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April 8, 2008

Mr. Stewart Brown, Project Manager
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: Minutes of the April 4, 2008 MAGNASTOR Draft Criticality RAI Teleconference
Docket No. 72-1031 (TAC No. L23764)

Dear Mr. Brown:

NAC International (NAC) hereby submits the subject minutes documenting the discussions and clarifications for each Draft Criticality RAI provided to NAC via e-mail and discussed with the NRC staff on April 4, 2008. As discussed during the teleconference, clarification beyond the actual discussion during the teleconference and proposed edits to SAR text are included in the attached document, as appropriate, with each respective Draft RAI.

This submittal includes eight copies of this transmittal letter and eight copies of Attachment 1 – MAGNASTOR Draft Criticality RAIs, NRC/NAC Teleconference, April 4, 2008. Upon NRC review and approval, the proposed SAR and Technical Specification changes will be incorporated into a formal supplement to the MAGNASTOR SAR currently under review.

If you have any questions regarding this submittal, please contact me at 678-328-1274.

Sincerely,

Anthony L. Patko
Director, Licensing
Engineering

Attachment 1 – MAGNASTOR Draft Criticality RAIs, NRC/NAC Teleconference, April 4, 2008

NMSS01

ED20080038

MAGNASTOR Draft RAI, Part III
NAC -Response Comments
Teleconference April 4, 2008

Participants

NRC: Stewart Brown, Mike Call

NAC: Tom Danner, Holger Pfeifer

General Discussion:
Stewart Brown stated that the NRC was continuing their review of the NAC response to both Part I and Part II Draft RAIs and that there were additional clarification and comments to be addressed in support of timely completion of the MAGNASTOR review. Stewart stated that all discipline materials are not ready for discussion, however, it was agreed that we should address material as each discipline is completed with their individual review activity and not delay interactions until all discipline review is complete.

The following material is limited to the criticality review.

Draft RAI

6-1. Clarify whether the criticality analyses for the Combustion Engineering (CE)-style assemblies with Non-Fuel Hardware (NFH) present included NFH present in the central guide tube.

In response to question 6-3 of the draft RAI, NAC indicated that the instrument tube, the central tube, in PWR assemblies was not filled with material representing NFH for analyses with NFH present in the assemblies. The Technical Specifications were also modified to restrict NFH loadings accordingly. During its review of the response, the staff realized that, at least in some instances, the central tube in CE-style assemblies (i.e., assemblies with guide tubes larger than a single assembly lattice position) are referred to as guide tubes. It is not clear whether NAC refers to the central tube in these assemblies as instrument tubes and thereby intends to restrict the loading of NFH as done for the other PWR assembly types. The conditions of NFH loading in CE-style assemblies should be clearly indicated and consistent with the criticality analyses. This clarification is important to ensure correct understanding of the contents specifications with respect to NFH in an assembly. The criticality evaluation and the TS should be modified as necessary.

This information is needed to confirm compliance with 10 CFR 72.236(a) and (c).

DRAFT

Summary of Technical Discussion

Criticality models presented in the MAGNASTOR SAR contain fuel configurations for B&W, WE, and CE type cores. CE type fuel (core) models, in particular 14x14 and 16x16 fuel assemblies, contain five oversize guide tubes each occupying the physical location of four fuel rods, and no instrument tube locations. This is documented within the sample SAR inputs shown in Figures 6.7.1-3 and 6.7.1-4. Figure 6.7.1-3 contains a WE fuel description with both a single instrument tube and guide tubes, while Figure 6.7.1-4 contains a CE fuel model with only five guide tubes. The CE model is generated by building the central guide tube and then translating it to the remaining four locations using the "like" MCNP command. All guide tubes are filled for NFH studies.

Proposed Resolution
Category 1

The NRC staff agreed that the clarification discussion provided during the teleconference as documented in this response was adequate to close this issue.

Draft SAR Text Change

SAR text revision is not required.

13-1. Modify the proposed language added to Item I.C of Table 2-1 in Appendix B of the TS in response to draft RAI question 6-3 to read as follows:

Nonfuel hardware may be located within the active fuel elevation of either *the* guide *tubes* or *the* instrument *tube*. Nonfuel hardware must not be located in the active fuel elevation of *the* guide *tubes* and *the* instrument *tube* simultaneously.

The modifications, shown in italics, are needed to ensure that the meaning of the TS is clearly understood.

This information is needed to confirm compliance with 10 CFR 72.236(a).

Summary of Technical Discussion

NAC agreed to make the requested edits.

Proposed Resolution
Category 2

NAC agreed to make the requested edits.

DRAFT

Draft SAR Text Change

Proposed Text: Section 13B, page 13B-2
"C. PWR UNDAMAGED FUEL ASSEMBLIES may contain a flow mixer (thimble plug), ***instrument thimble***, a burnable poison rod assembly, or a control element assembly consistent with Table 2-2. ***Nonfuel hardware may be located within the active fuel elevation of either the guide tubes or instrument tube. Nonfuel hardware must not be located in the active fuel elevation of the guide tubes and instrument tube simultaneously.*** Assembly lattices not containing the nominal number of fuel rods specified ....."

13-2. Revise the TS and SAR to eliminate the authority to change fuel parameters in Appendix 1-A of the SAR and place these fuel parameters (i.e. the fuel parameters described in the proposed Appendix 1-A of the SAR, including those that were to be added in response to draft RAI Part I questions 13-3 and 13-4) in Appendix B of the TS.

As stated in question 9-5 of the draft RAI, the staff is unable to approve the currently proposed process for changing certain fuel contents parameters. The format and process do not meet the requirements of 10 CFR 72.244. Thus, Appendix 1-A of the SAR should be removed and the fuel specifications placed in Appendix B of the TS. The format proposed by NAC in response to draft RAI question 9-5 is acceptable. NAC should also ensure that all references to Appendix 1-A are removed and that all other appropriate changes to the TS (such as in Section 2.0 of Appendix A to the TS) are made so that the TS are consistent with the inclusion in the TS of the fuel specifications that are currently located in proposed Appendix 1-A of the SAR.

This information is needed to confirm compliance with 10 CFR 72.236(a) and 72.244.

Summary of Technical Discussion

NAC agreed to make the requested edits.

Proposed Resolution
Category 2

NAC agreed to make the requested edits.

DRAFT

Draft SAR Text Change

Proposed SAR edits to maintain compatibility with the revised technical specification include the following.

1. Appendix 1-A will be removed from Chapter 1 and Section 2.0 to Appendix A Technical Specifications will be renamed "Reserved" as an information place holder. Current material shown as Appendix A, Section 2.1 will be removed.
2. Chapter 1, Section 1.2, page 1.2-1 and Section 1.3, page 1.3-1 reference to Appendix 1-A will be deleted.
3. Chapter 9, Section 9.1, step 15, page 9.1-3 reference to Appendix 1-A will be deleted.
4. Appendix B Section 2.0 reference to "Table 1-A-1 and 1-A-2 of Appendix 1-A" will be deleted.
5. Revised Table 2-3 and Table 2-10 with applicable notes have been provided in response to Draft RAI 9.5 in the NAC March 14, 2007 response document.

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