ROBERT E. DENTON
Vice President
Nuclear Energy

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657
410 586-2200 Ext. 4455 Local
410 260-4455 Baltimore

BGE

December 28, 1995

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 Region I Inspection Report Nos. 50-317/95-09 and 50-318/95-09

REFERENCE: (a) Letter from Mr. L. T. Doerflein (NRC) to Mr. R. E. Denton (BGE), dated December 5, 1995, same subject

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

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

Very truly yours,

RED/MDM/bjd

Attachment

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
L. B. Marsh, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
Resident Inspector, NRC
R. I. McLean, DNR
J. H. Walter, PSC

IE01
1/1

ATTACHMENT (1)

SECURITY NOTICE OF VIOLATION -- MICROWAVE SYSTEM

I. DESCRIPTION AND CAUSE OF VIOLATION

Nuclear Regulatory Commission (NRC) Regulatory Guide 5.44, "Perimeter Intrusion Alarm Systems," Section C(1)(b)(1), states, in part, that a facility's microwave perimeter alarm system should be capable of detecting an intruder between the transmitter and receiver whether walking, running, jumping, crawling, or rolling. The Baltimore Gas and Electric Company (BGE) Calvert Cliffs Physical Nuclear Security Plan, states, in part, that microwave equipment is used for perimeter intrusion detection and that the system is designed to meet the performance criteria stated in Regulatory Guide 5.44. Reference (a) indicates, that contrary to the above, vulnerabilities were identified in microwave zones in the main plant protected area and Independent Spent Fuel Storage Installation (ISFSI). The microwave system in portions of these zones failed to detect penetration attempts made by NRC contractors on October 17, 1995, by either crawling into the zones or jumping over the zones.

We accept the violation. The microwave system at the ISFSI was supplied and installed by outside contractors, with Calvert Cliffs Security personnel observing. In 1995, the plant's Protected Area fence line was moved to encompass the new Diesel Generator Building. The extension to the Protected Area fencing was provided with the same model microwave system installed at the ISFSI. Security personnel, using the knowledge they gained from observing the ISFSI installation, performed the installation of the new microwave system around the diesel generator area and were responsible for the post-installation and on-going testing at both locations.

To verify proper installation and test the adequacy of the microwave system, Security personnel used Nuclear Security Operation Technical Procedure (NSTP)-008, "Microwave Quarterly Performance Test." The requirements of Regulatory Guide 5.44 were captured in this procedure. The Security technicians though, incorrectly interpreted the Regulatory Guide, and concluded the jump test was only required if the ground outside the detection zone was higher than the ground within the monitored area. Since the terrain around the ISFSI and main plant protected area was flat, the technicians considered the jump test described in NSTP-008 was non-applicable.

Additionally, a crawl test was required in which a human attempts to penetrate each zone. NSTP-008 stated security personnel should use a metal sphere instead of a human being in locations where it is unsafe for a human being to crawl. However, the Security personnel used a metal sphere for all crawling tests. They believed the use of a human being provided inconsistent results and the sphere was harder to detect which would provide better results. Although, the use of a sphere was a technically sound practice, personnel failed to follow the procedure as written.

In summary, the security personnel involved with overseeing the installation and testing of the Calvert Cliffs microwave system did not fully understand the system testing requirements contained in Regulatory Guide 5.44. The technicians relied on knowledge they gained from observing the contractor responsible for installing the system at the ISFSI and from working with other BGE personnel, who, prior to Security, were responsible for maintaining and testing the microwave system. The Security technicians did not verify the method of testing used previously was in accordance with the regulatory guide requirements.

II. CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

Following discovery of the error, members of the Nuclear Security Force were posted as compensatory measures at the affected areas until the microwave system was modified to ensure an adequate area of intrusion detection coverage. Additional microwave transceivers were added to the ISFSI. Climbing impediments were also installed on fixed structures at the ISFSI and the entire protected area perimeter microwave system to prevent individuals from climbing and leaping over a zone of detection. Detection capability was returned to full compliance, in accordance with Regulatory Guide 5.44, on October 27, 1995, after proper testing was completed.

III. CORRECTIVE ACTIONS TAKEN TO AVOID FURTHER VIOLATIONS

A Root Cause Analysis (RCA) was performed by the Calvert Cliffs Operating Experience Review Group to address the cause(s) associated with this issue and to create effective corrective actions. The RCA concluded the Security technicians did not fully understand the requirements of Regulatory Guide 5.44. Additionally, the review determined the actual crawl tests performed, involving the use of the metal sphere, did not match the process described in NSTP-008.

To ensure the requirements of Regulatory Guide 5.44 are fully satisfied, appropriate Security personnel received specific training from the microwave vendor on how to maintain and test the system. Additional training modules covering other security systems are also being developed to keep Security personnel fully qualified. The various programs within Security will now be reviewed on an on-going basis to determine if personnel performing program tasks have sufficient knowledge of the program's administrative, technical, and regulatory requirements.

Changes are being made to NSTP-008. The procedure is being revised to eliminate any confusion as to the conditions under which a jump test should be performed or when a metal sphere, in place of a human being, should be used. These changes will be made before the next scheduled test of the microwave system. Periodic spot-checks of selected Security procedures will be performed to determine if actual field work practices agree with the stated procedural requirements.

As stated above, several steps were taken to ensure the microwave system is in full compliance with the requirements of Regulatory Guide 5.44. To verify and validate these initiatives, an outside consultant who specializes in testing intrusion systems is being used to test the system and identify any weaknesses that may exist in our program.

IV. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on October 27, 1995, when the modifications to the microwave system noted above were completed and the system was fully tested and verified to meet the requirements stated in Regulatory Guide 5.44.