U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-277/80-28
50-278/80-20

Docket No. 50-277
50-278

License No. DPR-44
DPR-56 Priority -- Category C
C

Licensee: Philadelphia Electric Company

2301 Market Street

Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station, Units 2 and 3

Inspection at: Delta, Pennsylvania

Inspection conducted: August 1 - August 31, 1980

Inspectors: E. C. McCabe, Jr. for
A. R. Blough, Resident Reactor Inspector — 10/8/80 date signed

E. C. McCabe, Jr. for
C. J. Cowgill, Resident Reactor Inspector — 10/8/80 date signed

E. C. McCabe, Jr. for
G. G. Rhoads, RRI (Susquehanna) Aug 19-21 — 10/8/80 date signed

Approved by: E. C. McCabe
E. C. McCabe, Chief, Reactor Projects Section No. 2, RO&NS Branch — 10/8/80 date signed

Inspection Summary:
Inspection on August 1 - August 31, 1980 (Combined Inspection Report Nos. 50-277/80-28 and 50-278/80-20)
Areas Inspected; Routine, on site regular and backshift inspections by the resident inspectors (53 hours, Unit 2, 53 hours Unit 3). Areas inspected included accessible portions of the Unit 2 and Unit 3 facilities, radiation protection, physical security, operational safety verification, facility tours, housekeeping, IE Bulletin followup, control room observations, LER review onsite and in-office, followup on previously identified items, and review of periodic and special reports.
Results: Noncompliances - None in seven areas, four in four areas (Infraction - failure to follow housekeeping procedures, Detail 3; infraction - failure to positively control a designated vehicle, Detail 7; deficiency - late submittal of LER's, Detail 5, and deficiency - late submittal of Thermal Mapping Reports, Detail 8).

Region I Form 12
(Rev. April 77)

DETAILS

1. Persons Contacted

W. H. Alden, Engineer-in-Charge, Nuclear Section
C. E. Andersen, Operations Engineer
W. Corse, Assistant Site QA Engineer
J. K. Davenport, Assistant Maintenance Engineer
*R. S. Fleischmann, Assistant Station Superintendent
A. Fulvio, I&C Engineer
N. Gazda, Health Physics, Radiation Protection Manager
F. W. Polaski, Reactor Engineer
S. R. Roberts, Results Engineer
R. J. Scholz, Chemistry Supervisor
J. W. Spencer, Maintenance Engineer
S. A. Spitko, Site QA Engineer
S. Q. Tharpe, Security Supervisor
*W. T. Ullrich, Station Superintendent
J. E. Winzenried, Technical Engineer
J. J. Yacyshyn, Test Engineer

Other licensee employees were contacted during the inspection. These included engineering personnel, administrative personnel, reactor operators, shift supervision, maintenance personnel, contractor personnel, health physics and security personnel.

*Denotes those present at exit interviews on site and for summation of preliminary inspection findings.

2. Previous Inspection Item Update

(Closed) Unresolved Item (277/80-14-03 and 278/80-12-01). The inspector reviewed Station Modification 80-074. This modification provided a steam deflector to direct steam from a postulated HPCI steam supply line break downstream of the isolation valve into the torus compartment to prevent pressurization of the isolation valve room. The modification also provided a permanent grating door for the room. The inspector verified that the modifications were completed on both Units within acceptable time frames, including completion on Unit 2 prior to startup following the Spring 1980 refueling outage. The inspector reviewed engineering evaluations conducted by the architect-engineer and by the licensee to confirm that the modifications would preclude excessive pressures within the isolation room under postulated conditions. The inspector had no further questions regarding this matter.

3. Plant Operations Review

a. Logs and Records

(1) Documents Reviewed

A sampling review of logs and records was made to: identify significant changes and trends; assure that required entries were being made; to verify that operating and night orders conform to Technical Specification requirements; check correctness of communications concerning equipment operating and lock-out status; verify jumper log conformance to procedural requirements; and to verify conformance to limiting conditions for operations. Logs and records reviewed were:

(a) Shift Supervisor Log, August 1-31, 1980

(b) Unit 2 Jumper Log - Current entries

(c) Unit 3 Jumper Log - Current entries

(d) Reactor Engineering Log, Unit 3 - Current entries

(e) Reactor Operators Log Book, Unit 2 - August 1-31, 1980

(f) Reactor Operators Log Book, Unit 3 - August 1-31, 1980

(g) ACO Log Book - August 1-31, 1980

(h) Night Orders - Current entries

(i) Radiation Work Permits - Various in both Unit 2 and Unit 3 during August, 1980

(j) Maintenance Request Forms (MRF's) Unit 2 and Unit 3 - Sampling Audit - August, 1980

(k) Ignition Source Control Check Sheets - Various in both Unit 2 and Unit 3

(l) Operation Work and Information Data - August, 1980

Control room logs were reviewed pursuant to requirements of Procedure A-7, "Shift Operations". Frequent initialing of entries by licensed operators, shift supervision, and licensee onsite management constituted evidence of licensee review. Logs were also reviewed to assure that plant conditions including abnormalities and significant operations were accurately and completely recorded. No unacceptable conditions were identified.

(2) Facility Tours

During the course of this inspection, which also included backshifts, the inspector conducted daily tours of accessible areas and made observations of:

-- Control Room

-- Turbine Building

-- Reactor Building

-- Diesel Generator Building

-- Yard area and perimeter exterior to the power block

-- Security Building including SAS, Auxiliary SAS, and control points to the power block

-- Security Fencing

-- Lighting

-- Vehicular Control

-- Badging and Escorting

-- Portal Monitoring

-- Control of Radiation and High Radiation areas

-- Personnel

-- Unit 2 Drywell (prior to close out)

During routine tours the following observations were made by the inspector:

-- Off-Normal Alarms. Selected annunciators were discussed with control room operators and supervision to assure they were knowledgeable of plant conditions and that corrective actions, if required, was being taken. Examples of specific alarms discussed during the report period were: APRM-High; Rod Withdrawal Block; Condensate Storage Tank; High-Low Level; Radwaste Tank Level High; CRD Accumulator Trouble; and CRD High Temperature. The operators were knowledgeable of alarm status and plant conditions.

-- Control Room Manning. On frequent occasions during this inpsection, the inspector confirmed that requirements of 10 CFR 50.54(K) and the Technical Specifications for minimum staffing requirements were satisfied. No unacceptable conditions were identified.

-- Fluid Leaks. No significant fluid leaks were identified which had not also been identified by the licensee nor for which necessary corrective action had not been initiated. The inspector observed sump status, alarms, pump-out rates, and held discussions with licensee personnel. No unacceptable conditions were identified.

-- Piping Vibration. No significant piping vibration or unusual conditions were identified.

-- Monitoring Instrumentation. The inspector frequently confirmed that selected instruments were operating and indicated values were within Technical Specification requirements. ECCS switch positioning and valve lineups, based on control room indicators and plant observations, were verified. In plant instrumentation was also frequently verified. Examples of instrumentation observed included flow setpoints, breaker positioning, PCIS status, nuclear instrumentation, radiation monitor readings, full core display indications, and SBLC parameters. No unacceptable conditions were identified.

-- Plant Housekeeping and Fire Protection. The inspector observed housekeeping conditions, fire hose station and equipment status, and observed the licensee's fire protection procedures and practices as well as the usage of firewatches. The Unit 2 outage continued to impact negatively on housekeeping conditions. Additional findings relative to housekeeping appear in "Unit 2 Drywell Tour", below.

-- Unit 2 Drywell Tour. The inspector toured the Unit 2 drywell on August 3 and 6, 1980. Areas inspected are listed below.

a) Independent verification of selected locked valves, August 3. The inspector verified that the following valves werein the locked open condition as required by Appendix A of Procedure A-8, "Procedure for Control of Locked Valves": 'A' RHR loop inlet to 'A' recirc head (81A); 'B' RHR loop inlet to 'B' recirc header (81B); Core Spray Loop 'A' manual isolation (14A); Core Spray Loop 'B' manual isolation (14B); and Standby Liquid Control inner manual isolation. The inspector identified no unacceptable conditions.

b) Observation of a valve lineup check for the Auto Depressurization System per check off list 5.3.10.A, August 3. The inspector verified that the operator performing the valve lineup identified each valve required to be checked and checked each valve open by turning the valve slightly in the closed direction and then returning the valve to the full open condition. The inspector identified no unacceptable conditions.

c) Inspection for general housekeeping and cleanliness prior to Unit 2 reactor start up, August 3 and August 6. During the tour conducted on August 3, 1980 the inspector noted that work was still in progress and that substantial effort was required to ensure dry well cleanliness would be acceptable for start up. Items remaining to be removed included temporary lighting, tools, and debris left from modification and maintenance work. Additionally, the inspector toured the Main Steam Valve Isolation Room and noted a non-technical magazine on the floor. That presented a potential fire hazard not required for work related activity. The licensee immediately removed the magazine when informed by the inspector.

The Shift Supervisor inspected the drywell on August 5, 1980 and recorded the results of this inspection at 8:00 PM in the shift supervision log, with the following entry, "D/W inspection made, clean". The inspector toured all elevations about 135 feet in the drywell on August 6, 1980 accompanied by maintenance and janitorial supervision. During this tour the inspector identified the following unacceptable conditions: insulation that was not properly fastened, one large piece of scrap deck grating, scrap pipe support material, one 18-inch length scrap of I-beam on the deck grating on 157 foot elevation, a large piece of wooden scaffolding material, numerous pieces of loose wire, welding rods and other debris. Licensee subsequently removed the items and reinspected the drywell on August 6. The failure to have the dyrwell clean for resumption of reactor operation after inspecting and logging the results of the inspection is contrary to Technical Specifications and administrative procedure A-30, "Plant Housekeeping Controls", and constitutes an item of noncompliance. (277/80-28-01).

b. Reactor Water Chemistry

The following surveillance tests for the periods indicated were reviewed by the inspector to assure that Technical Specification limits were satisfied.

(1) Conductivity and Chloride Ion Content in Primary Coolant During Normal Operation and Time Conductivity and Chloride Are Above Specified Limits

Surveillance Tests 7.2.3.A and 7.2.3.C and Peach Bottom Daily BWR Chemistry Analysis - August 13-31, 1980.

Technical Specification 3.6.B requires prior to startup and when operating at rated pressure, reactor water conductivity at 20°C of less than or equal to 5.0 umho/cm and chloride concentration less than or equal to 0.2 ppm. Reactor water quality may exceed these limits for up to two weeks per year. Maximum limits are estabished as 10 umho/cm conductivity and 1.0 ppm chlorides.

Inspections at Unit 2 for the report period indicated that during operation, the maximum conductivity and chloride concentrations reached were 1.06 umho/cmand .035 ppm respectively. Through August, the 1980 total time above the .2 ppm chlorides limits and the 5.0 umho/cm conductivity limits are 3.5 hours and 31 hours respectively.

Inspections at Unit 3 for the period indicated that during operation, the maximum conductivity was 2.25 umho/cm. Chloride concentration was greater than 0.2 ppm for 9 house on August 21, with a maximum value of 2.26 ppm. Through August, the 1980 total time above the specified "two weeks per year" limits for conductivity and chlorides were 0 hours and 41 hours respectively. No unacceptable conditions were identified.

(2) Determination of Dose Equivalent Microcuries/Gram I-131 in the Primary Coolant

Surveillance Test 7.2.1.A was reviewed. The licensee analyzes the following nuclides: I-131, I-132, I-133, I-134, and I-135 and computes dose equivalent I-131--that amount of I-131 which alone would produce the same dose as the quantity and isotopic mixture actually present. The Technical Specification limit is 2.0 microcuries per gram. Increased sampling frequency is required if any analysis exceeds 0.02 microcuries per gram. The representative sample for Unit 2, analyzed on August 13, 1980, indicated a dose equivalent I-131 concentration of 1.35×10^{-4} microcuries per gram. At Unit 3, a sample on August 14, 1980 indicated a dose

equivalent of 2.4×10^{-3} microcuries per gram. The inspector also confirmed that the required surveillance frequency was being satisfied. No unacceptable conditions were identified.

4. IE Bulletin Followup

Inspection was performed for the following IE Bulletin to verify that the Bulletin was received by site and corporate management and to confirm that the licensee was complying with Bulletin requirements.

IE Bulletin 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR"

a. Scram Testing

Bulletin 80-17 required each licensee to conduct two scram tests per unit to obtain detailed information on the control rod drive system, scram discharge volume, associated air system, and vent and drain performance. These tests were required to be complete by July 28, 1980 or upon reactor startup if conducted after that date. Peach Bottom Unit 3 was granted a delay in testing to August 9, 1980 by NRC:NRR letter on July 25, 1980, based on a critical power need in the Pennsylvania-New Jersey-Maryland electrical power pool. Scram testing for Unit 3 was conducted on August 8 and 9, and on August 13 and 14 for Unit 2, using procedure 393, "Scram Test for Bulletin 80-17", Revision 0, dated August 5, 1980.

The inspector reviewed the procedure prior to scram testing to determine if all data required to be obtained by the bulletin was included and for technical adequacy. The inspector witnessed the manual scram on Unit 3 and automatic scram on Unit 2. the inspector noted that each scram results in a small release of airborne activity into the Reactor Building 135 foot elevation via positive vent paths required to be provided by Supplement 2 to this bulletin. The radiological aspects of the positive vents are under licensee and NRC review and are considered unresolved pending completion of reviews and any resulting modifications (277/80-28-02 and 278/80-20-01). The inspector reviewed data provided from each of the four scram tests to determine if all data required had been provided and if any technical problems were discovered during the testing. The inspector noted that licensee review of full core display photographs indicated a delay of about 10 seconds prior to insertion of one control rod. Licensee investigation determined that the scram pilot solenoid valves had malfunctioned. These two valves were repaired and functionally tested on August 18, 1980. The inspector identified no unacceptable conditions.

In reviewing licensee responses dated August 14, and August 21, 1980, which forwarded the scram test data, the inspector noted that the

licensee, upon completion of all IE Bulletin requirements (excluding supplements), considered the special prompt reporting requirements of paragraph 6.a, of the bulletin no longer applicable. The inspector determined that the NRC staff intended for the reporting requirements to remain in effect during the period of staff evaluation of licensee data. During conversations on August 20 and 22 with the inspector, the Station Superintendent agreed to continue to comply with paragraph 6.a of the bulletin.

b. Review of Emergency Operating Procedures

References:

(1) Procedure GP-4, "Scram without Group I isolation", Revision 15, dated August 5, 1980.

(2) Procedure GP-6, "Scram with Group I isolation, Revision 17, dated August 5, 1980.

(3) Procedure 5.3.6.B, "Initiation of the Standby Liquid Control System", Revision 4, dated July 28, 1980.

The inspector reviewed the referenced procedures to ensure that the scram procedures required changing the position of the mode selector switch to shutdown and that additional operator action was required in the event that control rods were in an abnormal configuration following a scram. These additional actions included tripping the recirculation pumps, individually scramming all affected control rods, and considering, based on reactor conditions, initiation of the Standby Liquid Control System. The inspector discussed the procedural changes with station management and licensed Reactor Operators to ensure that the intent of the bulletin requirements were understood. The inspector identified no unacceptable conditions.

c. Verification of In-Plant Piping Arrangements

The inspector traced the scram discharge volume piping inplant to verify that as built drawings were accurate with regard to principal features, that no inadvertent loop seals exist, and that there were no obvious configuration problems associated with the scram discharge vent and drain piping. The inspector independently verified that the scram discharge volume drain pipe was inclined, using a tape measure and level. No unacceptable conditions were identified.

d. Potential Degradation of Scram Discharge Volume Through Air System Failures

The inspector reviewed the licensee's on IE Bulletin 80-17, Supplement 3, promulgated August 22, 1980. This supplement addressed a potential control rod drive control air system single failure which could potentially degrade scram discharge volume operability. Licensees were directed to implement procedures by August 27, 1980 to require an immediate manual scram upon certain indications that this type of failure may be occurring. Additionally, the licensee was to implement procedures to require a functional test of the scram discharge volume level switches after each scram event, prior to returning to power. On August 28, 1980 the inspector reviewed the following procedures to verify proper implementation of the Bulletin Supplement requirements:

(1) OT-13, "Impending Loss of Ability to Scram", Revision 0, dated August 27, 1980.

(2) C.O.C. GP-2A, "Reactor Start-Up Order", Revision 32, dated August 27, 1980.

(3) ST 2.4.11 (A/C/F), A/C Functional Test of LS 2-3-231, A/C/F, Revision 6, dated August 27, 1980, (typical of four pertinent surveillance test procedures).

The inspector further verified that the procedures were available to, and understood by, operating shift personnel. Adherence to the licensee's provisions in OT-13 for investigation of "CRD Hydraulic High Temperature", alarms was confirmed at Unit 3. The inspector noted that, at Unit 2, the CRD temperature recorder was out of service and that troubleshooting was in progress. The inspector reviewed the licensee's response dated August 29, 1980 and verified that it accurately reflected the licensee's actions relative to this bulletin supplement. No unacceptable conditions were identified.

5. Non-Routine Event Review

a. Review of Event

The inspector reviewed the following non-routine event on site and in office for safety significance circumstances and relationship to Technical Specifications protective limits. The licensee's PORC review evaluation and corrective action was also verified.

LER Number	Title
2-80-14/94T	Environmental Deviation--Oil sheen of the Conowingo Pond

Because of an incorrectly reading level gauge a diesel oil tank was overfilled--a small amount of oil reached Conowingo Pond via the licensee's drain system and discharge canal. The licensee informed the Environmental Protection Agency and the NRC. The inspector verified the licensee's reported corrective actions, which included recalibrating the level gauge and recovering oil which had been spilled but had not yet reached the Conowingo Pond, and also determined that the report had been submitted within the required time frame. The inspector had no further questions in this matter.

b. Preliminary Report Review

The inspector screened reports received for safety significance and conformance to Technical Specification reporting requirements.

Technical Specification 6.9.2.b states that reactor protective system or engineered safety feature instrument settings which are less conservative than those established by the Technical Specifications shall be the subject of written reports to the Director of the Regional Office within thirty days. The inspector noted that LER number 3-80-11/3L, which reported a shutdown cooling isolation pressure switch setpoint out of the Technical Specification allowable range discovered on May 16, 1980, was not received in the NRC Regional Office until August 14, 1980. LER number 3-8012/3L, detailing pressure switch setpoint out of the required range for reactor protective system input on turbine control valve fast closure, discovered on May 20, 1980, was also not received by the NRC until August 14, 1980. The inspector noted that, in each case. setpoints had been immediately adjusted properly. These two examples of failure to submit reports within the Technical Specification required time frame constitute an item of noncompliance. (278/80-20-02).

Upon notification of this item, the licensee took steps to correct the conditions that allowed the late submittal to occur and steps to prevent recurrence. The licensee's investigation indicated a problem in communications between the site and the corporate office. The inspector reviewed a memorandum from the engineer-in-charge, Nuclear Section, Generation Division (Nuclear) to the Station Superintendent, dated August 26, 1980 which established a periodic telephone review of LER status by appropriate site and corporate personnel. The inspector

verified, through discussions with personnel involved, that these contacts were taking place and being documented. The inspector had no further questions regarding the licensee's corrective action in this matter.

6. Radiation Protection

During this report period, the inspector examined work in progress in accessible areas of the Unit 2 and Unit 3 facilities. Areas examined included:

a. Health Physics (HP) controls

b. Badging

c. Usage of protective clothing

d. Personnel adherence to RWP requirements

e. Surveys

f. Handling of potentially contaminated equipment and materials

Additionally, inspections were conducted of usage of friskers and portal monitors by personnel exiting various RWP areas, the power block, and the licensee's final exit point. More than 60 people observed met frisking requirements during the month. A sampling of high radiation doors was verified to be locked as required. During a tour of the protected area at 11:00 AM on August 25, 1980, the inspector examined barrels of Low Specific Activity radioactive waste stored near the torus drain tank enclosure. One of the barrels was lying on its side and had a small (about 1½" by 2") gash located so that it was pointing up. There was no evidence of any leakage from or around the hole. Upon notification, the licensee surveyed the barrel and surrounding areas and found no indication of spread of contamination. The licensee was unable to determine how the barrel, which contained oily waste solidified in concrete and which was packaged in November 1979, had become damaged. The licensee moved the barrel to an indoor storage area and indicated that the barrel would be repackaged prior to shipment for disposal. This matter is unresolved pending inspector review of the licensee's final disposition of the damaged waste container and contents (277/80-28-03 and 278/80-20-03). Controls on solid radioactive waste will be routinely examined by the resident inspectors.

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NOT FOR PUBLIC DISCLOSURE, IS INTENTIONALLY LEFT BLANK.

8. In-Office Review of Monthly and Special Reports

The following licensee reports have been reviewed in-office.

a. Peach Bottom Atomic Power Station Monthly Report for: July 1980, dated August 13, 1980.

This report was reviewed pursuant to Technical Specifications and verified to determine that operating statistics had been accurately reported and that narrative summaries of the month's operating experience were contained therein. No unacceptable conditions were identified.

b. Thermal Mapping Report No. 80-1, covering the isotherm survey for June 25, 1980 and Report No. 80-2 covering the isotherm surveys for July 1, 1980 and July 11, 1980.

Environmental Technical Specifications require that, when less than three cooling towers are in operation and the flow of the Susquehanna River through the Conowingo Pond as calculated daily is less than 15,000 cubic feet per second, thermal plume mapping shall be performed at least one per week and the results submitted to the NRC. The inspector reviewed the above reports, transmitted to NRC:NRR on August 14, 1980, and verified that the required data had been gathered and submitted to NRR. the inspector noted that the Environmental Technical Specifications require submittal of thermal mapping results to the NRC within 30 days; the licensee's submittal of June 25, July 1, and July 11, data was dated August 14, 1980. This example of failure to submit reports within the required time frame is an item of noncomliance (80-28-06 and 80-20-06).

Upon notification of this item by the inspector, the licensee took steps to correct the condition that allowed the late submittal to occur, so as to prevent recurrence. These included providing for periodic contacts between site and corporate office personnel to relay information regarding river flow and cooling tower operation. Additionally, one individual was to be assigned responsibility for following and coordinating the various group efforts necessary to prepare each report. The inspector reviewed a memorandum from the Engineer-In-Charge, Nuclear Section, Generation Division (Nuclear) to the Station Superintendent dated August 26, 1980 and held discussions with site and corporate technical personnel to verify licensee corrective action. The inspector had no further questions regarding the licensee's corrective action for this item of noncompliance.

9. Unresolved Items

Unresolved items are items about which more information is required to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items are discussed in Details 4 and 6.

10. Management Meetings--Preliminary Inspection Findings

A summary of preliminary findings was provided to the Station Superintendent at the conclusion of the inspection. During the period of this inspection, licensee management was periodicallly notified of the preliminary findings by the resident inspectors. The dates involved, the senior licensee representative contacted, and subjects discussed were as follows:

Date	Subject	Senior Licensee Representative Present
August 6	Drywell Cleanliness (Details 3)	Engineer-Maintenance
August 14	Control of Designated Vehicles (Details 7)	Security Supervisor
August 22	Late Submittal of LER's and Thermal Mapping (Details 5 and 8)	Station Superintendent
August 25	Solid Radioactive Waste Storage (Details 6)	Radiation Protection Manager