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Doclet Nos. 50-317 and 50-318

Baltimore Gas and Electric Company
ATTN: Mr. George C. Creel
Vice President-Nuclear Energy
Calvert Cliffs Nuclear Power Plant
MD Routes 2 and 4
Post Office Box 1535
Lusby, Maryland 20657

Dear Mr. Creel:

Subject: NRC Region I Combined Special Inspection Report Nos. 50-317/91-09 and
50-318/91-09

This refers to your letter dated June 7, 1991, in response to our letter dated May 8, 1991.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:
Curtis J. Cowgill

Curtis J. Cowgill, Chief
Reactor Projects Branch No. 1
Division of Reactor Projects

cc:

- R. McClean, Power Plant Siting, Nuclear Evaluation
- G. Adams, Licensing (CCNPP)
- J. Walter, Engineering Division, Public Service Commission of Maryland
- K. Burger, Esquire, Maryland People's Counsel
- R. Ochs, Co-Director, Maryland Safe Energy Coalition
- Public Document Room (PDR)
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- Nuclear Safety Information Center (NSIC)
- NRC Resident Inspector
- State of Maryland (2)

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bcc:
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L. Nicholson, SRI - Calvert Cliffs
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R. Capra, NRR
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ev
7/19/91

RI:DRP
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KJS
7/19/91

RI:DRP *CL*
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7/24/91

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GEORGE C. CREEL
VICE PRESIDENT
NUCLEAR ENERGY
(201) 860-4455

June 7, 1991

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
Response to NRC Region I Combined Special Inspection Report Nos.
50-317/91-09 and 50-318/91-09

REFERENCE: (a) Letter from Mr. C. W. Hehl (NRC) to Mr. G. C. Creel (BG&E),
NRC Region I Combined Special Inspection Report Nos.
50-317/91-09 and 50-318/91-09 (March 12, 1991 to April 5, 1991 and
April 12, 1991), dated May 8, 1991

Gentlemen:

L DESCRIPTION AND CAUSE OF THE EVENT.

On March 12, 1991 at 12:48 a.m., plant operators inadvertently drained approximately 1900 gallons of Reactor Coolant System (RCS) water through the Calvert Cliffs Unit 2 Containment Spray (CS) Ring and Drain Line. This incident occurred while the operators were lining up to fill the Unit 2 Safety Injection Tanks (SITs). At the time of the event, Unit 2 was in Cold Shutdown at 100 psi on Shutdown Cooling.

The operators involved with this evolution included the supervisor directing the evolution, the on-shift Plant Watch Supervisor (PWS) and four plant operators. Pre-evolution briefings were conducted before the operators proceeded with the evolution in which Operations Instruction (OI) 3A was used. Two of the operators were directed to close a valve that would isolate the RCS from the CS header. Before completing this task, the other two operators, under the direction of the PWS, started to open a valve which created the direct path from the RCS to the CS spray ring, resulting in the inadvertent partial draining of the RCS. Additional information concerning this event can be found in LER 50-318/91-001.

On March 27, 1991, at 11:51 a.m., an inadvertent Safety Injection Actuation Signal (SIAS) was initiated on Calvert Cliffs Unit 2. The incident occurred while utility licensed operators were re-energizing the Engineered Safety Features Actuation System (ESFAS) AL Actuation Logic Cabinet. At the time of the event Unit 2 was in Cold Shutdown with an RCS temperature of 140 degrees Fahrenheit and a pressure of 220 psi.

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Two licensed operators were involved with this event, an extra Senior Reactor Operator (SRO) on duty for startup and a Control Room Operator (CRO). A pre-evolution briefing was conducted before the operators proceeded with the evolution in which OI-34, Appendix D and Appendix H were used to re-energize the cabinets. To re-energize the cabinets the operators had to reinstate the low Pressurizer Pressure Block Signal Modules before reinstating the SIAS Pressurizer Pressure Modules. The SRO read the procedure to the CRO, who in turn performed each step. The SRO failed to read two CAUTION statements to the CRO and directed him to perform steps that removed the block signal with a valid SIAS signal present, causing the inadvertent SIAS. Additional information concerning this event can be found in LER 50-318/91-002.

The root cause of the CS event was personnel error in that the PWS misinterpreted a procedure which he believed allowed him to perform steps concurrently in OI-3A. Calvert Cliffs Instruction (CCI) 300 allows the concurrent performance of procedure steps if: the steps are evaluated in the sequence listed and found not to be dependent on any other steps in the procedure; and if the Shift Supervisor or Control Room Supervisor (CRS) gives permission to do the steps concurrently. The PWS knew of the requirements of CCI-300 but failed to interpret the requirements properly and directed the manipulation of the subject valves without permission from the Control Room Supervision. Contributing to this event was a lack of proper communication between the operators, an inadequate pre-evolution briefing, and the direct involvement of the PWS in a valve manipulation.

The root cause of the ESFAS event was personnel error by the SRO directing the re-energization of the ESFAS cabinet. Specifically, the SRO failed to follow the guidance contained within the two CAUTION statements that were part of OI-34, Appendix H. By failing to conduct an adequate pre-evolution briefing and by not reading the CAUTION statements to the CRO, the SRO directed the evolution without the benefit of concurrence or feedback from the CRO.

Due to the short time between the two events and some common elements, an evaluation was performed to determine if any generic causal factors might exist between the two events as well as between previous ESFAS events. The final conclusion from this evaluation is that, while there are some areas in need of improvement such as pre-evolution briefings, supervisory methods, communication, and procedural compliance, their occurrence does not indicate a significant generic problem that would challenge safe plant operation.

II. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED.

Personnel actions were taken with the individuals who were involved. Additionally, we determined that there were areas of potentially broader weaknesses. These were addressed in General Supervisor-Nuclear Plant Operations (GS-NPO) Expectations Memos. Guidance concerning pre-evolution briefing, supervision, procedure usage, and communications was provided within these memos. The events and GS-NPO expectations were discussed with each crew.

Pre-evolution Briefing - A detailed pre-evolution briefing checklist was developed to provide more structured and consistent briefings. The Shift Supervisor or CRS must decide if a briefing is required and all of the individuals who are involved with the evolution must be present for the briefing. As part of the briefing, consideration is given to the potential results of a failure during an evolution and the barriers that could be put in place to prevent such failures. This pre-evolution briefing checklist has been formally incorporated into CCI-140.

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Supervision - Guidance on supervision was also reinforced in the GS-NPO Expectations memos. Supervisors were directed to step back and ensure they maintain an overall cognizance of the entire evolution in which they are the supervisor in charge. The role of the supervisor was better defined to prevent detailed involvement or actual hands-on manipulations from interfering with their supervisory perspective.

Procedural Compliance - The GS-NPO Expectations memo reinforced the proper use of procedures, compliance with procedures, and steps that should be taken to change incorrect procedures.

Communication - Proper communication is essential to conducting operations in a safe and quality manner. This message was re-emphasized in the GS-NPO memo and specifically stressed the need for communications to be complete such that there is no doubt as to what the intended message is. The importance of detailed repeat-backs and face-to-face communications were also reiterated. CCI-140 was revised to formally capture this guidance.

Management observations during the recent event-free startups of Unit 2 and controlled shutdowns of both units indicate the guidance provided has been beneficial with respect to operator performance. Operations supervision provided around the clock coverage during the startup of Unit 2, and observations of detailed and complete pre-evolution briefings were noted. There were many complicated and extensive tests performed during the startups and shutdowns in which supervision, communication, and procedural compliance were implemented with success.

III. CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATION

The guidance related to supervision will be formally captured in an Operations policy or procedure. This guidance will cover the supervision of Operation's activities in general, along with specific guidance on supervising evolutions involving equipment like ESFAS in the Cable Spreading Room.

To ensure operators retain a complete understanding of critical processes a list of these key processes was generated. A lesson plan for the operator requalification training cycle will be developed to cover these issues.

The specific use of concurrent steps in procedures was evaluated for applicability in each type of operations procedure. A detailed plan was developed to implement the specific changes which will be made to the procedures and to CCI-300. Additional details concerning changes made to CCI-300 will be provided in the response to Unresolved Item 50-317/91-09-02 and 50-318/91-09-02.

The lessons learned and corrective actions from these two events apply site wide, to other groups in addition to Operations. The Calvert Cliffs Plant General Manager has established a Task Circle, comprised of representatives from Operations (Circle leader) Maintenance, Radiation Safety, Chemistry, and Plant Engineering to evaluate the need for a procedure which would define expectations for procedure usage, pre-evolution briefing, and supervisory involvement.

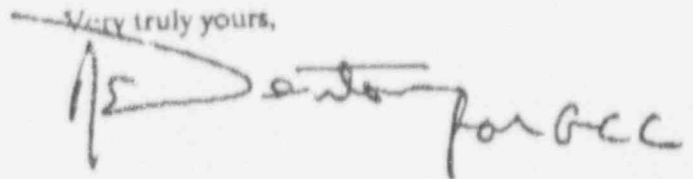
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IV. DATE WHEN FULL COMPLIANCE WAS ACHIEVED.

Full compliance was achieved on April 6, 1991 when the last Operations crew was trained on the GS-NPO Expectations.

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

~~Very truly yours,~~



GCC/MDM/mdm/bjd

cc: D. A. Bruce, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
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