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U.S. Nuclear Regulatory Commission
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Your ref: Docket No. 52-006
Our ref: DCP/NRC2212

July 22, 2008

Subject: AP1000 Response to Request for Additional Information (SRP3.8.2)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 3.8.2. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in the response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

A response is provided for RAI-SRP3.8.2-CIB1-01 as sent in an email from Mike Miernicki to Sam Adams dated May 29, 2008. This response completes all requests received to date for SRP Section 3.8.2.

Questions or requests for additional information related to the content and preparation of this response should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

for/ John J. DeBlasio

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Enclosure

1. Response to Request for Additional Information on SRP Section 3.8.2

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NRO

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ENCLOSURE 1

Response to Request for Additional Information on SRP Section 3.8.2

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP3.8.2-CIB1-01
Revision: 0

Question:

Tier 2, Section 3.8.2.6 of the AP1000 DCD, describes the materials used to fabricate the containment vessel. The material selected satisfies the lowest service metal temperature requirement, established by analysis for the portion of the vessel exposed to the environment when the ambient air temperature is -40EF. Westinghouse Technical Report APP-GW-GLN-113 (TR-113), "AP1000 Containment Vessel Shell Material Specification," Revision 0, submitted by Westinghouse letter dated May 11, 2007, revised this section by replacing the material specification Supplementary Requirement S17 with Supplementary Requirement S1 concerning the material fabrication process. However, revision 16 to AP1000, Section 3.8.2.6 was changed to specify the lowest service temperature of -18.5EF instead of -15EF which was previously stated in Revision 15 of the AP1000 DCD. TR-113 did not specify the change to the service temperature nor provided any justification for this change in service temperature as required by 10 CFR 52.63(a)(1). In NUREG-1793, Section 3.8.2.6, the NRC staff approved -15EF as the lowest service temperature based on the staff review of Westinghouse calculation APP-PCS-M3C-002, Revision 1, "AP1000 Containment Shell Minimum Service Temperature." Therefore, provide the reason and justification for the change in minimum service temperature of the containment vessel in accordance with 10 CFR 52.63(a)(1), and the analysis that supports the new service temperature proposed in Revision 16 of the AP1000 DCD.

Westinghouse Response:

An evaluation of AP1000 containment vessel, in the vicinity of large penetrations, was performed by Westinghouse to meet the requirements of COL Information Item 3.8-1. During this evaluation an additional scenario was postulated for the containment vessel shell analysis. The AP1000 plant is designed for sites that can have cold weather conditions with a minimum atmospheric temperature of -40 degrees F. Therefore, an SSE event was postulated to occur in conjunction with extreme cold weather condition (-40 degrees F outside temperature) and inadvertent actuation of active containment cooling. The analyses results were documented in an AP1000 calculation. The analyses determined that during this event, the containment vessel will be subjected to an external pressure of 0.9 psid and a 'Service Metal Temperature' of -18.5 degree F.

Westinghouse Technical Report APP-GW-GLR-005 submitted to the NRC described these analyses in subsection 2.4.1 of the report. Also, in Table 3.8.2-1 'Load Combinations', at the end of the report, a reference was added for this event. This Table showed the external pressure of 0.9 psid, but inadvertently did not include the corresponding 'Service Metal Temperature' of -18.5 degree F.

This change will be incorporated in the next revision of the DCD.

Design Control Document (DCD) Revision:

The following change will be incorporated in the next revision of the DCD:

- Note 6 will be added in DCD Table 3.8.2-1 as follows:

  The 'Lowest Service Metal Temperature' corresponding to -40 degree F outside temperature is -18.5 degree F.

PRA Revision:
None

Technical Report (TR) Revision:

Technical Report APP-GW-GLR-005 (TR 9) will be revised as follows:

Note 6 will be added in Table 3.8.2-1 and will read:

The 'Lowest Service Metal Temperature' corresponding to -40 degree F outside temperature is -18.5 degree F.