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ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

June 7, 1983

U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Mr. James M. Allan
Acting Regional Administrator

Subject: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
IE Bulletin 83-03: Check Valve Failures in
Raw Water Cooling Systems of Diesel Generators

Gentlemen:

This refers to IE Bulletin 83-03, which requested information on failures of check valves used in cooling water systems supplying the Emergency Diesel Generators (EDG). Enclosures to this letter provide a reply to items 1 through 5 requested in the Bulletin.

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

Very truly yours,

A. E. Lundvall

STATE OF MARYLAND:
: TO WIT:
CITY OF BALTIMORE:

Arthur E. Lundvall, Jr., being duly sworn states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the response on behalf of said Corporation.

WITNESS my Hand and Notarial Seal:

Minnie L. Robinson
Notary Public

My Commission Expires: July 1, 1986

cc: Mr. D. H. Jaffe, NRC
Mr. R. E. Architzel, NRC
J. A. Biddison, Esquire
G. F. Trowbridge, Esquire

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ENCLOSURE (1)

REPLY TO INSPECTION AND ENFORCEMENT BULLETIN 83-03

1. IEB 83-03 requested a review of the In-Service Testing (IST) program for applicability to check valves in-line with the Emergency Diesel Generator (EDG) cooling water supply. We have reviewed our Pump and Valve IST program required by Section XI of the ASME Boiler and Pressure Vessel Code to verify that check valves in the flow path of cooling water for the EDG are tested in accordance with the above Code. We have determined that check valves in the supply line side (immediately downstream of the service water system pumps) are currently being tested in conformance with the Code. We have identified some check valves associated with the return line side (between the EDG auxiliaries and service water system return header) that are not currently tested for functional performance.

2. The review of the IST program, per item 1 above, was performed in such a manner as to verify that the valves were tested in both a forward and reverse direction. As a result of the review, we determined that the check valves currently tested are only verified tested in a reverse direction. This verification is performed on a quarterly basis during power operations. Forward direction tests are not specifically identified as test steps with appropriate verification signatures in our current surveillance procedures. However, we do perform a monthly EDG operability surveillance which, in effect, does verify proper function of EDG return line check valves and on service supply line side check valves. (The design of the service water system incorporates three pumps with two pumps normally on service. Monthly EDG operability verifies forward direction capability for only those service water pumps and associated discharge check valves on service during performance of the EDG surveillance). This verification is manifested by successful operation of the EDG in a fully loaded condition for periods of up to one hour.

3. IEB 83-03 requested all Licensees to perform initial valve integrity verification procedures to be completed by the end of the next refueling outage commencing after April 1, 1983. We are proceeding on a schedule to modify our IST program and perform valve integrity verification for check valves not currently tested.

4. IEB 83-03 requested all Licensees to submit a report:

   a) Listing all valves identified in (1) above.

      Enclosure (2) provides a list with designations and description of all EDG cooling water system check valves.

   b) With a description of the valve integrity verification procedure methods.

      Valve integrity verification procedures currently include a method for determining reverse seating capability by pressurizing piping downstream of the check valves and observing for a pressure rise on the upstream side of the check valves using installed instrumentation. Forward flow capability is derived from monthly EDG operability tests which verify proper operation of the diesel in a fully loaded condition for a minimum period of one hour. The IST program will be modified to provide reverse seating verification by means

of either a test similar to the test described above (using installed pressure instrumentation) or by performing a visual exam of check valve leakage using vent connections on the upstream side of the check valves for those identified check valves not currently tested.

c) With a schedule for completion of modifications for the IST program and initial verification results.

A schedule for completion of modifications to the IST program and initial valve verification results will be coordinated with the next refueling outage schedules for both units. The Unit 1 and Unit 2 outages are currently scheduled for an approximate completion date of December 1983 and June 1984, respectively.

d) With a history of any known previous failures of EDG cooling system check valves.

We have reviewed the maintenance history for the valves listed on Enclosure (2). One failure in sixteen years of combined operation for both units was found. This failure involved improper seating of a discharge check valve for No. 21 service water pump (2-SRW-314). The failure occurred following construction and was identified as obstruction of the valve seat due to foreign material. No abnormal degradation of the valve seat or body was evident.

5. IEB 83-03 has requested a report of valve integrity verification results. We have reviewed recent surveillance test results that meet the Code requirements for those valves currently tested and have determined that the valves in question are performing satisfactorily. For those valves not currently addressed in our IST program we plan to submit a report of initial valve verification results within 90 days following completion of the test schedules described in 4.c.

ENCLOSURE (2)

REPLY TO INSPECTION AND ENFORCEMENT BULLETIN 83-03

List of Emergency Diesel Generator Cooling Water System Check Valves

1-SRW-314*	11	Service Water Pump Discharge Check Valve
1-SRW-315*	12	" " " " " "
1-SRW-316*	13	" " " " " "
2-SRW-314*	21	" " " " " "
2-SRW-315*	22	" " " " " "
2-SRW-316*	23	" " " " " "
1-SRW-321	11	Diesel Generator Discharge Check Valve
1-SRW-322	12	" " " " "
2-SRW-321	21	" " " " "

*These valves are currently reverse flow tested

Typical Service Water Pump Discharge Check Valves

Manufacturer - Mission Valve & Pump Co.
Description - 14" Duo-Check Fig. No. 155MF-707

Typical Emergency Diesel Generator Discharge Check Valve

Manufacturer - William Powell Co.
Description - 6" Horizontal Swing Check Valves