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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Docket No. 72-27, SNM-2514
Humboldt Bay Independent Spent Fuel Storage Installation
10 CFR 72.48 Report of Changes, Tests, and Experiments for the Reporting Interval of
November 17, 2005, through November 17, 2007, and Report of Technical Specification
Bases Changes

Dear Commissioners and Staff:

Pursuant to 10 CFR 72.48(d)(2), the enclosure to this letter contains the Report of Changes, Tests, and Experiments for the Humboldt Bay Independent Spent Fuel Storage Installation (ISFSI), for the reporting interval of November 17, 2005, through November 17, 2007. The report contains three changes made to the cask design during the reporting interval.

Pursuant to ISFSI Technical Specification 5.1.1.d, changes to Technical Specification Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 72.48(d)(2). Therefore, this letter also provides the report on the changes to the ISFSI Technical Specification Bases.

Changes in the Facility as Described in the Final Safety Analysis Report (FSAR)

The enclosed report provides a summary of the evaluation of changes in accordance with 10 CFR 72.48. The changes were reviewed and accepted by the Plant Staff Review Committee (PSRC). The PSRC determined that the changes did not require prior NRC approval or require a change to the ISFSI Technical Specifications.

Changes in Procedures as Described in the FSAR

No changes were made to procedures as described in the FSAR during the reporting period.

NM5501

Tests and Experiments Not Described in the FSAR

No tests or experiments were performed during the reporting period that are not described in the FSAR.

Changes to the ISFSI Technical Specification Bases

No changes were made to the Technical Specification Bases during the reporting period.

Sincerely,



John S. Keenan
Senior Vice President – Generation and Chief Nuclear Officer

cc: Elmo E. Collins, Jr., NRC Region IV
James R. Hall, NRC
John B. Hickman, NRC
Ray Kellar, NRC Region IV
PG FossilGen HBPP Humboldt Distribution

Enclosure

**10 CFR 72.48 REPORT OF CHANGES, TESTS, AND EXPERIMENTS
NOVEMBER 17, 2005, THROUGH NOVEMBER 17, 2007**

**HUMBOLDT BAY INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
DOCKET NO. 72-27**

Described below are the changes made to Humboldt Bay ISFSI during the period from November 17, 2005, through November 17, 2007, including brief descriptions of the changes and summaries of the 10 CFR 72.48 evaluations. The Humboldt Bay Power Plant (HBPP) Plant Staff Review Committee has reviewed a more complete record of these changes, and determined the changes do not require prior NRC approval and do not require a change to the ISFSI Technical Specifications.

1. HISTAR HB (Engineering Change Order (ECO) 1125-8)

Description of the change:

The following changes made to Drawing 4082 Rev. 2, as discussed in ECO 1125-8, require a 10 CFR 72.48 screen/evaluation. The remainder of the changes in ECO 1125-8 do not require a 10 CFR 72.48 screen/evaluation since they are either editorial and/or administrative changes or have no impact on the intended design function of the HI-STAR HB system.

- [4] Sheet 2, Cross-sectional view: For the circumferential seam welds between the 4th and 5th gamma shells, changed the weld size to 3/8".
- [6] Sheet 2, Cross-sectional view: For the welds between the top and bottom forgings and the 1st, 2nd, and 3rd gamma shells, changed the weld size to 3/8".
- [7] Sheet 2, Detail A: Changed the weld size of the welds between the 4th & 5th gamma shells and the top flange to 3/8".
- [8] Sheet 2, Detail B: Changed the weld size of the weld between the top flange and the 4th gamma shell to 3/8".
- [9] Sheet 2, Detail C: For the weld between the 4th and 5th gamma shell and the toe ring plate, changed the weld size to 3/8".
- [12] Sheet 3, Lifting Trunnion & Top Flange: Changed the thread specification to 6-1/2-4UNC.
- [16] Sheet 6, Section E-E: For the longitudinal seam welds between the 4th & 5th gamma shells, changed the weld size to 3/8".

Justification for the change:

[4, 6, 7, 8, 9, 16] Welds are changed from full penetration to 3/8" to ease the fabrication process. Structural calculations (HI-2033042 Rev. 1, Supplement 7) demonstrate adequate margins.

[12] These changes are made to allow the fabricator to utilize bar stock already on hand at the fabricator. This change just affects the threaded portion of the trunnion; the portion of the trunnion that extends past the top forging remains the same. Structural calculations (HI-2033042 Rev. 1, Supplement 8) show adequate margins.

2. HISTAR HB (ECO 1125-4)

Description of the change:

The following changes made to Drawing 4082 Rev. 1, as discussed in ECO 1125-4, require a 10 CFR 72.48 screen/evaluation. The remainder of the changes in ECO 1125-4 do not require a 10 CFR 72.48 screen/evaluation since they are either editorial and/or administrative changes or have no impact on the intended design function of the HI-STAR HB system.

[4] Sheet 2, Cross-sectional View: Added SA-350 LF3 as an alternate material for the inner shell.

[5] Sheet 2, Cross-sectional View: Made the toe ring plate, in coordinate A8, in one-piece construction and changed the thickness to 1". Deleted the 1/2" groove weld associated with two-piece construction.

[6] Sheet 2, Cross-sectional View: Changed the weld profile to a U-groove for the inner shell to bottom plate, top flange to inner shell, and inner shell to inner shell welds (6 places including Detail C). Changed the weld symbol associated with the inner shell's circumferential seam to a U-groove, both sides.

[7] Sheet 2, Detail C: Added an option for a groove weld to the 1/4" fillet weld between the underside of the toe ring plate and the bottom plate. Added an option for a fillet weld to the 1/2" groove weld between the outermost intermediate shell and the top of the toe ring plate.

[9] Sheet 3, Top Flange: Removed the optional lifting trunnion locking pad and associated components.

[10] Sheet 3, Lifting Trunnion: Modified the trunnion design to have a machined lip. The overall trunnion dimension shall be 9-3/4" nominal. Deleted the trunnion end cap and associated components.

Justification for the change:

[4] Change is made as an option to aid in material procurement. From Section II, Part D of the ASME Code, SA350-LF3 and SA203E have nominal compositions of 3-1/2Ni and have the same thermal conductivity (Table TCD). For thermal performance, the two materials are equivalent and the change is acceptable. Since the allowable stresses of SA350-LF3 are less than those of SA203E, safety factors obtained from most of the structural evaluations of the inner shell are slightly reduced as demonstrated in Attachment A to ECO 1125-4, which identified all affected structural evaluations documented in the generic HI-STAR FSAR. The minimum safety factor of the inner

shell fabricated with SA350-LF3 is shown to be 1.81 (Attachment A to ECO 1125-4), which is acceptable (the minimum safety factor is 1.0 as defined in the FSAR). It is also verified that none of the HB specific calculation packages involving structural evaluation of HI-STAR HB is affected by ECO 1125-4.

[5] Change is made to improve fabrication. Increasing the plate thickness and eliminating the joining weld will only serve to improve the structural capability of the toe ring plate.

[6] Change is made to improve fabrication. The weld will still be full length and full penetration as currently specified. For full penetration welds, Article NF-3324.5 (f)(2) of the ASME Code states that the effective throat of a groove weld is the thickness of the thinner part joined. Because the throat dimension is the same regardless of the groove profile, it follows that the weld strengths are also the same and therefore this proposed change does not affect structural integrity of the weld.

[7] For the 1/4" fillet weld, the groove weld option is added to allow the fabricator to utilize the appropriate weld depending on the location of the toe ring plate relative to the bottom plate in the final assembly. A groove weld of the same size as the specified fillet weld is structurally equivalent. Table NG-3352-1, Subsection NG of the ASME Code specifies equivalent quality and fatigue factors for fillet and groove welds that are only visually examined so the proposed change does not affect structural capacity. For the 1/2" groove weld, the fillet weld option is added to allow the fabricator to eliminate unnecessary beveling of the outermost intermediate shell. Table NG-3352-1, Subsection NG of the ASME Code specifies equivalent quality and fatigue factors for fillet and groove welds that require final surface MT or PT so the proposed change does not affect structural strength.

[9,10] Machining a lip on the end of the trunnion, in lieu of using a bolted end cap, will eliminate the tendency of the bolt to shear off when the trunnions are engaged to the lift yoke. These changes improve performance of the trunnion and do not alter its design function.

3. MPC HB (ECO 1125-5)

Description of the change:

The following changes made to Drawing 4102 Rev. 0, as discussed in ECO 1125-5, require a 10 CFR 72.48 screen/evaluation. The remainder of the changes in ECO 1125-5 do not require a 10 CFR 72.48 screen/evaluation since they are either editorial and/or administrative changes or have no impact on the intended design function of the MPC-HB.

[7] Sheet 2, Section A-A: Changed the size of the port cover plate weld to 1/8".

[8] Sheet 2, Section A-A: Updated the view to show the lid in one-piece construction.

[15] Sheet 4, Lid Top View: Changed the minimum lid OD to 66-3/4".

[16] Sheet 4, Lid Side View: Modified the lid to be one-piece construction and eliminated the attachment weld associated with the two-piece construction. Deleted the 4-3/4" Reference dimension.

Justification for the change:

[7] This change is made to facilitate fit-up of the port cover plates. Generically, this change has been evaluated (Holtec ECO 5014-101/72.48# 706) and found acceptable. Revision 2 of the HI-STAR 100 FSAR (HI-2012610) includes the change in weld size from 3/16" to 1/8" (refer to FSAR Section 3.M.2).

[15] The slight reduction in the lid diameter will allow the lid to be more easily fitted into the shell. The change does not affect the structural integrity of the MPC nor does it affect the confinement boundary as the lid to shell weld remains unchanged. The decrease in diameter will only decrease the shielding effectiveness by a minimal amount. Generically, this change has been evaluated (Holtec ECO 1021-67/72.48# 739) and found acceptable.

[8,16] The change is made to indicate that the Humboldt Bay MPC lids are to be constructed from a single forged piece. Functionally, the single piece lid is identical to the two-piece construction and has the same structural strength.