to 4.75 wt.% ^{235}U.

Reason for Proposed Change #6

Expand the range of allowable contents to include assemblies in use.

Justification for Proposed Change #6

Criticality analysis performed indicates that k_{eff} remains below 0.95 limit under all analyzed storage conditions. Mark-ups of Chapters 2 and 6 and CoC Appendix B are provided to show the changes.

Proposed Change #7

It is proposed to add new minimum soluble boron concentration limits for the 17x17A (PWR) fuel assemblies an MPC-32.

Reason for Proposed Change #7

Enhance practicality of loading operations and reduce undue burden on users.

Justification for Proposed Change #7

The 17x17A fuel assemblies have lower uranium weight than 17x17B/C fuel assemblies, therefore a different soluble boron concentration limit is applied for loading of 17x17A fuel assemblies. Criticality analysis performed indicates that for the proposed lower soluble boron concentration k_{eff} limit is below 0.95 for all conditions analyzed. Mark-ups of Chapters 2 and 6 and CoC Appendix A are provided to show the changes.

Proposed Change #8

It is proposed to increase the burnup limit to accommodate non-fuel hardware (NFH) consisting of NSA in combination with other control components.

Reason for Proposed Change #8

Permit loading of NFH in combination with other control components.

Justification for Proposed Change #8

In accordance with the shielding analysis, to maintain Co-60 activity at or below 895 Ci, the cooling time was increased to accommodate the increased burnup. Mark-ups of FSAR Chapter 2 and CoC Appendix B are provided to identify the changes.

Proposed Changes #9

It is proposed to add thoria rods/canister as contents for the MPC-68M.

Reason for Proposed Change #9

Expand the allowable contents for the MPC-68M to include the thoria rods/canister, which are already approved for other MPC-68 models.

Justification for Proposed Change #9

Shielding analysis indicate the difference in dose rates between the MPC-68 and MPC-68M, when any other content is loaded with the thoria rod canister, is very small. Therefore the thoria rod canister is acceptable for loading in the MPC-68M. Criticality analysis concludes that the case of the thoria rod canister in MPC-68M is bounded by the analysis for the MPC-68 and MPC-68F, and therefore the thoria rod canister is permissible for loading in the MPC-68M together with any approved content.

Proposed Changes #10

It is proposed to add a second permissible composition for thoria rods for all MPC-68 models.

Reason for Proposed Change #10

To expand the approved composition of thoria rods in the CoC to include thoria rods composition submitted to the NRC via an exemption request for Dresden Nuclear Power Station (NRC Docket No. 72-37, TAC No. L24989).

Justification for Proposed Change #10

The new composition of thoria rods has been shown by analysis to have a negligible impact on dose rates and criticality margins. Mark-ups of FSAR Chapters 2, 5 and 6 and CoC Appendix B CoC identify the changes.

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SUMMARY OF PROPOSED CHANGES

Clarifications and Editorial Suggestions in the CoC/FSAR

A) CoC Appendix B (Section 3.4), single failure proof criteria and definition have been clarified in accordance with the HI-STORM FW (NRC Docket No. 72-1032) System

B) CoC Appendix B (Section 3.3.2), has been modified to include ASME Section II with the ASME Section III Code Alternative submittals.

C) CoC Appendix B, Section 2.4.3 has been modified to remove the burnup calculation. General licensees are responsible for ensuring that they comply with the requirements in the CoC for heat load, burnup, and enrichment. The calculation is only one method of performing this evaluation. Newer submittals for the HI-STORM FW and HI-STORM UMAX (NRC Docket No. 72-1040) do not contain the specific equation.

D) 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.

E) CoC Appendix A, Table 3-1 has been updated to clarify that the allowable heat loads in Notes 5 and 6 apply to vacuum drying and FHD respectively.

F) CoC Appendix A, Tables 3-3 and 3-4 have been modified to clarify that the heat load limits for regionalized and uniform loadings for MPCs-68/68F/68FF as provided in both tables, are also applicable to MPC-68M. This aligns the CoC with analysis previously performed and provided in the FSAR.