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U.S. NUCLEAR REGULATORY COMMISSION

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Report No. 50-277/82-16
50-278/82-16

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Docket No. 50-277
50-278

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License No. DPR-44 Priority _____ Category c
DPR-56 _____

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania

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

Inspection at: Delta, Pennsylvania

Inspection conducted: October 21 - November 30, 1982

Inspectors: *AR Blough* 12/2/82
A. R. Blough, Senior Resident Inspector date signed

_____ date signed

_____ date signed

Approved by: *E. C. McCabe* 12/3/82
E. C. McCabe, Jr., Chief, Reactor date signed
Projects Section No. 2B, DPRP

Inspection Summary:
October 21 - November 30, 1982 (Combined Inspection Report 50-277/82-16 and 50-278/82-16)

Routine, on-site regular and backshift resident inspection (81 hours Unit 2; 73 hours Unit 3) of: accessible portions of Unit 2 and Unit 3, operational safety, radiation protection, physical security, control room activities, licensee events, IE Bulletin followup, surveillance testing, maintenance, potentially generic issues, fire protection, periodic and special reports, and outstanding items.

Results: Violations: One (failure to meet Technical Specification fire watch requirements, Detail 3).

DETAILS

1. Persons Contacted

W. H. Alden, Engineer-in-Charge, Nuclear Section
J. K. Davenport, Maintenance Engineer
G. F. Dawson, I&C Engineer
*R. S. Fleischmann, Assistant Station Superintendent
N. Gazda, Health Physics
D. Helker, Test Engineer
A. Hilsmeier, Senior Health Physicist
J. Mitman, Results Engineer
F. W. Polaski, Reactor Engineer
S. R. Roberts, Operations Engineer
D. C. Smith, Outage Manager
S. A. Spitko, Site Q. A. Engineer
S. Q. Tharpe, Security Supervisor
*W. T. Ullrich, Station Superintendent
A. J. Wasong, Test Engineer
H. L. Watson, Chemistry Supervisor
J. E. Winzenried, Technical Engineer

Other licensee employees were also contacted.

*Present at exit interviews on site and for summation of preliminary inspection findings.

2. Previous Inspection Item Update

(Closed) Violation (277/81-03-03), scram setpoint limiting safety system setting exceeded while MFLPD was greater than reactor power. Licensee procedures require average power range monitor (APRM) calibration whenever MFLPD is greater than fraction of rated power (FRP). The calibration ensures scram setpoints are within limits. The inspector verified that operators and reactor engineers were cognizant of these requirements and that APRM calibrations were performed when MFLPD exceeded FRP. The inspector had no further questions on this item.

(Closed) Violation (278/80-04-03), failure to note Technical Specification applicability on blocking permit. The inspector has reviewed several blocking permits in recent inspections. In each case, Technical Specification applicability was properly indicated.

(Closed) Violation (278/80-04-04), failure to follow blocking procedure. The inspector has independently verified several blocking permits in recent inspections; in each case, the blocking was as specified on the permit.

(Closed) Inspector Follow Item (277/82-09-05 and 278/82-09-03), include discussion of housekeeping during SALP. This issue was covered in detail in the written report and discussed at the meeting with licensee management.

(reference NRC:RI letter of October 26, 1982). Some improvement of in-plant housekeeping during non-outage conditions has been noted. This item is closed. NRC review of long-term corrective actions for unacceptable housekeeping conditions during outage remains open (reference Violations 277/82-09-03 and 277/82-09-04).

(Closed) Inspector Follow Item (277/80-32-05); and (Open) Inspector Follow Item (278/80-24-05), seismic and environmental qualification of safety-relief valve acoustic monitors. The inspector reviewed modification package 575 and discussed this item with licensee engineers. Seismic upgrading is completed at both units. Environmental test data indicated that a section of the sensor cable could fail under extended high ambient temperatures. Per IE Bulletin 79-01B the licensee submitted a Licensee Event Report (2-81-40/3L and 2-81-40/3X-1). Cable replacement was completed at Unit 2 during the Spring 1982 refueling outage and is scheduled at Unit 3 during the Spring 1983 refueling outage. This item is closed for Unit 2; the inspector will review the upgrading of environmental qualifications at Unit 3.

(Closed) Inspector Follow Item (277/81-20-01 and 278/81-22-01), review coverage of basic heat transfer and core damage mitigation in replacement operator training programs. The inspector reviewed course outlines for the recently completed and the current training classes and determined that the program description was satisfied. This inspector had no further questions.

(Open) Unresolved Item (277/81-20-04 and 278/81-22-05), discrepancies between various requalification program documents regarding simulator training for loss of instrument air. The licensee has removed loss of instrument air from his requalification program, since it cannot be simulated at the Limerick Training Center. However, the current program description, sent to NRC:NRR April 30, 1981, still includes loss of instrument air. Therefore, this item remains unresolved. The licensee stated that this issue would be clarified by letter. The inspector also verbally informed the cognizant NRC technical reviewer of the discrepancy.

(Closed) Inspector Follow Item (277/79-RN-04), review status of site Radiation Protection Manager. The licensee has designated a senior Health Physicist (Radiation Protection Manager), who reports directly to the Station Superintendent. A Technical Specification amendment request has been submitted and will be subject to licensing review. NRC:RI Facilities Radiation Protection Section review determined that the Senior Health Physicist's qualifications meet Technical Specification 6.3 and Regulatory Guide 1.8 (September 1975) requirements. The inspector had no further questions.

(Closed) Inspector Follow Item (277/81-19-01 and 278/81-20-01), clarification of Emergency Plan notification requirements and evaluation of cause of small fire in Rod Position Indicating System (RPIS) cabinet during 1981 refueling outage. The inspector verified that Emergency Plan procedures have been revised to specify use of the Emergency Notification System (ENS)

automatic ring-down circuit for the required NRC notifications. Regarding the RPIS fire, the licensee determined that it was caused by a shorted fuse holder, not by unidentified energized leads, as initially believed. The inspector had no further questions on this item.

(Closed) Unresolved Item (277/81-18-02) surveillance tests may not provide independent verification per TMI Action Plan item 1.C.6. Procedure A-41, Revision 2, August 31, 1982, now requires use of a "Double Verification of Return to Normal" sheet, unless the test itself provides independent sign-offs. Spot-checks by the inspector indicated that the double verification system is being used. This item is closed.

(Closed) Violation (277/81-19-06), failure to log temperatures throughout cooldown as required by Technical Specification surveillances. The inspector reviewed ST9.12, Revision 5, December 15, 1981, Reactor Vessel Temperatures, and verified that it had been changed to eliminate the ambiguity which caused the violation. The inspector also discussed the procedure with control room operators. No violations were identified.

(Closed) Unresolved Item (277/81-16-03 and 278/81-17-03), inconsistencies in emergency procedures EP-101, EP-102, and EP-205. The inspector verified that the procedures have been revised to eliminate the inconsistencies regarding classifying and responding to events. This item is closed.

(Open) Unresolved Item (277/80-32-06 and 278/80-24-06), PORC review and formal scheduling of inspections for reducing leakage outside containment. Nine leak inspection procedures, ST 12.15 (series), were approved January 8, 1981. These quarterly tests include all systems addressed in Technical Specification 6.14, Integrity of Systems Outside Containment, issued October 28, 1980. The inspector verified through review of the licensee's follow system that the tests are being completed as scheduled. In one case, results of an air sample in the Outboard MSIV room were lost and the test was re-scheduled. One test, an air test of the Standby Gas Treatment System (SGTS) was found to be not technically feasible and was removed from the program with NRC:NRR concurrence (reference licensee NRC:NRR letters dated April 23, 1981 and May 11, 1981, respectively). SGTS is not included in Technical Specification 6.14.

During review of this item, the inspector noted that the licensee's program uses visual inspections and therefore does not provide reliable means of detecting RHR heat exchanger tube leaks. Leakage within the heat exchanger would go to the High Pressure Service Water (HPSW) system and would not be visible. During this inspection period, the licensee began a program of periodic surveys of HPSW piping to detect contamination of the system. As of the end of the inspection, the procedure for these surveys was not finalized; further, effectiveness of this method of leak identification has not been determined. This item remains unresolved.

3. Plant Operations Review

3.1 Logs and Records

The inspector spot-checked logs and records for accuracy, completeness, abnormal conditions, significant operating changes and trends, required entries, operating and night order propriety, correct equipment and lock-out status, jumper log validity, conformance to Limiting Conditions for Operations, and proper reporting. The following logs and records were reviewed.

- (a) Shift Supervision Log, October 21 - November 30, 1982
- (b) Reactor Engineering Log, Unit 2 - October 21 - November 30, 1982
- (c) Reactor Engineering Log, Unit 3 - October 21 - November 30, 1982
- (d) Reactor Operators Log, Unit 2 - October 21 - November 30, 1982
- (e) Reactor Operators Log, Unit 3 - October 21 - November 30, 1982
- (f) CO Log Book - October 21 - November 30, 1982
- (g) STA Log Book - (Sampling) October 21 - November 30, 1982
- (h) Night Orders - Current Entries
- (i) Radiation Work Permits (RWP's) - Various in both Units 2 and 3, October - November 1982
- (j) Maintenance Request Forms (MRF's) - Units 2 and 3, (Sampling) October - November 1982
- (k) Ignition Source Control Checklists (Sampling) - October - November 1982
- (l) Operation Work & Information Data - October - November 1982

Control room logs were compared against Administrative Procedure A-7, "Shift Operations." Frequent initialing of entries by licensed operators, shift supervision, and licensee on-site management constituted evidence of licensee review.

No unacceptable conditions were identified.

3.2 Facility Tours

Daily tours and observations included the following:

- Control Room - (daily).
- Turbine Building - (all levels).

- Reactor Buildings - (accessible areas).
- Radwaste Building
- Diesel Generator Building
- Yard area perimeter exterior to the power block, including Emergency Cooling Tower and torus dewatering tank.
- Security Building, including CAS, Aux SAS, and control point monitoring.
- Lighting.
- Vehicular Control.
- The SAS and power block control points.
- Security Fencing.
- Portal Monitoring.
- Personnel and Badging.
- Control of Radiation and High Radiation areas, including locked door checks.
- TV monitoring capabilities.
- Shift turnover.

Off-Shift inspections during this inspection period and the areas examined were as follows:

<u>DATE</u>	<u>AREAS EXAMINED</u>
October 21	Control Room
October 24	Protected Area, Control Room, Unit 2 Reactor Building
October 28	Unit 2 Reactor Building
November 2	Unit 2 and Unit 3 Reactor Buildings
November 4	Review of Unplanned Release
November 9	Control Room, Cable Spreading Room, Unit 2 Reactor Building
November 18	Protected Area
November 22	Control Room

<u>DATE</u>	<u>AREAS EXAMINED</u>
November 24	Radwaste Building, Turbine Building
November 26	Control Room, Unit 2 and Unit 3 Reactor Buildings, Turbine Building, Radwaste Building
3.2.1	Control Room Manning. Staffing frequently was checked against 10 CFR 50.54(k), the Technical Specifications, and commitments to the NRR letter of July 31, 1980. Presence of a senior licensed operator in the control room complex was verified frequently. No unacceptable conditions were identified.
3.2.2	Fluid Leaks. The inspector observed sump status, alarms, and pump-out rates, and discussed leakage with licensee personnel. No violations were identified.
3.2.3	Piping Vibration. No significant or unusual piping vibration was identified.
3.2.4	Monitoring Instrumentation. The inspector frequently confirmed that selected instruments were operating and indicated values were within Technical Specification requirements. Daily, when the inspector was on site, ECCS switch positioning and valve lineups, based on control room indicators and plant observations were verified. Observations included flow setpoints, breaker positioning, PCIS status, radiation monitoring instruments, and containment parameters. No violations were identified.
3.2.5	Environmental Controls. The inspector observed visible portions of main stack and ventilation stack radiation recorders and periodically reviewed traces from backshift periods to verify that radioactive gas release rates were within limits and that unplanned releases had not occurred.
3.2.6	Fire Protection. On frequent occasions the inspector verified the licensee's measures for fire protection. The inspector observed control room indications of fire detection and fire suppression systems, spot-checked for proper use of fire watches and ignition source controls, checked a sampling of fire barriers for integrity, and observed fire-fighting equipment stations.

About 3:45 p.m. the inspector toured the Diesel Building and noted that the Diesel Generator Building Carbon Dioxide (Cardox) Fire Suppression System storage tank low pressure alarm was annunciating. When informed, the licensee checked tank pressure, found it to be 260 psig (Technical Specification minimum is 280 psig), and promptly posted a fire watch.

The tank had been emptied about 8:15 a.m. for repair of a leaking threaded connection. A fire watch had been posted per Technical Specifications. By 9:45 a.m. repairs were completed, the tank was refilled, and the fire watch was terminated. The low pressure had existed since the tank was refilled, but tank pressure had not been considered when securing the fire watch. Technical Specification 3.14.B, CO2 Fire Protection System, requires a continuous fire watch in the Diesel Generator area unless its Cardox tank has at least 2200 pounds of carbon dioxide at a minimum pressure of 280 psig. Failure to have a fire watch with low cardox tank pressure is a Violation (277/82-16-01 and 278/82-16-01).

The licensee submitted a prompt Licensee Event Report for this event (LER 2-82-35/1P and 1T). The report indicated that pressure in the tank during this event was sufficient to properly actuate the system if needed. The licensee told the inspector that minimum actual tank pressure had been 245 psig and that verbally-supplied vendor data indicated that over 2200 pounds of carbon dioxide could have been delivered. The licensee has requested more detailed information from the vendor; this item will be re-inspected (277/82-16-02).

On November 19, the licensee questioned an above-scale reading on the Unit 2 Cardox tank level indicator. While investigating the level indication, the licensee posted fire watches for those areas served by that Cardox system (HPCI, Cable Spreading Room, Computer Room). The licensee later determined that the tank was, in fact, full. Had tank level been low, implementation of procedure A12.1 would have been required to control the Technical Specification fire watch. The inspector noted that, in this case, procedure A12.1 apparently was not used and the actions taken were inconsistent with the procedure in several respects. For example, no fire watch instructions were issued, one fire watch was not continuous and was assigned other duties, and the Computer Room (within the Cable Spreading Room) was locked (preventing valid fire checks). The inspector stated that, although no enforcement issue is involved, the event indicates weaknesses in facility training regarding fire watch requirements. Fire watch implementation will continue to be routinely inspected during resident inspections.

- 3.2.7 Housekeeping. The inspector assessed housekeeping conditions during routine tours. The inspector noted some improvement in housekeeping and cleanliness, including a reduction in loose trash, combustibles and dirt. However, presence of other debris, including tools, pieces of metal, and test gauges, indicated a lack of worker attention to housekeeping details. Also, several examples of missing fasteners or incomplete closure of instrument and terminal boxes were noted. A list of these discrepancies was provided to the licensee. No specific unacceptable conditions were identified. Housekeeping will continue to be assessed during each resident inspection.

- 3.2.8 **Equipment Conditions.** The inspector verified operability of selected safety equipment by in-plant checks of valve positioning, control of locked valves, power supply availability and breaker positioning. Selected major components were visually inspected for leakage, proper lubrication, cooling water supply, operating air supply, and general conditions. Systems checked included Unit 3 RHR 'A' and 'C', and Unit 3 Core Spray 'D'. Selected Emergency Service Water System valves and safety instrument root valves were also checked.

The inspector reviewed selected blocking permits (tagouts) for conformance to licensee procedures. Breaker, switch and valve positioning was verified. Included were:

<u>Permit No.</u>	<u>Equipment</u>	<u>Date Checked</u>
2-16-C2-29	Unit 2 ADS Backup Air Supply Bottle 'A'	November 1
3-14-M2-23	Core Spray Loop 'A'	November 23 (Sampling)
2-81-58	Ventilation Dampers	November 26

No violations were identified.

3.3 Follow-up on Events Occurring During the Inspection

- 3.3.1 Safety Relief Valve Failure During Startup. About 3:07 p.m., October 24, with the unit at low power (about 1 percent) and 832 psig during startup after a maintenance shutdown, a three-stage safety-relief valve (SRV) opened. System swell caused a feed pump trip on high reactor water level followed by a low water level scram at 3:11 p.m. Operators declared an Unusual Event, manually initiated HPCI to control reactor water level, initiated torus cooling and notified the NRC Operations Center. The relief valve position indicator (acoustic sensor) recorded frequent cycling of the valve (about 370 cycles). The SRV did not remain shut until 3:50 p.m., at 80 psig. No releases of radioactivity to the environment occurred. The Unusual Event was declared over at 5:40 p.m., and the reactor was placed in Cold Shutdown for replacement of the valve.

On October 24, the inspector reviewed this event on-site by interviewing operators, observing plant conditions and chart recorders, and reviewing logs and computer printouts. On October 25, the inspector observed portions of the SRV replacement and discussed with licensee engineers their corrective actions and analysis for the event:

- The entire SRV was replaced. It will be sent to its vendor for analysis. Comprehensive overhaul and testing of the valve prior to its reuse is planned (per IE Bulletin 80-25).
- The acoustic sensor was replaced and sent for analysis. Visual signs of damage indicate that an intermittent sensor output may have caused the indication of frequent valve cycling.
- SRV discharge pipe supports and snubbers in the drywell and torus were inspected. No damage was noted. A computer-assisted engineering analysis indicated that the piping was not overstressed in this event.
- The vacuum breakers on the discharge lines of SRV 71J and a second valve which had been operated manually during the transient were inspected. Both valves showed hinge pin binding and were replaced.

The licensee submitted a licensee event report (LER) on this item per a TMI Lessons Learned commitment. The inspector verified its accuracy. The LER concluded that the valve had opened only once and remained open until 80 psig. The inspector discussed this with a licensee engineer and reviewed supporting data, including chart recorder traces. The absence of repeated reactor water level transients supports the conclusion that the valve did not cycle repeatedly. The inspector will also review results of analyses of the failed relief valve, the acoustic sensor, and the damaged vacuum breakers (277/82-16-03).

- 3.3.2 Unplanned Release of Liquid Radioactivity--Unit 3. On November 4, 1982, the licensee determined that an unplanned, unmonitored release of radioactive liquid had occurred from October 25 to November 2. The release was caused by leakage in the 3D RHR Heat Exchange in conjunction with a faulty check valve at the 3D High Pressure Service Water (HPSW) pump discharge. The valve apparently did not fully close after system testing October 25. Normally radioactive water in the RHR system leaked at about 5 gallons per minute (gpm) into the Unit 3 intake structure via the HPSW system. From there it was diluted by about 23,000 gpm service water flow and 1E6 gpm circulating water flow prior to release to the environment. Activity of the water was about $9.1E-5$ microcuries per milliliter undiluted (measured), which would have been undetectable after dilution. The licensee estimated that 22.8 millicuries was released from October 25 to November 2.

The leak was discovered through investigation of a slowly increasing reading on a radiation monitor for RBCCW piping near the HPSW piping. This investigation led to isolating the 3D RHR Heat Exchanger, stopping the release, on November 2.

The inspector discussed this event with licensee engineers and reviewed system prints, sample results and release calculations. Pursuant to this review, licensee actions in response to IE Bulletin 80-10 were also checked (see Detail 6).

The licensee's investigation could not determine if the heat exchanger leak existed before October 25. If it had, radioactive water may have been released via HPSW discharge piping.

The licensee repaired the heat exchanger November 14-21. A cracked expansion bellows on a tube-side drain line was found and replaced.

The licensee has committed to routine radiation surveys to provide early indication of future similar problems. The inspector will review these surveys in conjunction with the licensee's program for Integrity of Systems Outside Containment (see Detail 2, Item 277/80-32-06 and 278/82-24-06).

The licensee has also committed to an engineering review to determine if additional detection equipment is appropriate. In a future inspection, the inspector will check this engineering review and will review the licensee's analysis of whether the leak began before October 25 (278/82-16-02). Because the licensee identified, reported and corrected this unplanned release and is implementing measures to prevent recurrence, no Notice of Violation is issued.

4. Surveillance Testing

The inspector observed surveillance to verify that testing had been properly approved by shift supervision, control room operators were knowledgeable regarding testing in progress, approved procedures were being used, redundant systems or components were available for service as required, test instrumentation was calibrated, work was performed by qualified personnel, and test acceptance criteria were met. Parts of the following tests were observed:

- ST 2.5.28, Revision 1, December 25, 1981, Functional Check of the Seismic Monitoring System, performed November 4;
- ST 2.1.16A(C), Revision 2, April 8, 1976, Functional Test of PS2-2-134A(C), performed November 9 (Unit 2);

- ST1.5, Revision 10, September 23, 1982, Core Spray 'B' Logic System Functional, performed November 9 (Unit 2); and
- ST9.10, Revision 7, May 14, 1982, Containment Oxygen Measurement and Analyzing System Functional Test, performed November 26 (Unit 2).

No violations were identified.

5. Maintenance

For the following maintenance activities the inspector spot-checked administrative controls, reviewed documentation, and observed portions of the maintenance:

<u>Maintenance Request No.</u>	<u>Equipment</u>	<u>Date</u>
2-1-M2-448	Relief Valve 71J (replacement)	October 24, 1982
2-14-M2-23	Core Spray Loop 'A' (drain line repair)	November 17, 1982

~~For~~ The the following maintenance activities, the inspector spot-checked administrative controls, reviewed documentation, and interviewed cognizant engineers and supervisors:

<u>Maintenance Request No.</u>	<u>Equipment</u>	<u>Date</u>
3-10-M2-49	Rigging Equipment for RHR Repairs	November 8, 1982
3-10-M2-51	3D RHR Heat Ex- changer (leak repair)	November 9, 1982
3-10-M2-10	3D RHR Heat Ex- changer (gasket leak repair)	March 16, 1982

Administrative controls check included maintenance requests, blocking permits, fire watches and ignition source controls, and shift turnover information. Documents reviewed included procedures, material certifications and receipt inspections, welder qualifications and weld information data sheets.

No violations were identified.

6. Review of Licensee Event Reports (LERs)6.1 In-Office Review

The inspector reviewed LER's submitted to NRC:RI to verify that the details were clearly reported, including the accuracy of the description and corrective action adequacy. The inspector determined whether further information was required, whether generic implications were indicated, and whether the event warranted onsite followup. The following LER's were reviewed:

<u>LER No./</u> <u>LER Date</u> <u>Event Date</u>	<u>Subject</u>
*2-81-40/3X-1 February 10, 1982 September 23, 1981	Environmental qualification of safety-relief valve position indicator cabling.
2-82-17/3L September 24, 1982 August 25, 1982	'E-1' Diesel Generator overspeed switch shorted due to a valve packing leak; switch was replaced and valve repaired. Remaining diesels were operable.
2-82-23/3L September 8, 1982 August 26, 1982	Grounded resistor found and replaced in RCIC governor. HPCI was operable.
2-82-28/3L September 27, 1982 September 9, 1982	Reactor low level interlock to Containment Spray setpoint drifted 6 per cent low and was recalibrated. Redundant instrument was operable.
2-82-31/3L September 30, 1982 August 31, 1982	'B' Switch gear room smoke detector failed calibration and was replaced.
2-82-33/3L October 25, 1982 October 8, 1982	Torus Room Smoke detector failed calibration and was replaced.
2-82-34/3L November 12, 1982 October 13, 1982	Two ventilation duct fire dampers failed for unrelated reasons during testing; after repairs, all similar dampers were inspected for similar problems.
*2-82-35/1P and 1T November 4, 1982 (1T) October 22, 1982 (1P) October 21, 1982	Diesel Building Carbon Dioxide Tank pressure below Technical Specification minimum.

LER No./ LER Date Event Date	Subject
*2-82-36/1P & 1T November 5, 1982 (1T) October 28, 1982 (1P) October 24, 1982	Safety relief valve failed; plant was shut down and valve replaced.
2-82-37/3L November 10, 1982 October 12, 1982	Smoke detector failed due to loose connection, fire watch was posted during repair.
3-82-16/3L September 30, 1982 August 31, 1982	RCIC steam supply valve indication fuse blew due to grounded relay. Valve was shut during repairs; HPCI was operable.
3-82-18/3L October 22, 1982 September 24, 1982	Workers knocked a torus level instrument out of calibration; redundant equipment was operable. The instrument was recalibrated; the entire work group, including the foreman, was counseled.
3-82-19/3L October 28, 1982 September 28, 1982	Small (1.5 inch square) hole found in fire barrier during inspection; fire watch was posted during repairs.
3-82-20/3L October 25, 1982 October 6, 1982	HPCI Cardox failed to actuate during testing. Fire watch was posted and timer motor seal-in cam was adjusted.
*3-82-21/1P & 1T November 5, 1982 (1P) November 15, 1982 (1T) November 1, 1982	3A Reactor Building vent stack radiation monitor was insensitive. The 3B monitor was operable at this time; however, it had been out of service for repairs prior to the discovery. The 3A monitor was repaired.
*3-82-22/1P & 1T November 5, 1982 (1P) November 19, 1982 (1T) November 4, 1982	Unplanned release of liquid radioactivity due to RHR heat exchanger leakage.

*Selected for on-site followup

6.2 Onsite Followup

For LER's selected for onsite review (denoted by asterisks above), the inspector verified that appropriate corrective action was taken or responsibility assigned and that continued operation of the facility was conducted in accordance with Technical Specifications and did not constitute an unreviewed safety question as defined in 10 CFR 50.59. Report accuracy, compliance with current reporting requirements and applicability to other site systems and components were also reviewed.

6.2.1 LER2-82-36/1P. See Detail 3.3.1.

6.2.2 LER 2-81-40/3X-1. See Detail 2, Item 277/80-32-05.

6.2.3 LER 2-82-35/1P and 1T. See Detail 3.2.6

6.2.4 LER 3-82-22/1P and 1T. See Detail 3.3.2

6.2.5 LER 3-82-21/1P and 1T. About 9:00 a.m., November 1, 1982, the 3B Reactor Building vent stack radiation monitor was removed from service to repair its detector. The 3A monitor was operable at that time. Following completion of repair and calibration of the 3B monitor, both monitors were source checked about 9:00 p.m.--the 3A monitor was then found to have reduced sensitivity. Investigation revealed that the 3A channel voltage plateau had drifted. The channel was realigned and proven operable at 4:00 p.m., November 2.

The inspector discussed this event with licensee engineers and technicians, and reviewed plant logs and recorders for November 1. There was no indication of any unplanned releases during this period. The licensee calculated a release rate of less than 0.1 per cent of the Technical Specification limit. The inspector reviewed 3A vent stack monitor chart recorder readings for November 1. It read essentially background, and the sensitivity change was not discernible on the chart. The inspector noted that the vent stack monitor provides indication and alarm, but no trip functions. Had a release occurred, the 3A monitor would have responded, but the reading would not have been accurate. The inspector calculated, however, that both the "High" and the "High-High" alarms would have been received prior to reaching the Technical Specification release rate limit. The licensee determined that the voltage drift was caused by random equipment failure. Prior to removal of one of this type of monitors from service, the redundant monitor is routinely source checked. The inspector had no further questions at this time.

7. IE Bulletin Followup--IE Bulletin 80-10, Contamination of Non-Radioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to the Environment

This bulletin described an event where an auxiliary boiler at another facility was operated extensively with contaminated water. A tube leak resulted in an unplanned release. The inspector reviewed the licensee's responses to this bulletin, discussed the issues with licensee engineers and reviewed the licensee's procedures to verify that the licensee was meeting bulletin requirements. The bulletin required licensees to do the following:

- (1) Review facility design and operation to identify normally non-radioactive systems that could become radioactive through interfaces with radioactive systems;
- (2) Establish a routine sampling or monitoring program to promptly identify contaminating events that could lead to releases;
- (3) If a normally non-radioactive system becomes contaminated, either restrict its use or perform a safety evaluation to support continued operation of the system; and
- (4) If a normally non-radioactive system is operated while contaminated, take measures to monitor potential release points and to maintain releases as low as is reasonably achievable.

The licensee facility review is documented in his response dated July 2, 1980. Twenty-three interfaces of concern were identified. The inspector identified no inadequacies in this initial review. The July 2, 1980 response also addressed resolution of concerns regarding potential contamination. Actions included use of installed monitoring systems, implementation of a routine sampling program, and leaving certain spool pieces disconnected. The monitoring and sampling program was to be in-place by August 15, 1980. The inspector verified this through review of the following surveillances:

- ST 7.5.5, Revision 7, September 23, 1982, Determination of Radioactivity by Isotopic Analysis in Non-radioactive Systems, completed November 8, 1982;
- ST 7.5.5a, Revision 0, September 2, 1980, Determination of Radioactivity by Isotopic Analysis in Non-radioactive Air Systems, completed September 27, 1982; and
- ST 7.5.5b, Revision 0, October 7, 1981, Determination of Radioactivity by Isotopic Analysis in Unmonitored Liquid Effluents, completed June 17, 1982.

Regarding the sampling program, additional sampling was to be implemented following proposed modifications, which included addition of 17 sample taps. By letter January 29, 1982, the licensee deleted 16 of the taps, providing

either an alternate sampling method or justification for not sampling. Regarding the January 29 letter and the licensee's overall bulletin response, the inspector identified areas where additional commitments or reviews were needed. These were discussed with the licensee, who made the following commitments:

- a. The High Pressure Service Water Sampling System will be implemented at each unit by August 1, 1983. (This modification was planned several years ago but has had various delays.)
- b. The separate compressed air system to support radwaste systems will be implemented by May 1, 1983. Much of the work on this modification is done.
- c. The sample tap for Unit 2 Instrument Air will be installed during the next Unit 2 outage of four or more days expected duration requiring drywell entry.
- d. Alternate methods (in lieu of installing sample taps) for sampling Service Water and Demineralized Water near Radwaste System interfaces will be incorporated into the sample program by February 1, 1983. (Service Water and Demineralized Water are currently sampled, but not near the interfaces with Radwaste.)

The above commitments were made by the Assistant Station Superintendent to the inspector on November 30. Each relates to a line item of the licensee's July 2, 1980 response.

The licensee also agreed to review the following items and provide additional commitments or clarifications.

- The January 29, 1982 letter justified not sampling for a Recombiner Closed Cooling Water heat exchanger leak to Service Water, in part, by stating that two separate (cascading) leaks are needed in order to contaminate Service Water. Under current plant operating conditions, only one leak is actually required.
- The licensee has not committed to items (3) and (4) of the bulletin. He stated that he agreed with the items, but needed time to formulate a detailed commitment.

The above items will be reviewed in the next resident inspection (277/82-16-04). This bulletin remains open.

8. Radiation Protection

During this report period, the inspector examined work in progress in both units, including the following:

- a. Health Physics (HP) controls
- b. Badging
- c. Protective clothing use

- d. Adherence to RWP requirements
- e. Surveys
- f. Handling of potentially contaminated equipment and materials

More than 30 people observed frisking requirements of Health Physics procedures. A sampling of high radiation doors was verified to be locked as required. No violations were identified.

9. Radioactive Waste Shipment

On October 26, the inspector observed loading and surveying of radwaste shipment 289-82 and verified compliance with applicable licensee procedures: HPG/CO-71C, HPO/CO-71C (Appendix A), HPO/CO-71C C.O.L., and HPO/CO-17. No violations were identified.

10. Physical Security

The inspector spot-checked compliance with the accepted Security Plan and implementing procedures, including: operations of the CAS and SAS, over 25 spot-checks of vehicles onsite to verify proper control, observation of protected area access control and badging procedures on each shift, inspection of physical barriers, checks on control of vital area access and escort procedures. No violations were identified.

During this inspection, the site access of a security force member was suspended pending licensee investigation of alleged misconduct on duty. No breach of plant security has been identified thus far. This will be reviewed in a subsequent report (277/82-16-05).

11. Followup on Potentially Generic Items

11.1 Incorrect Safety Valve Setpoint

Improper safety valve setpoints were identified at an operating BWR. The steam relief setpoint at that plant was 1240 psig. However, some valves had been set at 1240 psig using nitrogen prior to installation, which caused the steam relief setpoint to be higher. The appropriate nitrogen setpoint would be 1150 psig.

The inspector reviewed this event for applicability to Peach Bottom, which uses larger capacity valves from the same vendor as the ones in this event. The inspector discussed the matter with licensee engineers, and reviewed valve test records. Records indicated that safety valves, as well as safety-relief valves, had been tested with steam. Further, the inspector verified that Technical Specification surveillance frequencies for valve replacement specification were being satisfied and that distribution of setpoints was proper. Documents reviewed included the following:

- ST 13.32, Revision 4, January 3, 1980, Safety and Relief Valve Replacement, completed July 16, 1981 (Unit 3) and May 25, 1982 (Unit 2);

- M1.6, Revision 4, July 24, 1979, Relief Valve Replacement, completed copies, 1981 (Unit 3) and 1982 (Unit 2);
- M1.1, Revision 1, December 12, 1978, Reactor Vessel Main Steam Safety Valve Replacement, completed copies, 1981 (Unit 3);
- Wyle Laboratories Certification Test Reports, Unit 2 and Unit 3 Safety Relief Valves; and
- Dresser Industries Valve Test Records, Unit 3 Safety Valves.

No violations were identified.

11.2 Degraded Grid Voltage Protection

Protection of safety-related equipment against adverse effects of degraded grid voltage is the subject of on-going correspondence and studies by NRC:NRR and the licensee. In a letter of April 15, 1982, the licensee stated that, to improve emergency bus transient voltage response, control logic would be modified such that cooling tower loads would be automatically shed when the unit auxiliary buses transfer to the startup transformers (off-site sources). Through review of Modification Package 599 and discussion with licensee engineers, the inspector determined that the modification was completed. Additional proposed modifications in this area are under NRR review. No violations were identified.

12. Review of Systematic Assessment of Licensee Performance (SALP)

The inspector reviewed the licensee's comments on the July 12, 1982 Peach Bottom Atomic Power Station SALP. These comments were docketed as Enclosure 4 to the SALP report, dated October 26, 1982.

Among the licensee's commitments, the following will be reviewed in a subsequent inspection.

- An advisory letter, emphasizing supervisory responsibility to maintain a high level of work performance, was sent by appropriate Vice Presidents to supervisors at Peach Bottom (277/82-16-06).
- The importance of notifying senior duty engineers of plant conditions and exceptions will be stressed in meetings with operations personnel (277/82-16-07).
- To improve first line supervision accountability for housekeeping and radiation protection associated with maintenance activities, a program of supervisory inspections and reports has been established (277/82-16-08).

The inspector has verified the following licensee statements:

- Special management meetings will be held to increase individual awareness of the importance of nuclear plant rules and procedures. The inspector verified that the meetings have been held and reviewed the agenda.
- An Action Plan has been developed to improve the Radiation Protection Program. The inspector reviewed the plan and verified that it is being periodically updated. Numerous open items for previous NRC inspections assure review of individual action items in the plan.

Within the scope of this review, no violations were identified.

13. In-Office Review of Periodic and Special Reports

13.1 Monthly Operating Report

Peach Bottom Atomic Power Station Monthly Operating Reports listed below were reviewed pursuant to Technical Specifications and verified to determine that operation statistics had been accurately reported and that narrative summaries of the month's operating experience were contained therein.

<u>Report</u>	<u>Date</u>
September 1982	October 15, 1982
September 1982 errata	October 29, 1982
October 1982	November 10, 1982

No violations were identified.

13.2 Thermal Mapping Reports

Isotherm surveys of the Conowingo Pond section of the Susquehanna River are required by Environmental Technical Specifications when river flow is less than 15,000 cubic feet per second and less than three cooling towers are operating. The inspector reviewed the following Thermal Mapping Report:

<u>Report No. & Date</u>	<u>Survey Date</u>
82-6/November 10	October 22, 1982

No violations were identified.

14. Management Meetings14.1 Preliminary Inspection Findings

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

<u>Date</u>	<u>Subject</u>	<u>Senior Licensee Representative Present</u>
October 22	Fire Watch Requirements	Station Superintendent
November 12	Routine Discussions	Assistant Station Superintendent
November 18	IEB 80-10 Routine Discussions	Station Superintendent
November 23	Routine Discussions	Station Superintendent
November 30	IEB 80-10	Assistant Station Superintendent
December 1	Summary of Preliminary Findings	Assistant Station Superintendent

14.2 Attendance at Management Meetings Conducted by Region-Based Inspectors

The resident inspector attended entrance and exit interviews by region-based inspectors as follows:

<u>Date</u>	<u>Subject</u>	<u>Inspection Report No.</u>	<u>Reporting Inspector</u>
October 22 (Exit)	Security	277/82-22 278/82-21	Dunlap
November 17 (Entrance)	TMI Action Plan Items	277/82-23 278/82-22	Haverkamp
November 18 (Exit)	TMI Action Plan Items	277/82-23 278/82-22	Haverkamp