

July 16, 1997

Mr. D. M. Smith, President
PECO Nuclear
Nuclear Group Headquarters
Correspondence Control Desk
P. O. Box 195
Wayne, Pennsylvania 19087-0195

SUBJECT: COMBINED INSPECTION REPORT NOS. 50-277/97-02; 50-278/97-02

Dear Mr. Smith:

This refers to your July 7, 1997 correspondence, in response to our June 4, 1996 letter.

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:

Paul D. Swetland, Acting Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-277; 50-278

9707240297 970716
PDR ADDCK 05000277
Q PDR



cc:

T. Mitchell, Vice President, Peach Bottom Atomic Power Station
G. Rainey, Senior Vice President, Nuclear Operations
G. Edwards, Plant Manager, Peach Bottom Atomic Power Station
D. Fetters, Vice President, Nuclear Station Support
G. A. Hunger, Jr., Chairman, Nuclear Review Board and Director, Licensing
J.W. Durham, Sr., Senior Vice President and General Counsel
T. Neissen, Director, Nuclear Quality Assurance
G. Lengyel, Manager, Experience Assessment

cc w/cy of licensee's ltr:

A. F. Kirby, III, External Operations - Nuclear, Delmarva Power & Light Co.
W. T. Henrick, Manager-External Affairs, Public Service Electric & Gas Co.
J. A. Isabella, Manager, Joint Generation, Atlantic Electric
R. McLean, Power Plant Siting, Nuclear Evaluations
J. H. Walter, Chief Engineer, Public Service Commission of Maryland
R. Ochs, Maryland Safe Energy Coalition
J. Vannoy, Acting Secretary of Harford County Council
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance
Mr. & Mrs. Kip Adams
TMI - Alert (TMIA)
NRC Resident Inspector
Commonwealth of Pennsylvania
State of Maryland

Mr. D. Smith

Distribution w/cy of licensee's ltr:
 Region I Docket Room (with concurrences)
 W. Dean, OEDO
 L. M. Padovan, PM, NRR
 J. Stolz, PDI-2, NRR
 Inspection Program Branch, NRR (IPAS)
 Nuclear Safety Information Center (NSIC)
 K. Gallagher, DRP
 PUBLIC
 DOCDESK
 D. Screnci, PAO

DOCUMENT NAME: a:reply.pb

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure
 "N" = No copy

OFFICE	RI:DRP						
NAME	PSwetland						
DATE	7/16/97						

OFFICIAL RECORD COPY

IEU1



PECO NUCLEAR

A Unit of PECO Energy

Thomas N. Mitchell
Vice President
Peach Bottom Atomic Power Station

PECO Energy Company
1848 Lay Road
Delta, PA 17314-9032
717 456 4000
Fax 717 456 4243

July 7, 1997

Docket Nos. 50-277
50-278
License Nos. DPR-44
DPR-56

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

Subject: Peach Bottom Atomic Power Station Units 2 & 3
Response to Notice of Violations (Combined Inspection Report No.
50-277/97-02 & 50-278/97-02)

Gentlemen:

In response to your letter dated June 4, 1997 which transmitted the Notice of Violations concerning the referenced inspection report, we submit the attached response. The subject report concerned a Residents' Integrated Safety Inspection that was conducted March 8 through May 3, 1997.

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

Thomas N. Mitchell
Vice President,
Peach Bottom Atomic Power Station

Attachments

cc: W. T. Henrick, Public Service Electric & Gas
R. R. Janati, Commonwealth of Pennsylvania
H. J. Miller, US NRC, Administrator, Region I
W. L. Schmidt, US NRC, Senior Resident Inspector
T. M. Messick, Atlantic Electric
R. I. McLean, State of Maryland
A. F. Kirby III, DelMarVa Power

CCN 97-14043

9707150342 9PP

RESPONSE TO NOTICE OF VIOLATION 97-02-02

Restatement of Violation

10 CFR 50 Appendix B, Criterion III, Design Control, requires, in part, that measures be established to assure that deviations from design quality standards for safety-related systems are controlled.

Contrary to the above, between March 21 and March 26, 1997, PECO failed to maintain measures to assure deviations from the design quality standard for the safety-related residual heat removal, high pressure coolant injection, and high pressure service water systems were controlled. Specifically, PECO maintenance personnel constructed scaffolding that was in contact with or within close proximity to components in these safety-related systems without prior evaluation and approval of PECO engineering.

This violation represents a Severity Level IV problem (Supplement I).

Reason for the Violation 97-02-02

Maintenance common procedure M-C-700-335, "Scaffold Request, Erection, and Disassembly" was established and implemented to ensure scaffolding activities were conducted in accordance with Occupation Safety and Health Administration (OSHA) requirements. Additional requirements were included for scaffolding activities in nuclear safety-related areas in order to prevent the possibility of adverse interference with safety-related equipment. The procedure states in section 3.2.3, item 1 that "scaffold supported by, in contact with, or connected in any way to nuclear safety-related pipes, valves, equipment, pipe hangers, snubbers, conduit, cable trays, instrumentation, tubing or duct work shall be approved by the structural engineering branch head or his designee." This approval, however, was not obtained prior to scaffold erection in the areas noted in the violation.

Personnel from the scaffolding, erosion/corrosion/non-destructive examination preparation, asbestos abatement and lead shielding (SEAL) team were confident that the scaffolds they constructed were structurally sound. The SEAL team did not recognize, however, that scaffolding installed in contact with or in very close proximity to safety-related equipment required Engineering approval. Since the SEAL team did not recognize or perceive any structural problems with the scaffolding they constructed, they did not question or verify the scaffolding was in compliance with procedural requirements. Personnel failed to adequately follow the scaffolding procedure and to obtain Engineering approval when required.

Corrective Steps That Have Been Taken and the Results Achieved

On March 24, 1997, personnel from the Peach Bottom Engineering group and the SEAL team initiated a walkdown of the A and C residual heat removal (RHR) room to investigate and address NRC identified scaffolding concerns. The walkdown resulted in the identification of scaffolding which was in contact or close proximity to piping or components without adequate bracing. Immediate corrective actions were taken to move scaffolding or planking that was in contact with safety-related piping, cable trays, conduit or equipment. Additional bracing was installed as required in accordance with M-C-700-335. As a result of the corrective actions taken, the A and C RHR rooms were left in compliance with the requirements prescribed in the procedure.

Following investigation of the Unit 3 A and C RHR rooms, Engineering and SEAL team personnel expanded the scope of the walkdown to include scaffold in other safety-related areas. A scaffold was identified in the Unit 3 high pressure coolant injection (HPCI) system room that was supported by a structural component that was smaller than allowed by the procedure. The scaffold was immediately "red-tagged" which prohibited any further use by site personnel and was removed the next day. Review of the as-found condition by the structural engineer concluded there were no equipment operability concerns associated with the inappropriate scaffold in the HPCI room.

A walkdown of the 2 D core spray room identified instances where scaffolding was in contact with insulation on emergency service water piping and also scaffolding that was in close proximity to the motor. Engineering evaluated the scaffolding and determined it to be structurally acceptable based on adequate bracing installed and the limited seismic movement at that plant elevation.

On March 25, 1997, a Performance Enhancement Program (PEP) investigation was initiated by the SEAL team to document scaffolding that was found to be in non-compliance with M-C-700-335. This PEP investigation determined the reason for the violation to be the failure to follow procedure and documented the completed and planned corrective actions, as discussed in this reply to the violation.

On March 26, 1997, a standdown was performed for SEAL team personnel that were involved with scaffolding activities. The scaffolding standdown was conducted to reinforce the requirements of M-C-700-335 and to emphasize expectations for procedural compliance.

Later that same day the NRC notified plant personnel of a problem with scaffolding in the Unit 2 high pressure service water (HPSW) building at the D pump. Investigation determined this was another example of inadequate scaffolding clearance and was immediately corrected by the SEAL team.

A meeting was conducted that afternoon with Experience Assessment personnel, members of the SEAL team and the Engineering Duty Manager (EDM). It was determined that a 100 percent walkdown of safety-related areas in the plant was required to evaluate existing scaffolding with respect to M-C-700-335 requirements. As a result of that walkdown, thirty-eight items were identified which did not meet procedural requirements for clearance between scaffold and components or scaffold in contact with components. Items identified were immediately corrected or were evaluated by Engineering to be structurally acceptable as-found and not affecting safety function.

A memorandum from the SEAL team lead supervisor was distributed to personnel on April 4, 1997, re-emphasizing the expectation that the SEAL team first line supervisor is responsible to independently inspect and verify scaffolding activities to ensure compliance with requirements of M-C-700-335. This independent verification must be performed prior to taking the work order activity to complete.

Users of M-C-700-335 were coached on the management expectations concerning procedural compliance and were required to re-read the procedure. During the review of procedure M-C-700-335 after the incident, however, it was determined that the procedure was not well understood by personnel involved in scaffolding activities. The procedure was developed to incorporate engineering specification requirements and to provide design justification for scaffolding. As a result, SEAL team personnel did not fully comprehend the terminology and non-descriptive keywords used in the procedure. In addition, there was less than adequate training provided to individuals required to utilize this procedure. New personnel were only required to read the procedure and work with experienced scaffolding workers. Any questions were to be directed to the supervisor or the general foreman responsible for scaffolding-related activities. No formal training for use of the procedure was identified to be in-place for personnel involved in scaffolding activities.

Corrective Steps That Will Be Taken to Avoid Further Violations

Management will continue to increase coaching and monitoring of SEAL team personnel to ensure procedure compliance.

Personnel from Peach Bottom, Limerick and Chesterbrook have formed a procedure review team to thoroughly evaluate M-C-700-335 with respect to perceived subjective and misunderstood criteria, keyword definitions and terminology. This team will complete their evaluation and will revise the procedure by September 30, 1997.

Initial training of personnel required to utilize M-C-700-335 will be enhanced to include required reading, classroom training and hands-on training and testing. Completion of bi-annual continuing training will be a prerequisite for any SEAL team member who will be responsible for the planning, supervision or erection of scaffolding. These activities will be completed by September 30, 1997.

Engineering personnel will instruct and mentor supervisory staff personnel on proper scaffold construction and requirements during Health Physics (HP) plant inspections. This will result in a heightened awareness of supervisors to potential scaffold issues while conducting routine plant housekeeping inspections. This instruction to plant personnel will be completed by September 30, 1997.

Date When Full Compliance Was Achieved

Full compliance with the proximity criteria contained in Maintenance procedure M-C-700-335 was achieved March 26, 1997, when plant scaffolding was either removed or evaluated by Engineering and approved to be acceptable.

RESPONSE TO NOTICE OF VIOLATION 97-02-04

Restatement of Violation

Peach Bottom Atomic Power Station, Unit 3, Technical Specifications 3.3.2.2, "Feedwater and Main Turbine High Water Level Trip Instrumentation," requires that if two channels of this instrumentation are not operable with reactor power greater than or equal to 25%, that reactor power be reduced to less than 25% power within 6 hours.

Contrary to the above, between April 4 and April 14, 1997, two channels of the feedwater high water level trip for the C reactor feed pump were not operable and power was not reduced to less than 25% power within 6 hours. Specifically, due to a blown fuse, the C reactor feed pump trip logic was de-energized and unable to cause the pump to trip on a high level. The main turbine trip function and the trip functions on the two other reactor feed pumps remained operable.

This violation represents a Severity Level IV problem (Supplement I).

Reason for the Violation 97-02-04

At approximately 5:30 AM on April 4, 1997, the Unit 3 Reactor Operator noticed the 3C Reactor Feedwater Pump (RFP) Turbine/Reset Vacuum/Reset indicating lights appeared to be out. The bulbs were changed and swapped with those from the 3B RFP, but still would not light. The operator initiated an action request for corrective maintenance and notified shift supervision. The control room supervisor reviewed the request and characterized the issue as an apparent indicating light socket problem with no impact on operability or Technical Specifications.

Licensed supervision did not conduct adequate troubleshooting of the Turbine/Vacuum Reset indicating light. Licensed shift personnel viewed the unlit indicating light as an equipment failure similar to previous light socket failures on other equipment/system panels. The absence of any alarm or other abnormal indication, concurrent with the loss of the light, supported their categorization of this problem.

Licensed supervision was aware of the Technical Specification for the Feedwater and Main Turbine High Water Level Trip Instrumentation, however they did not correlate the loss of the indicating lights to a potential loss of power to the 3C RFP trip circuit. The surveillance tests used by Operations to satisfy the daily Channel Check Surveillance Requirement for Technical Specification 3.3.2.2 were inadequate in that they failed to verify power availability to the feedwater pump trip logic. The tests did not list the Turbine/Vacuum Reset lights as an indicator to verify power was available to the Reactor Feedwater Pump trip logic.

These factors limited the troubleshooting to bulb replacement and swapping, rather than an electrical print review or a request for additional shift technical support and caused shift supervision to classify the issue as having no operability impact. This classification prevented the issue from receiving a higher, more appropriate corrective maintenance priority as an emergent, sponsored item for investigation.

On the morning of April 11, the feedwater system manager, who had been off-site participating in factory acceptance testing for a future modification, reviewed the corrective maintenance request for the light socket problem that was identified on April 4. He identified that one possible cause of the loss of the indicating lights could be a blown fuse in the trip circuit for the 3C RFP turbine and that these lights are the only indication that the circuit's DC power supply is intact. The system manager also noted that the Tech Spec required high level trip function for the feedwater pump would be inoperable if the fuse were blown. This information was quickly discussed with the Engineering Duty Manager (EDM) and the Operations Unit Coordinator. The EDM relayed this information to the Fix It Now (FIN) team supervisor since he was aware that the FIN team had been searching for another DC ground after removing one found in the 3B Control Rod Drive (CRD) pump breaker charging motor.

The system manager, EDM and Ops Unit Coordinator agreed that the shift should be notified of the possible Tech Spec implications if the cause of the light problem were a blown fuse. The Unit Coordinator proceeded to the main control room to verify the physical layout of the RFP control panel and any components associated with a clearance he expected to develop to enable troubleshooting the fuse. He arrived at the same time that the FIN team removed the light socket from the feedwater panel. The DC ground alarm in the control room cleared when the light was removed. In addition, the FIN technician found the lights dimly lit after he removed their lens and not completely out as first reported in the corrective maintenance request of April 4. This convinced the FIN team and the Ops Unit Coordinator that the cause of the ground was most likely in the light socket and that the information the Unit Coordinator had concerning a possible blown fuse was no longer important. The Ops Unit Coordinator left the control room and notified the EDM that the light socket was the problem and it also was the source of the second DC ground.

The system manager and FIN team discussed the team's initial troubleshooting efforts later on the afternoon of April 11. The system manager specifically asked about the fuse and learned that the fuse had not been checked because the indicating lights were actually found to be "dimly lit". The "dimly lit" condition became a basis for not conducting additional investigation into the fuse since both parties rationalized that a blown fuse would have been indicated by a total loss of the light in contrast to the as-found, dimly lit lights.

They failed to realize that a weak ground "leakage current" was present in the trip circuit due to a DC ground in the local 3C RFP vacuum trip device. This leakage was sufficient to cause the indicating lights to glow dimly while the fuse was blown.

The apparent defective light socket was given to I & C to troubleshoot and determine where the ground existed. Troubleshooting efforts late on April 11 and throughout April 12, including phone conversations between the Shift Manager and the FIN team personnel originally involved in removing the light socket, could not determine the cause of the ground. Further work was re-scheduled to early Monday morning, April 14, when FIN team personnel could continue the investigation. The DC ground alarm returned when a completely new socket was installed. This supported the fact that the original socket was not the real problem and led the FIN team to conduct further troubleshooting of the control circuit and subsequent identification that the fuse was indeed blown. The operating shift then immediately entered the appropriate Tech Spec Action, replaced the blown fuse and restored the 3C RFP High Water Level Trip capability. The second ground was found in the local 3C RFP vacuum trip device and removed via installation of a temporary plant alteration.

Corrective Steps that Have Been Taken and the Results Achieved

The blown fuse in the 3C RFP trip circuit was replaced on April 14, 1997, thereby restoring the High Reactor Water Level Trip function.

On April 15, 1997, a Performance Enhancement Program (PEP) issue was initiated to analyze this Technical Specification non-compliance. This investigation determined the reasons for the violation as previously stated and also documented the corrective actions completed and planned, as discussed in this reply to violation.

The Daily Surveillance Logs, ST-O-098-01D 2(3), were revised to require a status check of the Turbine Reset/Vacuum Reset indicating lights for Technical Specification 3.3.2.2. Shift licensed operators were informed of the basis for these revisions.

The Senior Manager - Operations, emphasized his expectations concerning the appropriate depth of troubleshooting to be conducted for equipment problems during Licensed Operator Requalification training.

The Operations Services Manager discussed this event with the Unit Coordinator and clarified his expectations concerning the importance of communicating information to the operating shift regarding operability issues.

Corrective Steps That Will Be Taken to Avoid Further Violations

A list will be developed of additions to Technical Specifications as a result of the implementation of NUREG 1433, which may have surveillance testing inadequacies similar to this issue. Engineering will evaluate this list to ensure existing channel checks are sufficient to detect a loss of Technical Specification required functions. These activities will be completed by September 22, 1997.

Engineering management will emphasize to all engineering support personnel the importance of (1) the timely review of outstanding corrective maintenance requests pertaining to their systems and (2) a questioning attitude concerning troubleshooting results. This activity will be completed by August 31, 1997.

Date When Full Compliance Was Achieved

Full compliance was achieved on April 14, 1997, when the fuse was replaced and the 3C RFP trip circuit was re-energized and declared operable.