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April 28, 1993

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 Electrical Distribution System Functional Inspection (EDSFI) of Calvert Cliffs Units 1 and 2, Combined Inspection Report Nos. 50-317/92-80 and 50-318/92-80

REFERENCE: (a) Letter from Mr. M. W. Hodges (NRC) to Mr. R. E. Denton (BG&E), dated March 22, 1993, Response to Electrical Distribution System Functional Inspection (EDSFI) of Calvert Cliffs Units 1 and 2, Combined Inspection Report Nos. 50-317/92-80 and 50-318/92-80

Gentlemen:

In response to Reference (a), Attachment (1) is submitted.

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

Very truly yours,

RED/JV/jv/bjd

Attachment

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ATTACHMENT (1)

REPLY TO NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-317/92-80 AND 50-318/92-80

Notice of Violation 50-317(318)/92-80-01 identifies an instance where 10 CFR Part 50, Appendix B, Criterion XI was not met because, during a test, a degraded bus relay reset value exceeded the established acceptance value and was not evaluated to assure that requirements were satisfied.

I. DESCRIPTION AND CAUSE OF EVENT.

During surveillance testing on November 8, 1990, the reset voltage of the 4160 volt (v) Bus 24 degraded bus relay was found to be 105.77 volts, 0.77 volts above the acceptance value of less than or equal to 105.0 volts. Surveillance test results are typically evaluated, but this discrepancy was not evaluated.

The degraded bus drop-out voltage for 4160V Bus 24 relays is addressed by Technical Specification (TS) 3.3.2.1, "Engineered Safety Feature System Instrumentation," and tested by Surveillance Test Procedure (STP) M-522, "4 kV Undervoltage Relay Calibration and Response Time Check," which specifies a minimum acceptance value for the drop-out voltage setpoint of 103.19 volts, and a maximum of 104.61. Surveillance Test Procedure M-522 did not specify an acceptance value for the 4160V Bus 24 degraded bus relay reset voltage setpoint.

The cause of this event was that no procedure formally established acceptance values for the 4160V Bus 24 degraded bus relay reset voltage setpoint. Generically, the reset voltages of relays addressed by the TSs did not have acceptance values because STP M-522 did not address the relay reset voltage setpoints. Functional Test Electrical (FTE) procedure 59 is used to test, record and evaluate voltage setpoints, including relay reset voltages, for non-TS related relays. Since the 4160V relays are TS related, FTE-59 did not include them.

The primary safety function performed by the degraded grid voltage relays is to ensure that busses are divorced from the grid and transferred to the Emergency Diesel Generators (EDG) upon a sustained bus undervoltage exceeding approximately 6 seconds. This occurs when grid voltage drops below the relay drop-out voltage and remains below the reset value of 105.0 for approximately 6 seconds. If voltage recovers to a value above the reset point before the set time period expires, the relays do not cause power to be transferred to the EDGs. A higher reset value would slightly increase the probability of an unnecessary transfer to the EDGs because a higher recovery voltage would have to be reached within the set period of time after the low voltage was sensed. The reset voltage for this type of relay is fixed by a "deadband" above the drop-out setpoint. The drop-out voltage is specified in the TS and has been fully controlled by STP M-522.

Preventing unnecessary transients associated with higher than normal relay reset values is desirable. The safety significance of reset testing is minimal because the relay deadband is not adjustable, so that the maximum specification for drop-out voltage effectively limits reset values, limiting the risk of unnecessary loss of offsite power. Other factors that contribute to the low safety significance of this issue are: (1) grid voltage is routinely well above its minimum, (2) additional margin was allowed for unrelated grid transients which are very infrequent, (3) loss of one 4160V bus is not enough to cause a plant trip, (4) the consequences of a bus transfer to the EDGs if a relay fails to reset are analyzed and that capability is periodically tested, (5) since the bus transfer occurs on a 2 out of 4 logic, at least one of the other 3 relays associated with Bus 24 would have to have its reset value set correspondingly high, and (6) there is no performance-based history of plant transients resulting from relay performance which would indicate substantial safety effect. Because of

these factors, we conclude that this event did not result in any significant safety impact. Including an acceptance value for evaluation of reset voltages in future tes' will enhance safety.

II. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED.

The 4160V Bus 24 degraded bus relay reset value of 105.77 volts wa: evaluated. We concluded that acceptable margin still existed.

The 4160V Bus 24 degraded bus relay drop-out voltage was reset to a value at which the reset voltage was less than 105.0 volts.

Unit 2 reset voltages for relays in STP M-522 were tested, evaluated and found to be within the acceptance value after STP M-522 was performed in July, 1992.

Unit 1 reset voltages for relays in STP M-522 had already been evaluated after STP M-522 was performed in November, 1991.

Procedures for Unit 2 were changed to specify acceptance values for relay reset voltages for the 4160V Bus 24 and all other relays tested by STP M-522.

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

Procedures for Unit 1 will be changed to formally specify acceptance values for relay reset voltages for all relays tested by STP M-522 prior to its next use.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED.

Full compliance was achieved when the evaluation of the Unit 2 4160V Bus 24 105.77 volt degraded bus relay reset value was completed on February 24, 1992.