June 18, 2003

Mr. Gordon Bischoff, Project Manager
Westinghouse Owners Group
Westinghouse Electric Company
Mail Stop ECE 5-16
P.O. Box 355
Pittsburgh, PA 15230-0355

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION – WCAP-14040, REVISION 3, "METHODOLOGY USED TO DEVELOP COLD OVERPRESSURE MITIGATING SYSTEM SETPOINTS AND RCS HEATUP AND COOLDOWN CURVES" (TAC NO. MB5754)

Dear Mr. Bischoff:

By letter dated May 23, 2002, the Westinghouse Owners Group submitted for staff review Topical Report WCAP-14040, Revision 3, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Curves." The staff has completed its preliminary review of WCAP-14040, Revision 3, and has identified a number of items for which additional information is needed to continue its review. This was discussed in a telephone conversation with Mr. Ken Vavrek of your staff on June 5, 2003, and it was agreed that a response would be provided within 30 days of receipt of this letter.

If you have any questions, please call me at (301) 415-1436.

Sincerely,

/RA/

Drew Holland, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 694

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

WCAP-14040, REVISION 3, "METHODOLOGY USED TO DEVELOP COLD OVERPRESSURE MITIGATING SYSTEM SETPOINTS AND RCS HEATUP AND COOLDOWN CURVES"

WESTINGHOUSE OWNERS GROUP

PROJECT NO. 694

Please address the following NRC staff issues pertaining to the review of this topical report.

1. Section 2.3, page 2-5, Branch Technical Position MTEB 5-2 does not give fracture toughness "requirements." Revise WCAP-14040, Revision 3, to refer to the information in MTEB 5-2 as "guidelines" rather than "requirements."

2. Section 2.4, page 2-6, when referring to the "A_i" term in Equation 2.4-3, revise your definition which refers to it as the "measured value of ΔRT_{NDT}" – instead call it the "measured shift in the Charpy V-notch 30 ft-lb energy level between the unirradiated condition and the irradiated condition, f_i."

3. Section 2.4, page 2-7, revise the sentence which reads, "[i]f the measured value exceeds the predicted value ($\Delta RT_{NDT} + 2\sigma_\Delta$), a supplement to the PTLR must be provided to demonstrate how the results affect the approved methodology," to state "[i]f the measured value exceeds the predicted value ($\Delta RT_{NDT} + 2\sigma_\Delta$), a supplement to the PTLR methodology must be provided for NRC staff review and approval to demonstrate how the results affect the approved methodology."

4. Section 2.5, page 2-7, it is stated that K_{ia} is the reference fracture toughness curve in Appendix G to Section XI of the ASME Code. Clarify this to note that this refers to Editions of the Code through the 1995 Edition/1996 Addenda. The most recent Edition and Addenda of the Code (1998 Edition through 2000 Addenda) incorporated by reference into 10 CFR 50.55a, however, uses K_{Ic} as the reference fracture toughness curve.

5. Section 2.5, page 2-8, the "note" regarding the use of a 1.223 vs. 1.233 coefficient in the K_{Ia} equation is meaningless and confusing unless one also explains that there was a typographical error in the 1989 Edition of Section XI, Appendix G (i.e., where the 1.233 was used). Revise WCAP-14040, Revision 3, to either eliminate this note or revise the note to offer additional explanation regarding the historical basis for the 1.223 vs. 1.233 issue.

6. Section 2.5, page 2-8, when discussing ASME Code Case N-640, it is not correct to say that an exemption is required to implement N-640 because the NRC has not "endorsed" the Code Case. "Endorsement" implies that it has been included in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability -- ASME Section XI, Division 1." Code Case N-640 would have to be included in the edition of the ASME Code which the licensee has adopted in their facility's licensing basis in order to comply with 10 CFR 50.55a before an exemption is no longer required.

7. The statement in Section 2.5, page 2-10, regarding need for an exemption relative to modifying existing 10 CFR Part 50, Appendix G flange requirements should, for consistency be repeated in Section 2.8.

8. Section 2.6.1, page 2-12, it is stated "[t]hese stress components are used for determining the thermal stress intensity factors, K_{it}, as described in the following subsection." The following subsection is 2.6.2, "Steady-State Analyses," and it does not address the calculation of K_{It}. Revise WCAP-14040, Revision 3, to address this apparent inconsistency.

9. Section 2.6.2, page 2-14, and Section 2.6.5, page 2-15, M_m factors of 1.84, 0.918, and 3.18 are given for various reactor pressure vessel wall thickness ranges to be used when steady-state analyses are performed. It is unclear as to where these M_m factors come from (unable to locate them in any edition of ASME Section XI, Appendix G). Further, they are not consistent with what should be the same M_m factors cited on page 2-15. Revise WCAP-14040, Revision 3, to address this apparent inconsistency in the cited M_m factors.

10. Section 2.7, page 2-19, it should be noted that an exemption is required when a licensee wishes to make use of ASME Code Case N-588. Revise WCAP-14040, Revision 3, accordingly.

cc:
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