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VICE PRESIDENT
NUCLEAR ENERGY
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April 25, 1991

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 1; Docket No. 50-317
Request for Relief from ASME Requirements

REFERENCE: (a) 10 CFR 50.55a(a)(3)

Gentlemen:

Baltimore Gas and Electric Company received verbal interim approval from the NRC Staff on April 20, 1991 for relief from ASME Section XI requirements. This letter requests final relief approval.

COMPONENT FOR WHICH RELIEF IS REQUESTED

A small through-wall flaw (hole) exists in the weld attaching a six-inch weld-on inspection port to the 30-inch Unit 1 Saltwater System header just downstream of No. 12 Service Water/Saltwater heat exchanger. This piping is classified as Class 3 for Inservice Inspection purposes. The hole is approximately one-quarter-inch diameter and was caused by corrosion.

CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

In accordance with Reference (a), relief is requested from ASME Section XI IWA 4130(1)(2), which requires that when repairing an item the flaw must be removed. This requirement is a hardship. We prefer an alternative. Interim NRC approval was granted for that alternative.

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PROPOSED ALTERNATIVE

An evaluation of the hole in the six-inch weld-o-let weld was performed to determine whether the flaw was stable or likely to propagate. The configuration was modeled using significant conservatism. The resultant stress due to a combination of deadweight, pressure, thermal expansion, and seismic was determined to be less than 500 psi. The Code allowable stress is 12,750 psi. It is concluded that stress levels are too low to cause an increase in the size of the existing hole.

We have installed a branch connection to provide a pressure boundary replacement around the six-inch weld-o-let. The branch connection was designed in accordance with the original construction code ANSI B31.1 - 1967. The requirements of ASME Section XI IWA - 7200 were met.

A drawing is attached showing the details of the branch connection. Calculations were performed to support the design. The branch was evaluated for deadweight, pressure, thermal expansion, and seismic stresses. A conservative corrosion rate was incorporated into the analysis. The stress analysis demonstrated that the branch connection stresses are well below the Code allowable values.

This alternative clearly provides an acceptable level of quality and safety.

BASIS FOR HARDSHIP

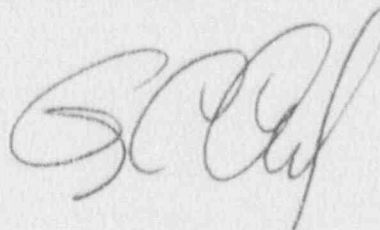
Compliance with the specified requirements would result in a hardship without a compensating increase in the level of quality and safety. Due to isolation valve leakage, repair of the small hole in the saltwater header would require securing the entire Saltwater System, which in turn would require off-loading the entire core from the reactor vessel.

IMPLEMENTATION SCHEDULE

The proposed alternative has already been implemented.

Should you have any further comments regarding this issue, we would be pleased to discuss them with you.

Very truly yours,



GCC/DLS/dls/dlm

Attachment

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cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
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D. G. McDonald, Jr., NRC
T. T. Martin, NRC
L. E. Nicholson, NRC
R. I. McLean, DNR
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ATTACHMENT

BRANCH CONNECTION CALVERT CLIFFS UNIT 1 NO. 12 SALTWATER SYSTEM HEADER

