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July 29, 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  
Examination Report Nos. 50-317/94-16 and 50-318/94-16(OL)

REFERENCE: (a) Letter from G. W. Meyer (NRC) to R. E. Denton (BGE), dated  
June 17, 1994, Examination Report Nos. 50-317/94-16 and 50-318/94-16  
(OL)

Enclosed is our response to your request (Reference a) for a review of the results from the license examinations administered at Calvert Cliffs from April 25-29, 1994. We have reviewed the results for generic weakness and our comments are contained below. One specific simulator scenario, a leak between the refueling water tank and the suction side of the No. 12 Low Pressure Safety Injection Pump, was reviewed in detail and is summarized in Attachment (1).

After reviewing the results and the administration of the examinations, we concluded there were areas in need of improvement. We are presently working on the following:

1. Modification of existing simulator scenarios to train Senior Reactor Operators (SROs) to direct parallel actions during implementation of Emergency Operating Procedures (EOPs) and Abnormal Operating Procedures (AOPs). Their direction should provide prompt stabilizing actions during off-normal events.
2. Reinforcing lessons learned from the licensee exams with regards to alarm annunciator control during post trip conditions. Both Licensed Operator Refresher and Initial License Operator classes will receive this training.

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3. A comprehensive initial license examination review process has been developed. This has been designed to address our responsibility and communication protocol with the NRC license examination team and to ensure a valid site specific examination is developed for the license candidates.
4. Simulator scenario development and issues resolution have been included in the comprehensive review process. Criteria have been established to ensure Calvert Cliffs and NRC management are apprised of any significant concerns during the validations of license examinations.
5. We will provide information copies of the Calvert Cliffs specific Job Task Analysis with examination reference materials to facilitate the administration of site-specific facility walk-through and operator exams.
6. We have increased the use of Simulator Static exams for the remediation of the 3 SROs that failed the license exam, in order to enhance their diagnostic skills. The increased use of Simulator Static exams is being incorporated into initial license training for future classes.
7. We have assigned mentors for each license class candidate from Nuclear Training and Nuclear Operations Sections to help develop individual plant specific knowledge and team formation skills. Increased use of Job Performance measures will be used to help evaluate candidate's readiness for license examinations.
8. Nuclear Operations and Nuclear Training sections are evaluating management expectations with regards to License candidates and Licensed Operator diagnostic skills, procedural adherence, and procedure deviation applications during simulator training sessions.
9. Noted simulator material deficiencies during the past license exam have been attributed to problems with power supplies to the "B" Central Processing Unit (CPU). The power supplies have been replaced and the simulator has been operating satisfactory. Additionally, the scheduled simulator computer upgrade will include a Uninterruptible Power Supply (UPS) that will prevent the type of weather-related failures that occurred during the past exam.

With respect to the SRO upgrade candidate who was initially graded as having failed the plant walk-through portion of the operating test, the operator was temporarily removed from licensed duties, and an assessment was performed consisting of a simulator and walk-through exam. The assessment concluded that the operator's performance was acceptable for licensed activities. Additionally, the operator appealed the results of the examination with the NRC. After reviewing the operator's appeal, the initial license denial was reversed and the operator received an SRO license.

We appreciate the opportunity to discuss our concerns involving the conduct and context of the license examinations. We look forward to working together to ensure equitable and consistent administration of operator licensing examinations in the future.

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

Very truly yours,

A handwritten signature in dark ink, appearing to be "J. E. Silberg", written in a cursive style.

RED/MDM/bjd

Attachment

cc: D. A. Brune, Esquire  
J. E. Silberg, Esquire  
M. K. Boyle, NRC  
D. G. McDonald, Jr., NRC  
T. T. Martin, NRC  
P. R. Wilson, NRC  
R. I. McLean, DNR  
J. H. Waiter, PSC

## ATTACHMENT (1)

### SCENARIO CCNRC-3 REVIEW

The Initial Training Unit has conducted a detail review of scenario CCNRC-3. The comprehensive license exams review process is designed to address issues from this review for future examinations.

#### SUMMARY

An in-depth analysis of scenario CCNRC-3 was performed with specific attention given to Events 4 and 5 within the scenario. The analysis has determined that this scenario may not meet the operating examination preparation standards of Revision 7 of NUREG-1021, in that Events 4 and 5 are not credible failures in accordance with the CCNPP UFSAR. Additionally, the grading of this scenario did not account for the CCNPP Emergency Operating Procedure (EOP) implementation philosophy as stated in Calvert Cliffs Instruction 300. The post trip immediate actions of EOP-0 are written to address monitoring and evaluation of all safety functions, with some alternate actions to improve the status of any safety function in jeopardy. The Optimal Recovery EOPs are written to address single events, and any anticipated variations to those events, in and of themselves.

#### SCENARIO DESCRIPTION

- (1) Power reduction for Main Turbine valve testing,
- (2) VCT level transmitter fails high,
- (3) CVCS/Letdown line leak inside containment,
- (4) Inadvertent SIAS/CIS Channels A&B actuation,
- (5) 12 LPSI Pp suction line break/RWT loss of inventory outside of containment.

##### **Event 4, Inadvertent SIAS/CIS Channels A&B Actuation**

**Concern:** CCNPP ESFAS is designed to meet single failure criteria. A dual failure of both channels A and B of SIAS and CIS is not credible. UFSAR Section 7.3.

##### **Event 5, 12 LPSI Pp suction line break/RWT loss of inventory outside of containment.**

**Concern:** This event introduced a double-ended guillotine break of the 12 LPSI Pp suction line, with an initial flow rate out of the break of approximately 12,000 GPM. This is not a credible failure per the safety analysis/flooding analysis. The worst case direct flooding event for the ECCS Pp Room is a crack in the 14" Safety Injection piping (while on shutdown cooling), coupled with actuation of the fire system sprinklers, with an inflow rate of 2,349 GPM. UFSAR Section 6.3.1 states, "A passive failure of such high quality components, inspected throughout plant life, is not considered credible over a short-term period." (UFSAR Sections 6.3 and 10A.6, Flooding Design Guidelines Manual, Appendix A, Section 8.2.)

## ATTACHMENT (1)

### SCENARIO CCNRC-3 REVIEW

#### CONCLUSION

Scenario CCNRC-3 appears to be contrary to the examination preparation standards of Revision 7 of NUREG-1021, "Operator Licensing Examiner Standards", specifically Section ES-301, "Preparing Operating Tests for License Applicants at Power Facilities." Below are concerns associated with the scenario.

- \* CCNPP safety analysis/flooding analysis was not used in the preparation and validation of this scenario.
- \* Scenarios were not properly validated prior to the test administration.
- \* Events 4 and 5 initiated simultaneously did not lead to a gradual degradation in plant status.
- \* Event 4 fully masked the onset of Event 5. The license candidates reacted to Event 4 by determining that the actuations were invalid, implemented the actions of the Alarm Manual, attempted to control the over-boration transient, and initiated a manual reactor trip when it was determined that the actuation signals could not be reset. All of these actions were taking place at the same time as the double ended guillotine break of a LPSI Pp suction line. As a result Event 5 was overlooked and event coverage was deficient.
- \* Events 4 and 5 were not realistic or credible and the pace of event sequencing adversely affected crew response.
- \* Event 5 initially exceeded the CCNPP Simulator modeling capability and the limits of the simulator's configuration management system. This event required the creation of a new simulator model.