



January 14, 2004

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Application of Mechanical Nozzle Seal Assemblies to Pressurizer Heater Sleeves

- REFERENCES:**
- (a) Letter from Mr. C. H. Cruse (CCNPP) to Document Control Desk (NRC), dated November 17, 2000, "Use of Mechanical Nozzle Seal Assemblies at Calvert Cliffs Nuclear Power Plant"
 - (b) Letter from Mr. C. H. Cruse (CCNPP) to Document Control Desk (NRC), dated February 27, 2001, "Request for Relief from ASME Code Requirements to Authorize Use of Mechanical Nozzle Seal Assemblies at Calvert Cliffs Nuclear Power Plant as an Alternate Repair Method"
 - (c) Letter from Mr. C. H. Cruse (CCNPP) to Document Control Desk (NRC), dated December 11, 2001, "Response to NRC Request for Additional Information Regarding ASME Code Relief Request to Authorize Use of Mechanical Nozzle Seal Assemblies at Calvert Cliffs Nuclear Power Plant as an Alternate Repair Method"
 - (d) Letter from Mr. R. J. Laufer (NRC) to Mr. C. H. Cruse (CCNPP), dated August 7, 2002, "Request for Relief for Temporary Installation of Mechanical Nozzle Sleeve Assemblies at the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (TAC Nos. MB0557 and MB0558)"
 - (e) Letter from Mr. P. E. Katz (CCNPP) to Document Control Desk (NRC), dated October 29, 2002, "Request for Relief from ASME Code Requirements to Authorize Use of Mechanical Nozzle Seal Assemblies at Calvert Cliffs Nuclear Power Plant as an Alternate Repair Method"

Reference (a) requested approval of the application of mechanical nozzle seal assemblies (MNSA) to the Reactor Coolant System (RCS) instrument and sampling nozzles. Reference (b) made a formal request for relief from the American Society of Mechanical Engineers (ASME) Code for the same application as Reference (a). Reference (c) responded to a Nuclear Regulatory Commission (NRC) request for additional information. Reference (d) approved the relief request. Reference (e) clarified the ASME Code as it applies to Calvert Cliffs. We are now expanding the application of MNSAs requested by

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References (a) and (b) to include the RCS pressurizer heater sleeves. Similar applications have been approved for Millstone Power Station (October 28, 2003), Arkansas Nuclear One (October 1, 2002), and Waterford Steam Electric Station (July 3, 2002).

The RCS instrument and sampling nozzles are ≤ 1.5 inches in diameter, the nozzles and their welds are Alloy 600 material. These nozzles are attached to the RCS piping via a partial penetration weld. Due to relatively high residual stresses at the weld interface from fabrication and high service temperatures (approximately 600°F), this type of material has been susceptible to primary water stress corrosion cracking throughout the industry. The pressurizer heater sleeves are also ≤ 1.5 inches in diameter, Alloy 600 material and attached with partial penetration welds. The heater sleeves are on the RCS pressure boundary. The pressure and temperature conditions at the heater sleeves are within the MNSA design of 2500 psia and 653°F. Drawings and calculations describing the application of MNSAs to the pressurizer heater sleeves have been submitted to the NRC as noted in Reference (a).

As described in Reference (a), Westinghouse – Combustion Engineering (CE) Nuclear Power, LLC has developed a MNSA device that can be used to repair these nozzles. The MNSA device offers several advantages because it is relatively fast to install, no welding is required, and it can be installed without draining or depressurizing the RCS. As a result, nuclear safety is enhanced because of the elimination of a fuel offload/reduced inventory requirement, and the occupational exposure to radiation associated with MNSA device installation is lower than that accrued during more traditional repairs.

Consistent with station procedures, Calvert Cliffs Nuclear Power Plant performs specific inspections of Alloy 600 components of the RCS pressure boundary at the start of each outage. Based on the results of these inspections, there are currently no identified nozzle leaks at Calvert Cliffs Nuclear Power Plant.

Based on the similarities between the RCS instrument and sampling nozzles and the pressurizer heater sleeves, the Code relief previously granted to Calvert Cliffs in Reference (d) for use of MNSAs will be applied to the pressurizer heater sleeves. All restrictions described in Reference (d) will apply to the application of MNSAs on the pressurizer heater sleeves.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



GV/EMT/bjd

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