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October 22, 1996

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
Reply to a Notice of Violation -- Inspection Report Nos. 50-317(318)/96-06

REFERENCE: (a) Letter from Mr. L. T. Doerflein (NRC) to Mr. C. H. Cruse (BGE), dated September 23, 1996, NRC Region I Integrated Inspection Report Nos. 50-317/96-06 and 50-318/96-06 and Notice of Violation

In response to Reference (a), Attachment (1) details our response to the cited violation concerning a failure to follow procedures during the return of a saltwater header to operation following system maintenance.

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

Very truly yours,

CHC/DWM/bjd

Attachment

cc: D. A. Brune, Esquire
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ATTACHMENT (1)

NRC INSPECTION REPORT NOS. 50-317(318)/96-06-01 NOTICE OF VIOLATION -- SAFETY SYSTEM MISALIGNMENTS DURING SALTWATER AND SERVICE WATER SYSTEM MAINTENANCE.

Notice of Violation 50-317/96-06-01 and 50-318/96-06-01 describes a nonconformance involving a failure to follow procedures during the return of a saltwater header to operation following system maintenance. The Notice of Violation states, in part, that:

On August 12, 1996, an activity affecting quality was not accomplished in accordance with documented procedures when the No. 11 Emergency Core Cooling System (ECCS) air cooler fan control switch was not placed in AUTO during the return of the No. 11 saltwater header to operation from the drained condition. Instead, the switch was placed in STOP.

I. REASON FOR THE VIOLATION

On August 12, 1996 at 2325 hours, a Control Room Operator (CRO) restored the 11 saltwater header to service in accordance with Operating Instruction OI-29, "Saltwater System," following scheduled maintenance. A step in the procedure required the 11 ECCS Air Cooler to be set in AUTO. A later procedure step required that Performance Evaluation PE 1-12-11-O-C be performed to test the saltwater header following restoration. This PE would not have resulted in any additional actions with the ECCS Air Cooler Ventilation System. The CRO, however, erroneously performed PE 1-12-11-O-M, which required that the air cooler be started. He had correctly performed OI-29 three times in the previous month and was relying on memory rather than a careful step-by-step self-check. As a result, he performed the wrong PE. After the completion of this procedure step, at approximately 2325 hours, the CRO, focusing on the fact that the test was complete, placed the fan handswitch in STOP. This was not in accordance with the Performance Evaluation, which included a step to return the handswitch to AUTO. He did not perform proper self-checking to ensure that the handswitch was left in the proper position, as required by the procedure and in accordance with management's expectation. Independent verification of this handswitch position was not performed nor was it required either at this time or during shift turnover.

The Control Room Supervisor had been monitoring the CRO's actions but was called away due to a plant computer problem prior to performance of the PE. His post-evolution review did not include any specific panel checks to verify that the header was properly restored. It was not a management expectation that he do so.

On August 13, 1996 at 1310 hours, 12 Service Water header was administratively removed from service for routine flow capacity testing. As a result, the 1B Emergency Diesel Generator, which supplies backup power to 12 ECCS train, was out-of-service since the 12 Service Water header is its heat sink. With the 11 ECCS cooler handswitch in STOP and backup power unavailable to the 12 ECCS train, Technical Specification 3.0.5, which requires full restoration of one of the systems within two hours, was inadvertently entered. The mispositioned handswitch was discovered during a routine panel walkdown by the Unit 2 Control Room Supervisor at 1335 hours, approximately 25 minutes later. It was restored after a brief consultation with the Unit 1 Control Room Supervisor and the Shift Supervisor. At the time, the Control Room personnel realized that the plant had been in Technical Specification 3.0.5 for the previous 25 minutes.

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Contributing to this event was poor human factors design of the fan position indicating lights. Both the STOP and AUTO lights for this switch are lit when the switch is in either the STOP or AUTO position. The only method for determining actual position is to look at the indicating arrow on the switch knob. The arrow is difficult to see due to its location on the panel and is misleading since, with the switch in AUTO, the arrow points straight up between the STOP and AUTO positions. A panel check performed at the time 12 Service Water header was administratively removed from service failed to note the mispositioned handswitch primarily due to the poor human factors design of the fan position indicating lights.

A similar event had occurred on March 20, 1996 when the 21 Service Water heat exchanger had been taken out of service and, on restoration, a blowdown recovery valve was not placed in its correct position. In light of this and other previous similar events, the root cause analysis of this item concluded that the current Operations human performance model does not adequately account for the risk sensitivity of certain evolutions and ensure that secondary barriers are in place to increase the probability of success. In this event, correct performance of the CRO was the only barrier to ensure that the procedure was properly performed and the equipment was correctly restored.

II. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The handswitch was restored to the AUTO position shortly after it was discovered in the STOP position.

The CRO who mispositioned the switch was provided appropriate coaching and counseling to improve his self-assessment techniques. This event has been reviewed with all shift crews.

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

The ECCS fan handswitch has been administratively controlled such that a second check of position is required upon changing the handswitch position. We are currently evaluating a modification to the switch to incorporate an automatic return to the AUTO position after manipulation. Once this modification is in place, the second check of handswitch position will be discontinued. The ECCS fan handswitch position indicators are being modified to incorporate appropriate human factors. Control Room walkdowns will be conducted to determine if similar problems exist with other indicators.

Procedure OI-29 is being reviewed to ensure that adequate second checks are in place for restoration of critical equipment. Other risk-sensitive evolutions will be evaluated to determine if similar actions are warranted.

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IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on August 13, 1996 at 1335 hours when the ECCS fan handswitch was restored to the AUTO position.