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SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

August 21, 1980

Re: Docket Nos.: 50-277
50-278

IE Bulletin 80-17

Mr. Boyce H. Grier, Director
Office of Inspection & Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Grier:

This letter is in response to Bulletin 80-17, forwarded to us on July 3, 1980, addressing the failure of 76 of 185 control rods to fully insert during a scram at a BWR. This response addresses items 2 and 3 for Unit 2 which concern the scram testing required by the bulletin.

The identification and resolution of a problem concerning the slow insertion of one control rod delayed the submittal of a complete response beyond the August 19, 1980 due date. Mr. W. M. Alden, Philadelphia Electric Company (PE), contacted Mr. R. R. Keimig, Office of Inspection and Enforcement, Region I, by telephone on August 19, 1980 to request an extension of the response due date. Mr. Keimig verbally granted PE an extension to August 21, 1980, to provide adequate time for the preparation of a complete response. Details of the control rod problem are included in item 2.a of this report.

The scram tests for Unit 2 were performed on August 13, 1980 at 1:46 PM and again on August 14, 1980 at 2:55 PM. Both tests were completed successfully.

The first scram was performed at 8% power after the initial startup following refueling. The scram was initiated by actuating the manual scram buttons. There were 97 of 185 control rods fully withdrawn. Reactor pressure was 970 psig and reactor water temperature was 515 degrees F.

The second scram was performed at 5% power after startup following the first scram test. The scram was initiated by removing two APRM's from Operate. There were 97 of 185 control rods fully withdrawn. Reactor pressure was 950 psig and reactor water temperature was 515 degrees F. The "Actions to be Taken by Licensees" for items 2 and 3 and our responses are treated sequentially.

2. Within the next 20 days, perform one manual and one automatic scram in that order at normal operating temperature and pressure and with more than 50 percent of the rods fully withdrawn, and obtain the following information on each scram:

   a) All rod insert times and as many individual rod scram times as practicable.

   b) Voltage at the scram solenoid valve buses to verify that these solenoids are de-energized upon receipt of scram signal.

   c) Verify that scram valve air is relieved through the backup valves and that the backup valves are fully open and remain open during the presence of a scram signal.

   d) Measure fill time of the instrument volume from scram initiation to closure of the scram instrument volume high level alarm switch, to closure of the rod withdraw block switch on the instrument volume and to the closure of the scram instrument volume reactor scram switch.

   e) Measure vent and drain valves opening and closing times utilizing the valve stem mounted switches. This measurement may be made independent of the scrams.

   f) Measure the delay time from scram initiation to closure of the SDV vent and drain valves utilizing the stem mounted position switches.

   g) Sample water from the instrument volume discharge after each scram for particulates.

   h) Measure the time to drain the SDV down to a repeatable reference level.

i) Monitor the SDV and associated piping for residual water.

j) Verify that the ten (10) second delay on scram reset is functioning properly to prevent resets of momentary scram signals.

k) Compare the results of the two sets of data taken above with each other and with any previously obtained data.

Response

2a) Fifty-eight individual scram times were monitored during both tests. All times were within the Technical Specification Limits. Photographs of the control rod position matrix were taken at a rate of three frames per second to determine the time for all rods in. A review of the photographs has determined that all rods but one were in within four and two-thirds seconds for the first test and all rods but one were in within four seconds for the second test.

The slow control rod (42-43) was identified during the review of the photographs. Investigation into the delayed insertion time of the slow control rod determined that one of the two scram pilot solenoid valves did not function properly. Both scram pilot solenoid valves were replaced and scram tested satisfactorily. The control rod did fully insert during both scram tests due to the proper operation of the backup scram solenoids.

2b) Voltage at the scram solenoid valve buses dropped to zero immediately upon scram and was verified to still be zero prior to resetting the scram. Voltage returned to normal immediately upon scram reset.

2c) The backup scram valves actuated upon scram initiation and depressurized the header in approximately 6.5 and 5.6 seconds during the two tests. The backup scram valves were verified to be fully open and remained open until the scram was reset.

2d) The times from scram until scram instrument volume level switch actuation are as follows:

	1st TEST	2nd TEST
High Level Alarm	22.9 Sec.	26.5 Sec.
Rod Withdraw Block	37.4 Sec.	36.8 Sec.
Scram Switch A	76 Sec.	76 Sec.
Scram Switch B	77 Sec.	76 Sec.
Scram Switch C	76 Sec.	76 Sec.
Scram Switch D	77 Sec.	81 Sec.

2e) The vent and drain valve closing and opening times from scram initiation and scram reset, respectively, are listed below.

CLOSED	1st TEST	2nd TEST
Drain	8.3 Sec.	8.3 Sec.
'A' Vent	9.7 Sec.	11.0 Sec.
'B' Vent	9.6 Sec.	9.6 Sec.

OPEN	1st TEST	2nd TEST
Drain	4.9 Sec.	4.9 Sec.
'A' Vent	3.0 Sec.	2.8 Sec.
'B' Vent	2.7 Sec.	2.7 Sec.

2f) The delay times from scram initiation to the start of valve movement for the vent and drain valves are listed below:

	1st TEST	2nd TEST
Drain Valve	5.4 Sec.	5.3 Sec.
'A' Vent Valve	5.3 Sec.	5.3 Sec.
'B' Vent Valve	6.4 Sec.	6.5 Sec.

2g) Analysis of the water samples taken from the scram instrument volume for suspended solids were 97.0 ppm for the first test and 25.6 ppm for the second test.

2h) Time from scram reset until the scram instrument volume RPS switches cleared are as follows:

	1st TEST	2nd TEST
Switch A	9 Sec.	9 Sec.
Switch B	26 Sec.	26 Sec.
Switch C	25 Sec.	25 Sec.
Switch D	7 Sec.	6 Sec.

2i) The scram discharge volume was checked for water by radiographing the pipe. The pipe had drained in less than 18 minutes during both tests.

2j) The ten second delay prior to scram reset was timed at approximately 10.5 seconds on both tests.

2k) The data from the two tests were comparable, with one exception, which was the decrease in the level of suspended solids in the water sample. This variation is believed to be

due to the flushing of the sample pipe, which is a carbon steel pipe and is normally a dead leg.

In addition to the above data, the time for the SDV pressure to stabilize was 100 seconds after the first test and was 85 seconds after the second test.

3. At the conclusion of the scram tests and all other scrams, verify that all vent lines on the SDV are functional. Verify that there is no significant amount of water in the SDV and associated piping.

Response

Surveillance Test ST 6.19, which is performed after every scram to verify that the vent system is functional, was successfully performed after both scram tests. The SDV was radiographed after both scram tests and it was verified that there was no significant amount of water in the piping.

It should be noted that both tests were performed with the newly installed positive vents on the SDV vent lines (installation required by Bulletin 80-17 Supplement 2) capped until after the scrams were reset. This had no adverse effect on the test results or the plant response.

The successful performance of these scram tests as required by IE Bulletin 80-17 completes all the requirements of the bulletin. Therefore, we are returning to the Technical Specification reporting requirements for equipment inoperability, rather than the prompt notification required by item 6.a of the bulletin for Peach Bottom Unit 2.

Very truly yours,

cc: US Nuclear Regulatory Commission
Office of Inspection & Enforcement
Division of Reactor Operations Inspection
Washington, DC 20555

COMMONWEALTH OF PENNSYLVANIA :

ss.

COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company; that he has read the foregoing response to IE Bulletin 80-17 and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

S. L. Daltroff

Subscribed and sworn to
before me this 21st day
of August, 1980

Elizabeth H. Boyer

Notary Public

ELIZABETH H. BOYER
Notary Public, Phila., Phila. Co.
My Commission Expires Jan. 30, 1982