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June 2, 1994

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  
NRC Generic Letter 89-10; "Safety-Related Motor-Operated Valve Testing  
and Surveillance," Clarification of Commitments (TAC Nos. M75643;  
M75644)

REFERENCES: (a) Letter from Mr. G. C. Creel (BGE) to Document Control Desk  
(NRC), dated December 28, 1989, NRC Generic Letter 89-10;  
"Safety-Related Motor-Operated Valve Testing and Surveillance"  
(b) NRC Generic Letter 89-10; "Safety-Related Motor-Operated Valve  
Testing and Surveillance"

Reference (a) provided our response to Generic Letter (GL) 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance" (Reference b). In that response, we informed you that we would meet all of the schedules and implement all of the recommendations discussed in GL 89-10. We also indicated that we expect to meet the schedule recommended in the GL (i.e., complete actions within three refueling outages or five years from June 28, 1989, whichever is longer). Accordingly, for Unit 1, our actions will be completed by the end of Refueling Outage 12 (spring 1996). For Unit 2, our actions will be completed by the end of Refueling Outage 11 (spring 1997).

Since our original response, we have gained four years of experience from implementing our program and participating in utility workshops and NRC public meetings. Additionally, six supplements have been issued that clarified or revised the positions of the original GL. Based on our experience and the updated positions of the GL, we have determined that it is now appropriate to formally clarify our original commitments to implement the GL 89-10 recommendations. Attachment (1) provides clarification in the following three areas:

1. The scope of GL 89-10;
2. The definition of a "practicable" differential pressure (dP) test; and,
3. Our plans for establishing an MOV trending program.

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With these clarifications, our program continues to meet the intent of GL 89-10. By continuing to refine the scope of the GL 89-10 program, we ensure that resources are appropriately focused on those MOVs that are critical to operations during design basis accident scenarios.

Additionally, we have applied some aspects of our program to MOVs which are not specifically in the scope of GL 89-10 (i.e., balance of plant MOVs). These MOVs are reviewed by plant project team members and assigned appropriate preventive maintenance and test activities. Since 1989, many balance of plant MOVs have been overhauled (46 on Unit 1 and 56 on Unit 2) and received the four-train limit switch modification (25 on Unit 1 and 27 on Unit 2). The four-train limit switch allows for setting valve position indication independent of torque switch bypass.

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

Very truly yours,



for

R. E. Denton

Vice President - Nuclear Energy

RED/JMO/dlm

Attachment: (1) "Clarification of Generic Letter 89-10 Commitments"

cc: D. A. Brunc, Esquire  
J. E. Silberg, Esquire  
R. A. Capra, NRC  
D. G. McDonald, Jr., NRC  
T. T. Martin, NRC  
P. R. Wilson, NRC  
R. I. McLean, DNR  
J. H. Walter, PSC

## ATTACHMENT (I)

### CLARIFICATION OF GENERIC LETTER 89-10 COMMITMENTS

#### I. ADJUSTMENT OF VALVES IN GL 89-10 SCOPE

Supplements 1 and 6 to Generic Letter (GL) 89-10 suggest conditions under which MOVs may be removed from the GL 89-10 program. Supplement 6, Enclosure 1 (page 3) states, "... licensees do not need to consider MOVs identified in emergency operating procedures (EOPs) as within the scope of GL 89-10 if they are not within the design basis of the plant."

Accordingly, we have identified several MOVs which are not safety-related and are not credited in the design basis of the plant, but are identified in EOPs. These valves have never been included in the scope of GL 89-10. They are listed below.

- 1-MOV-4025 Main Steam to No. 11 Moisture Separator Reheater Isolation Valve
- 1-MOV-4026 Main Steam to No. 12 Moisture Separator Reheater Isolation Valve
- 1-MOV-4439 Unit 1 Condensate Demineralizer System Bypass
- 1-MOV-4659 Main Steam to Unit 1 Main Turbine Gland Seal Steam Isolation
- 1-MOV-4678 Auxiliary Steam to Unit 1 Main Turbine Gland Seal Steam Isolation
- 2-MOV-4439 Unit 2 Condensate Demineralizer System Bypass
- 2-MOV-4656 Main Steam Bypass Around Unit 2 Main Turbine Gland Seal Steam Regulator
- 2-MOV-4659 Main Steam to Unit 2 Main Turbine Gland Seal Steam Regulator Isolation
- 2-MOV-4684 Auxiliary Steam to Unit 2 Main Turbine Gland Seal Steam Isolation

We have also identified several secondary steam drain MOVs [1(2)-MOV-6611, 6612, 6613, 6615, 6620, 6621] which have no active function to support system operation during a design basis event. They are identified in EOPs, but they are safety-related for pressure boundary purposes only. We have removed them from the scope of GL 89-10.

#### II. PRACTICABLE DIFFERENTIAL PRESSURE TESTING

Generic Letter 89-10 recommended action "c" states that, "... MOVs should be demonstrated to be operable by testing it at the design basis differential pressure and/or flow .... An explanation should be documented for any cases where testing with the design basis differential pressure or flow could not practicably be performed." We have concluded that a differential pressure (dP) test is not worthwhile when it provides limited data in addition to that provided by a static test. In this case, proper MOV switch settings can be ensured by using the static test data. Therefore, we will determine that dP testing is not practicable when one or more of the following conditions apply:

- A. Differential pressure testing which violates Technical Specifications is not practicable;

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- B. Differential pressure testing which has the potential to damage equipment is not practicable, e.g., isolation of suction flow to running pumps, isolation of discharge flow of running pumps without an adequate minimum flow path, etc;
- C. Differential pressure testing requiring either permanent or temporary modification of existing plant equipment is not practicable;
- D. Differential pressure testing which requires system lineups which would result in a safety concern or an unreviewed safety question is not practicable; or,
- E. Differential pressure testing is not practicable if the system cannot be configured (except during an accident) to develop sufficient differential pressure and flow to obtain flow cutoff. We acknowledge that quantifying how much flow and pressure are needed to obtain flow cutoff is not always clearly defined. We will use engineering judgment and previous test results to determine if a differential pressure test will provide flow cut off.

In summary, when test conditions will result in a distinct flow cutoff point, the dP test is practicable. If design basis conditions cannot be satisfied during the test, then a "two-stage" approach using additional analysis or testing to determine operability may be used. The two-stage approach is defined in Recommendation (f) of GL 89-10. There is also adequate industry experience to use linear extrapolation to predict performance at design basis pressures, when the dP test conditions are reasonably close to design pressures.

The two-stage approach may be used for MOVs within the GL 89-10 scope which cannot be tested at design basis conditions. When it is not practicable to perform a dP test, a static diagnostic test and approved calculations are used to set up MOVs. As additional industry information on MOV performance under dP conditions becomes available, we will review and incorporate it into our program, as appropriate.

We acknowledge that coefficient of friction (COF), valve factors, and rate of loading (ROL) data can all be obtained from a dP test. Even if flow cut off is not observed, COF and ROL can be determined. Additionally, when flow cut off is not observed, we conservatively choose the highest thrust before hard seat contact to calculate valve factors. We use plant-specific COF, ROL and valve factor assumptions that are obtained from our best available testing to ensure all MOVs (whether dP tested or not) get adequate switch settings. For additional conservatism, we add a stem lube degradation factor.

We currently plan to dP test about 24 of 50 GL 89-10 valves for each Unit.

### III. MOV TRENDING

Recommended action "h" of the GL suggests that licensees periodically examine MOV failure data as part of a monitoring and feedback effort to establish trends of MOV operability. We intend to perform diagnostic testing of MOVs every four years and retain the data collected. In the future, we will reduce our testing rate consistent with GL 89-10. We intend to trend this data to monitor MOV performance and use it as a basis for adjusting preventive maintenance action periodicities. We regularly compare MOV performance to the industry using the Component Failure Analysis Report feature of the Nuclear Plant

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Reliability Data System. We are also upgrading our data collection capabilities in order to support Maintenance Rule requirements.

Additionally, a departmental procedure has recently been written to establish guidelines for the MOV program that will allow it to smoothly transfer from a specific project team to the normal design and maintenance processes at Calvert Cliffs. This procedure includes performing root cause analysis on safety significant MOV failures and credits our Issue Report system to document safety, quality, operability and reportability concerns which affect MOVs.