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Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Petition for Rulemaking; Request for Public Comment (Federal Register Notice dated February 8, 2000, Pages 6044-6066, Docket No. PRM-50-69)

Dear Mr./Ms. Secretary:

This letter is submitted on behalf of the members of the ASME Section XI Working Group on Operating Plant Criteria (WGOPC) in response to the Petition for Rulemaking filed by Westinghouse LLC and published in the Federal Register dated February 8, 2000 (Docket No. PRM-50-69). The petition requests that the NRC regulations governing pressure and temperature limits for the reactor pressure vessel be amended to eliminate requirements for the metal temperature of the closure head flange and vessel flange regions. In particular, the petition seeks to remove footnotes 2 and 6 from Table 1 in 10CFR Part 50, Appendix G.

The WGOPC has responsibility for maintaining Boiler and Pressure Vessel Code margins contained in ASME Section XI Appendix G – Fracture Toughness Criteria for Protection Against Failure. A list of the Working Group members is attached. In the process of evaluating recent updates to the Code Appendix G method it became apparent that non-beltline regions of the vessel, such as the closure head flange and vessel flange, could cause restrictions in the normal heatup and cooldown pressure-temperature (P-T) limit curves. Development of a technical justification was discussed in the WGOPC and fully supported by its members. The WGOPC supports this petition to eliminate the regulatory requirements causing these restrictions based on the following:

- We concur with the technical justification presented in WCAP-15315, "Reactor Vessel Closure Head/Vessel Flange Requirements Evaluation for Operating PWR and BWR Plants." The basis given in WCAP-15315 demonstrates that the integrity of the closure head/flange region is not a concern for operating plants since there are no known degradation mechanisms in these regions and the fatigue design usage factors are sufficiently low that flaws are unlikely to initiate.

- Updates to the methodology for determining P-T limits have recently been approved by the ASME Code based on extensive vessel fracture margin studies. These changes have been incorporated into Section XI Appendix G and Code Case N-640. The Code updates, which are based on improved fracture mechanics methods for calculating stress intensity factors and use of the K_{IC} instead of K_{Ia} reference fracture toughness, are sufficient to provide adequate protection against failure of the vessel without imposing additional conservatisms for the flange regions. The petition demonstrates that the flange temperature requirements are overly conservative and can be eliminated with no impact on overall vessel integrity during normal plant operation.

TEMPLATE = SECY-067

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- Plant operating flexibility, plant safety, and plant maintenance will be improved by opening the operating window between the maximum system pressure to assure vessel integrity and the minimum system pressure for pump seal operation. By eliminating the flange temperature requirements, fewer occurrences of inadvertent actuation of Low Temperature Overpressure Protection (LTOP) relief valves will occur that could lead to a LOCA if the relief valves fail to reseat. A further benefit of this action is fewer challenges to reactor coolant pump impellers and seals that could be damaged due to pump cavitation or loss of seal cooling.

In summary, the ASME Section XI WGOPC agrees with the technical bases and conclusions stated in the petition that elimination of the flange temperature requirement will improve operational flexibility and safety while having no negative impact on reactor vessel integrity. We support the petition to revise Table 1 of 10CFR50, Appendix G.

Sincerely,

Timothy J. Griesbach

Timothy J. Griesbach
Chairman, ASME Section XI WGOPC

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