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ELECTRIC ENGINEERING
DEPARTMENT

March 7, 1983

Director of Nuclear Reactor Regulation
Attention: Mr. R. A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Calvert Cliffs Nuclear Power Plant
Units Nos. 1 & 2; Dockets Nos. 50-317 and 50-318
NUREG-0737, Item II.B.1, Reactor Coolant System Vents

Gentlemen:

During recent telephone conversations, you requested additional clarification concerning various aspects of the design and operation of the reactor coolant vent system (RCVS) that is being installed at Calvert Cliffs in accordance with NUREG-0737. Specifically, you requested the following:

1. Verification of the acceptability of the RCVS materials fabrication and testing provisions.
2. Resolution of the potential common mode failure problem concerning the solenoid operated valves.
3. Resolution of the control power problem with positive valve position indication.
4. Clarification of the operability testing requirements.

In response to the above request, we offer the following clarifying statements:

Clarification 1:

During the design of the RCVS, a calculation was performed to determine the maximum leak rate that would result from the largest break in RCVS piping, with the objective of verifying the correct sizing and classification of RCVS piping. The calculated flow associated with this worst case break is 10 gpm, which is well within the 44 gpm capacity of a single charging pump. Based on the results of this calculation, the RCVS was designated as a Class 2 system (Quality Group B) and materials were purchased in accordance with the requirements of ASME Section III, 1974 Class II, Subsection NC. Installation was performed in accordance with the requirements of USAS B31.7, Class II consistent with our 10 CFR 50.55a commitments and Section XI of the ASME Code.

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Clarification 2:

The RCVS is comprised of two parallel vent paths, one from the reactor vessel head and one from the pressurizer vapor sample connection, each with a pair of solenoid-operated vent valves in series and then joining to form a common path to the RCS quench tank. In the event that one or both of the upstream valves is stroked while the downstream valves are dry, both downstream valves may open, oscillate, and then shut. This occurs because, in a pressurized RCVS, each solenoid-operated valve is held shut by upstream pressure in combination with spring force. In the case of a dry and unpressurized RCVS line, as may occur between the upstream and downstream valves, only the spring force will hold the downstream valve shut. If these valves experience a pressure transient in excess of 2250 psi/second during the opening of one or both of the upstream valves they may open and oscillate briefly until the line between the two valves pressurizes sufficiently to keep the valve shut. During the cycling of the upstream valve, only between five and ten gallons would be discharged to the quench tank prior to the downstream valves shutting.

Clarification 3:

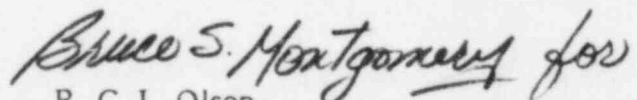
The RCVS is a post-installation NRC review item. To preclude operation of the solenoid valves prior to NRC approval of the system, control power to these valves was removed by opening and tagging a pair of leads in the control room. This method of disabling the valves was chosen so that continuous valve position indication would be maintained in the control room.

Clarification 4:

Upon NRC approval of the RCVS for use, pre-service operability testing of the RCVS valves will be performed in accordance with Subsection IWV of Section XI of the ASME Code for category B valves. Thereafter, the valves will be full-stroke exercised during each cold shutdown with the exception that in the event of frequent cold shutdowns, the valves will not be exercised more often than once every three months. This is consistent with the requirements of Subsection IWV of Section XI of the ASME Code.

If you should have any further questions concerning the design of the Calvert Cliffs RCVS, please do not hesitate to contact us.

Very truly yours,



R. C. L. Olson
Principal Engineer
Nuclear Licensing & Analysis Unit

RCLO/BSM/ERZ/gvg

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