



PECO NUCLEAR

A Unit of PECO Energy

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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 Request For Additional Information to Response to Notice of Violations
(Combined Inspection Report No. 50-277/98-01 & 50-278/98-01)

Gentlemen:

This letter is in response to the telephone call from Mr. D. Florek of USNRC Region 1 requesting additional information regarding our response to the fifth violation that was identified in your letter dated May 7, 1998. This violation concerned exceeding the core thermal power rating for unit 3. Mr. Florek requested information regarding the corrective actions that will be taken to prevent this situation from recurring. The attachment contains information concerning the fifth violation that was previously submitted to the NRC in a letter dated June 3, 1998, in addition to the corrective action information that Mr. Florek requested.

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

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

Attachment
MT/mt

cc: N.J. Sproul, Public Service Electric & Gas
R. R. Janati, Commonwealth of Pennsylvania
H. J. Miller, US NRC, Administrator, Region I
A. C. McMurtray, US NRC, Senior Resident Inspector
R. I. McLean, State of Maryland
A. F. Kirby III, DelMarVa Power/Atlantic Electric

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Restatement of Violation

Facility Operating License DPR-56, Section 2.C.(1) authorizes PECO Energy Company to operate Peach Bottom Atomic Power Station (PBAPS), Unit 3, at steady state reactor core power levels not to exceed 3458 megawatts thermal (100 percent of rated thermal power).

Contrary to the above, PECO Energy Company operated PBAPS Unit 3 at a thermal power in excess of 3458 megawatts between October 22, 1995 and January 21, 1997. PECO Energy Company operated the reactor at a steady state power level up to 100.6% of rated power. This occurred due to errors in the calibration of feedwater temperature instruments in June 1995.

Reason(s) For The Violation

As stated in our original response dated June 3, 1998, miscalibrated feedwater inlet temperature instrumentation resulted in actual plant thermal power exceeding thermal power limits by 0.6 percent. This miscalibration condition existed from June 13, 1995 until discovery on January 21, 1997, but thermal limits were not exceeded until after 3R10 refueling outage in October 1996. The miscalibration resulted from use of an out-of-calibration piece of measuring and test equipment (M&TE) during a routine surveillance test. The "as-found" temperatures for the process computer feedwater temperature setpoints were approximately 0.6 degrees Fahrenheit greater than the "as-left" temperatures which caused core thermal power to be calculated approximately 25 MWTH lower than actual power. This correction, when factored into the heat balance calculation, caused core thermal power to be calculated at 100.6 percent (3477 MWTH).

Four causal factors were identified during the plant's investigation of this issue. The first was the failure of plant personnel to adequately review test results in June 1995. The technician's, operation's and plant staff review of the completed surveillance instruction (SI) overlooked the fact that every data point was changed from the as-found condition to a new setting. This should have prompted a more critical review of the test to ensure the results were valid. Also, the length of time needed to perform the test due to problems with test equipment repeatability did not prompt personnel to question the test results.

The second factor was that the SI did not adequately indicate the effects the test had on the facility. The Precautions and Limitations section of the SI did not identify the impact of changes in temperature transmitter calibration on core thermal power calculations. Revision 1 of the SI referenced changes to computer points only and did not adequately alert the procedure user or reviewers as to the importance of these computer point readings. This lack of guidance also influenced personnel reviewing M&TE out-of-tolerance reports to not recognize the impact on actual plant thermal power.

The third factor was the inadequate identification of M&TE that exhibited repetitive problems during M&TE calibration checks. Typically, M&TE used in the surveillance and calibration of permanent plant equipment is required to be identified when repeated adjustments or repairs are performed over its lifetime. The M&TE calibration review should have identified that the decade box used in the feedwater temperature transmitter calibration had frequent and repeated repairs over its lifetime. This review should have also resulted in the removal of the decade box from use in the facility.

The last factor was the use of one piece of M&TE to calibrate all four feedwater temperature transmitters. The use of one piece of test equipment on all trains associated with a particular process has been identified as problematic and does not assure adequate identification of self-induced problems in the facility. The procedure did not identify the impact on the plant or the need to use at least two separate decade boxes to remove the possibility that one piece of defective test equipment can alter plant operating parameters.

Corrective Steps That Have Been Taken And The Results Achieved

Reactor power was reduced to 100 percent (3458 MWTH) using recirculation flow. A review of surveillance tests that affect heat balance calculations was performed to determine if other tests were affected by out-of-tolerance M&TE. No other tests were affected by out-of-tolerance M&TE. In addition, all test equipment required for surveillance tests for equipment associated with core thermal power calculations were identified, recalibrated and returned to service.

Balance of plant (BOP) systems were reviewed to determine the effects of sustained operation at 100.6 percent reactor power on equipment. It was determined that there was no effect since the BOP systems had operated at or below their design parameters. A review was also conducted to determine the effects of operation at 100.6 percent power level on reactor vessel internals. The review indicated that the reactor vessel is analyzed to 102 percent, therefore the plant was operating within analyzed conditions.

Corrective Steps That Will Be Taken To Avoid Further Violations

This event was identified on January 21, 1997 and originally reported in Licensee Event Report (LER) 3-97-01 dated February 19, 1997. Immediate corrective actions were taken at the time of discovery of the event and are included above. In addition, the investigation of this issue identified several future corrective actions that have since been completed. These corrective actions are intended to prevent future recurrence of this type of event and include the following:

- Seventeen surveillance instructions identified as impacting core thermal power were revised to include plant impact statements and the requirement to perform a review when calibration adjustments were made.
- Procedures A-C-138, "Control And Use Of Measuring And Test Equipment," and AG-CG-108, "Response To Report Of Measuring And Test Equipment Out-Of-Tolerance," were reviewed to determine if revisions were required. AG-CG-108 was revised to provide additional detail and expectations as a result of this issue.
- Personnel from the following Peach Bottom and Limerick work groups; Engineering, I & C, NMD, PB Operations, Chemistry, H.P. and Radwaste, reviewed this event. Expectations for the level of review required for surveillance test results was reinforced with personnel and include understanding the impact of instrument adjustments on plant parameters.

Date When Full Compliance Was Achieved

Compliance was achieved on January 21, 1997. All corrective actions associated with this event have been completed and deemed to be effective as of February 17, 1998.