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1881 - 1981

JOSEPH W. GALLAGHER
MANAGER
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July 21, 1981

Re: Docket Nos. 50-277
50-278

Mr. E. J. Brunner, Acting Director
Division of Resident and Project Inspection
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Brunner:

Your letter of July 1, 1981, forwarded combined Inspection Report 50-277/81-07 and 50-278/81-09 regarding Peach Bottom Atomic Power Station. Appendices A and B to your letter address certain areas which do not appear to be in full compliance with NRC requirements. These items are categorized in accordance with your interim inforcement policy (45FR66754), October 7, 1980.

The items of apparent non-compliance are restated in Appendices A and B below along with our responses. In accordance with your letter, item D of Appendix A is not addressed. Appendix B deals with aspects of our physical security plan and it is therefore requested that it be withheld from public disclosure pursuant to 2.790 of the NRC's Rules. An affidavit in support of this request is attached hereto.

Should you have any further questions, please don't hesitate to contact us.

Very truly yours,

J. W. Gallagher

PHILADELPHIA ELECTRIC COMPANY
RESPONSE TO COMBINED INSPECTION REPORTS
50-277/81-07 and 50-278/81-09

APPENDIX A

Due to the fact that the three pressure transmitters discussed in Items A and B are associated with a single event, a single response has been provided for these two items.

A. Technical Specification 3.1, "Reactor Protective System" states in part, "...the minimum number of instrument channels that must be operable for each position of the reactor mode switch shall be as given in Table 3.1.1." Table 3.1.1 requires that, when either the mode is in "Run" or both the Mode switch is in "Startup" or "Refuel" and primary containment integrity is required, two drywell high pressure instrument channels per trip system shall be operable. If the minimum number of operable sensor channels cannot be met, either the affected trip system shall be placed in the safe (tripped) condition or all operable control rods shall be inserted within four hours.

Contrary to the above, from August 9, 1980, to April 1, 1981, drywell high pressure transmitter PT 2-5-12B in the Reactor Protection System was valved out of service, reducing to one the number of operable drywell pressure instruments in one of the two trip systems, making the affected trip system inoperable, and the affected trip system was not placed in a tripped condition, and all operable rods were not fully inserted except during two days (November 15, 1980 and December 29, 1980) of the period of instrument inoperability.

This is a Severity Level IV Violation (Supplement I) applicable to DPR-44.

B. Technical Specification 3.2.B, "Core and Containment Cooling Systems - Initiation and Control", states, in part,: "The limiting conditions for operation for the instrumentation that initiates or controls the core and containment cooling systems are given in Table 3.2.B. This instrumentation must be operable when the system(s) it initiates or controls are

required to be operable..." Table 3.2.B requires two operable high drywell pressure instrument channels per trip system. If this requirement cannot be met, either the affected trip system shall be tripped or an orderly shutdown is to be initiated and the reactor placed in a Cold Shutdown condition within 24 hours. The high drywell pressure signal initiates or controls Core Spray, Low Pressure Coolant Injection, High Pressure Coolant Injection, Diesel Generators and the Automatic Depressurization System.

Contrary to the above, from August 9, 1980, to April 1, 1981, drywell high pressure transmitters PT 2-10-100A and PT 2-10-100C were valved out of service, reducing to one the number of operable drywell pressure instrument channels in each of the two trip systems, and the reactor was not placed in a Cold Shutdown condition except during one day (November 15, 1980) of the period of instrument inoperability.

This is a Severity Level IV Violation (Supplement I) applicable to DPR-44.

Response

Upon discovery of the three drywell pressure transmitter root valves in what appeared to be the closed position, the associated instruments were declared inoperable and the Nuclear Regulatory Commission promptly notified (Licensee Event Report 2-81-23/1T-0, dated April 15, 1981). An investigation was initiated to determine when the root valves may have been closed and how an instrument which was apparently valved out of service could continue to provide dynamic information. The last valve check-off list which was performed and which checked the valves as being in the correct position was dated August 9, 1980. The three valves noted were found to be in the incorrect position on April 1, 1981. However, an analysis of the daily instrument check data for the pressure channels clearly indicate that PT-2-5-12B, PT-2-10-100A and PT-2-10-100C all tracked pressure changes and indicated the same pressure as the other 5 pressure channels which were not isolated, until a few days before the incident.

To evaluate the response of the three instruments to what appeared to be significant leakage with the valves in the closed position, the valves were re-closed to their approximate as-found positions, and leak rate tests performed at pressures between

zero and 9.1 psid. Based on extrapolations of the results to postulated accident conditions, an estimate of the time from occurrence of abnormal drywell pressure until an initiation signal would have been generated by the affected transmitters was made. The results indicated that, although the instruments would not have responded within the design time, they would have provided a delayed response capability. Sufficient drywell pressure instrumentation remained in service to initiate automat ' RPS, PCIS, and ECCS actions.

As discussed in the Licensee Event Report, the three pressure transmitter root valves were immediately opened upon discovery and operability of the other five drywell pressure transmitters was verified. A valve position check of instrument rack valving for all instruments required for safety system actuation was completed on April 9, 1981. Beginning on April 1, 1981, Unit 2 safety related instrument root valve position checks were performed. This position check was completed on May 18, 1981, (following the shutdown on April 22, 1981), with no further valving errors discovered. Tags were attached to identify the valves as nuclear safety related instrument root valves, and prohibit operation without approval.

A Unit 2 safety systems valve position check list has been developed and will be conducted as soon as practicable. A similar check list for Unit 3 is approximately 50% complete and will be implemented prior to startup from the current refueling outage.

A program is in progress to develop valve position checklists for instruments which are necessary for proper operation of safety-significant equipment or for operator knowledge of equipment status under accident conditions. These checklists will cover those systems listed in Paragraph 4 of Immediate Action Letter 81-19 from Boyce H. Grier to S. L. Daltroff, Vice President, Electric Production, Philadelphia Electric Company dated April 16, 1981. This program considers automatic safety system actuation, technical specification compliance, time response requirements, means of information display, and present or proposed instrument checks. Procedures and checklists will be revised or writt n, as necessary, and approved by November 30, 1981. Most of these corrective actions were originally discussed in Immediate Action Letter 81-19, the letter from S. L. Daltroff to Boyce H. Grier, Director, Region I, dated April 29, 1981, and in License Event Report 2-81-23/1T.

Extensive investigation has not been able to determine the cause of the event. This investigation included a review of maintenance request forms for approximately a six month period, discussions with operations, and testing personnel and an open letter from the Station Superintendent to all personnel requesting information regarding the valves. The corrective actions taken are considered to represent significant improvement in control of safety system instrument valves.

Full compliance will be achieved as discussed in the April 29 letter from S. L. Daltroff to Boyce H. Grier.

C. Technical Specification 6.8. "Procedures", states in part, "Written procedures...shall be established, implemented and maintained that meet the requirements of...Appendix A of USAEC Regulatory Guide 1.33 (November 1972)..."

Appendix A of Regulatory Guide 1.33 (November 1971) states in part, "The following are typical of safety-related activities which should be covered by written procedures...

G. Procedures for Control of Radioactivity (For Limiting Materials Released to the Environment...)

1. Liquid Radioactive Waste System

a. Collection..."

Contrary to the above, on March 30-31, 1981, a "feed and bleed" operation involving collection of liquid radioactive waste was conducted on the Unit 2 Drywell Chilled Water System without establishment and implementation of a written procedure. Improper lineup resulted in a small unplanned and unmonitored release to the environment.

This is a Severity Level V Violation applicable to DPR-44.

Response

The cause of the event was operator error during a "feed and bleed" operation to reduce the radioactive inventory of the drywell chilled water closed cooling system. The system was incorrectly drained to normal waste drain system which connects to the discharge canal via the storm drain system.

As discussed in Licensee Event Report 2-81-22/1T dated April 14, 1981, when it was discovered that the system was being incorrectly drained to a normal waste drain system which empties into the discharge canal, draining was immediately terminated and appropriate sampling and investigation of the occurrence was initiated. Later the same day, a small leak from a chemical addition tank in the system was found, also going to the normal waste drain system. This leak was also immediately corrected.

Based on samples of the drywell chilled water system both before and during the feed and bleed operation, it is estimated that approximately 200 uCi were released. The major isotopes released were Na-24 and Cr-51 with traces of I-133. The average concentration during the release is estimated to be 2.5 times MPC. Total estimated release is 625 gallons over a period of 17 hours. This release was diluted in the discharge canal by a circulating water flow of at least one million gallons per minute resulting in a dilution factor in excess of one million. Samples taken at four locations in the storm drain system following termination revealed no activity.

As originally discussed in Immediate Action Letter 81-18 from James M. Allan, Region I to S. L. Daltroff, Vice President, Electric Production, Philadelphia Electric Company dated April 7, 1981, and in the letter from S. L. Daltroff to Boyce H. Grier, Region I, dated April 16, 1981, the following actions have been or will be taken:

1. A documented review of the Unit 2 Reactor Building Closed Cooling Water System and Drywell Chilled Water System has been completed. In addition, a similar review has been conducted on the Unit 2 Turbine Building Cooling Water System. The review was documented by marking P&IDs and listing valve and piping configurations in each system which required additional considerations. As a result of this review, measures have been taken to avoid further unplanned

or unmonitored radioactive releases from these systems. These measures include additional control of activities via blocking tags, rerouting of the Unit 2 drywell chillers area drain (which provided the release path to the environment), and identification of some potentially contaminated areas with ropes and signs. The items identified for further consideration have been provided to Engineering for evaluation and corrective action. A similar review and analysis will be completed on Unit 3 before startup from the present refueling outage.

2. Procedures for feed and bleed of the contaminated liquid in the Reactor Building Closed Cooling Water and Drywell Chilled Water Systems have been developed, reviewed, approved, and implemented. These procedures include prerequisites and specific instructions which provide safeguards against unplanned or unmonitored releases. The individual procedures presently approved do not require elimination of the contamination source before establishing a feed and bleed on the systems. Site personnel have been made aware of the necessity to identify the source of contamination at the earliest opportunity after radioactive contamination of any normally nonradioactive system is identified. Site staff personnel have also been made aware that specific detailed procedures must be written and approved prior to implementing feed and bleed operations on systems which become contaminated or when performing operations recognized to have a potential for release of contaminated liquids to the plant or the environs.

3. Temporary measures were taken to identify the systems which are normally nonradioactive and were contaminated. These measures include posting of signs or safety blocking. Those piping systems and components which could potentially be contaminated were marked such that individuals maintaining and operating these systems would be aware of a potential contamination problem. This work was completed on Unit 2 by April 30, 1981, and is 95% complete on Unit 3. Marking will be completed on Unit 3 components before startup from the present refueling outage. A procedure which addresses contamination control will be written and applied to activities involving work and operation of the potentially contaminated systems. This procedure will be implemented by August 1, 1981.

4. A documented review of potential liquid release paths to the environment will be completed by October 1, 1981. Potential modifications will be evaluated and a schedule for appropriate corrective actions developed by December 1, 1981.

In addition, in response to IE Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release to Environment", a review was made of nonradioactive systems which could become contaminated through interfaces with radioactive systems. A routine sampling and analysis program was initiated to promptly identify contaminating events which could lead to unmonitored or uncontrolled releases to the environment. Appropriate sample taps are being added as part of this program. Detailed information on this program was submitted in a letter from S. L. Daltroff, Philadelphia Electric Company, to B. H. Grier, NRC, on July 1, 1980. Since our submittal, we have been proceeding to complete the design of the required modifications. In addition, we have evaluated the causes of Turbine Building Cooling Water and Drywell Chilled Water contamination and are completing the design of modifications to eliminate these problems during normal operation.

5. Procedures for operation, routine calibration, and monitoring of Reactor Building Closed Cooling Water, Service Water, Radwaste Discharge and Emergency Service Water System radioactivity monitors are being developed. These procedures will include provisions for placing the monitors in service and removing the monitors from service, routine sampling of system inventory when monitors are inoperable. Procedure changes will be made to require periodic comparisons of the monitor readings to expected values. These procedures and mechanisms will be established by September 1, 1981.

Full compliance will be achieved as discussed in the April 16 letter from S. L. Daltroff to Boyce H. Grier.