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10 CFR 2.201

September 18, 2001

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, DC 20555-0001

Subject: Peach Bottom Atomic Power Station Units 2 & 3
Reply to a Notice of Violation (Inspection Report 50-277/01-11, 50-278/01-11 dated 8/22/01)

Peach Bottom Atomic Power Station – Facility Operating License Nos. DPR-44 and
DPR-56, NRC Docket Nos. 50-277 and 50-278

Gentlemen:

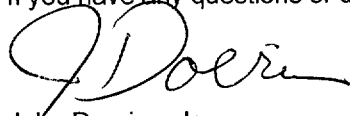
In response to your letter dated 8/22/01 which transmitted a Notice of Violation (NOV) concerning the on-site public address system, we submit the attached response. The violation involves the performance of the system used to notify plant personnel of emergency preparedness events.

As noted in your 8/22/01 letter, Exelon has taken significant steps to strengthen Emergency Preparedness performance.

In accordance with NEI 99-04, the regulatory commitment contained in this correspondence is to restore compliance with the regulations. The specific methods that are planned to restore and maintain compliance are discussed in the attachment.

Finally, in discussions with the senior resident inspector, we understand that this issue is not being considered for escalated enforcement contrary to what is stated in your 8/22/01 cover letter. If this is incorrect, please inform us as soon as possible.

If you have any questions or desire additional information, please do not hesitate to contact us.



John Doering, Jr.
Vice President,
Peach Bottom Atomic Power Station

Attachments

cc: H. J. Miller, Administrator, Region I, USNRC
A. C. McMurtry, USNRC Senior Resident Inspector, PBAPS

CCN 01-14089

IE01
IE35

Exelon Nuclear
Peach Bottom Atomic Power Station

REPLY TO NOTICE OF VIOLATION EA-01-148

Restatement of Violation

10 CFR 50.54(q) requires, in part, that a licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans that meet the standards in 10CFR 50.47(b) and the requirements in 10CFR 50, Appendix B.

10 CFR 50.47(b)(8) requires that adequate emergency facilities and equipment to support an emergency response are provided and maintained.

10 CFR 50 Appendix E, Section IV.E.9, requires, in part, that the onsite communication system have a backup power source.

The Nuclear Emergency Plan for the Peach Bottom Atomic Power Station and Limerick Generating Station, Section 4.4.1.2, Notifications, states that the plant Public Address (PA) System and the evacuation alarm/siren (EA) are the means to notify personnel of the protective actions required. Emergency Response Procedure (ERP) 130, Site Evacuation, provides the sequence for informing and alerting personnel of hazards warranting evacuation.

Contrary to the above, for various periods, as set forth below, adequate emergency facilities and equipment to support an emergency response were not maintained in that the plant PA/EA system would not function to inform and alert personnel, in the sequence provided by ERP 130, of hazards in the power block. Specifically,

1. From 1992 to December 19, 2000, approximately 47% of the PA system's speakers were either inaudible or degraded to the point that personnel were not able to clearly hear instructions.
2. From January 19, 2001 to February 13, 2001, and again from March 20, 2001 to April 17, 2001, the plant PA system was operated only on the backup power breaker, which would have tripped after about 49 seconds of evacuation alarm actuation on the first sequence. (The primary breaker had tripped following the monthly test [at] the beginning of each period.)
3. On February 13 and April 17, 2001, the plant PA/EA system would not properly function in that both the primary and the backup breakers were tripped for periods of 4.5 hours and 1.5 hours resulting in no system capability to provide instruction or sound the evacuation alarm.

Reasons For The Violation

Issue #1 – 47% of PA system speakers inaudible or degraded

The reason that the speakers were inaudible or degraded was attributable to the deletion of a routine test in 1992 that checked the capability of the speakers. Without the routine test, there was no mechanism in place that would verify the capability of each speaker. There was a routine test in place to activate the on-site emergency response system to ensure proper operation. However, the actual speaker by speaker audibility check was discontinued in 1992. The test was discontinued due to not recognizing the importance of the audibility of the speakers in carrying out the emergency plan commitments. It was believed that the remaining routine test to activate the system for proper operation was sufficient to meet the regulatory requirements and ensure plant personnel were notified of events.

It should be noted that the number '47%' of the PA system speakers inaudible or degraded was the percentage (233 of 491 areas) discovered on 4/20/00. This does not mean that 47% of the speakers were inaudible or degraded for the entire period of time between 1992 and 2000. It would be extremely unlikely that the degradation immediately occurred in 1992. More likely, it was a gradual degradation that culminated in the 47% value on 4/20/00.

Issue #2 – Operation of the PA system only on the backup breaker (which would have tripped after 49 seconds of operation)

The reason that the PA system was only operated on the backup breaker (which would have tripped after 49 seconds) during the 1/19/01-2/13/01 and 3/20/01-4/17/01 timeframes is due to a less than adequate modification that was performed on the PA system in the early 1990's. This modification resulted in a condition where additional current would be drawn on the circuit resulting in the possibility of breakers tripping. The modification installed additional PA speakers and modified the PA system to limit access to the plant page while maintaining the ability to page individuals in the Main Control Room. The load study performed for the modification utilized the nominal current draw but did not consider the power consumption for other modes of system operation such as when the site evacuation alarm system is operated. This design concern was due to less than adequate design practices in the early 1990's that did not ensure design personnel reviewed the emergency preparedness operational aspects of the system. It was not clear to the involved personnel at that time that the site evacuation alarm used the same power supply as the public address and therefore, the combined affect was not considered. This design deficiency did not actually result in tripping of the breakers until December 2000 when the PA speakers were repaired as a result of the discovery that 47% of the PA speakers were inaudible or degraded. The repair resulted in more current being drawn on the circuit and creating the condition of having the breakers trip during testing.

The reason that the primary breakers were not known to be tripped is due to a less than adequate routine test procedure of the PA system. During a test on 1/19/01 and again on 3/20/01 the as-left status of the power supply breakers (both normal and backup) were not checked. Therefore, there was no assurance that the system redundant power supplies were both available at the end of the test.

Issue #3 – Both primary and backup breakers tripped on 2/13/01 and 4/17/01

On these two days, the performance of the routine test that verified operation of the PA system was performed. On 2/13/01, the alternate power supply appears to have tripped at the end of the test. The primary power supply was unknowingly unavailable due to it tripping on the 1/19/01

Reply to Notice of Violation EA-01-148

performance of the test. Therefore, when the alternate breaker tripped at the end of the 2/13/01 test, there was no power available until later on 2/13/01 when other equipment fed from the power supply was discovered to be not working. Both breakers were then restored and the system was returned to service. The breakers were checked in accordance with the existing design and appeared to be working properly. However, the individuals involved were not aware of the inadequate design of the PA system power supplies.

Similarly on 4/17/01, the alternate power supply tripped during the routine PA system functional test. The primary power supply was unknowingly unavailable due to it tripping on the 3/20/01 performance of the test. Therefore, when the alternate breaker tripped during the 4/17/01 test, there was no power available. Both breakers were then restored and the system was returned to service. Corrective action was initiated to investigate the repeat maintenance on the breakers and to investigate potential design inadequacies with the system.

Summary of the Reasons for the Violation:

The underlying reasons for the above specific concerns are as follows:

1. Less than adequate modification performed in the early 1990's due to not considering the operating loads required for the plant evacuation notifications.
2. Less than adequate understanding of the tie between the PA system and the emergency preparedness requirements.
3. Less than adequate assessment of the impact to the emergency planning requirements when the breakers were discovered to be tripped.

Corrective Steps That Have Been Taken And The Results Achieved

A thorough root cause evaluation was performed by a team of investigators to understand the root causes of this issue and to determine appropriate corrective actions to prevent recurrence. The report identified underlying reasons that this event occurred. These reasons are summarized above.

On 5/15/01, the routine test to functionally verify the performance of the site evacuation alarm was revised to ensure that normal and alternate power supplies are routinely verified to be in their correct position subsequent to the test. This ensures that the as left condition of the test is known to be within the emergency planning requirements. This revision also placed interim limits on the amount of time the evacuation alarm is activated to minimize the potential for breakers tripping until the design change was completed on 8/25/01.

On 8/25/01, the power supply circuitry was modified to ensure that the normal and alternate power supply breakers would be adequate to handle the maximum required current required to meet emergency planning PA system requirements. Appropriate testing was performed as a result of this modification and the system was assured to be operating as defined in the Emergency Plan.

Corrective Steps That Will Be Taken To Avoid Further Violations

Appropriate engineering controls will be enhanced as necessary to assure that all load conditions are evaluated during modification design activities. This is intended to ensure that all operational aspects of the equipment being modified are evaluated for electrical loading considerations.

Reply to Notice of Violation EA-01-148

Appropriate emergency planning training will be revised to include training on components which are required to implement the Emergency Plan. Also, the training will include compensatory measures that are required if emergency plan related equipment becomes unavailable.

In addition to actions planned for this particular issue, a multi-disciplined team has been put in place to enhance overall emergency preparedness equipment reliability.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on 8/25/01 when design changes were performed to the normal and alternate power supply circuitry for the emergency planning PA system.