

U.S. NUCLEAR REGULATORY COMMISSION

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Region I

Report No. 50-277/83-02
50-278/83-02

Docket No. 50-277
50-278
DPR-44

License No. DPR-56 Priority _____ Category c
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Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station

Inspection at: Delta, Pennsylvania

Inspection conducted: January 11 - February 24, 1983

Inspectors: AR Blough 2/28/83
A. R. Blough, Sr. Resident Inspector date signed

_____ date signed

Approved by: E.C. McCabe, Jr. 3/7/83
Ebe C. McCabe, Jr., Chief date signed
Reactor Projects Section 2

Inspection Summary:
January 11 - February 24, 1983 (Combined Inspection Report 50-277/83-02 and 50-278/83-02)

Routine, on-site regular and backshift resident inspection (78 hours Unit 2; 87 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, requalification training, TMI Action Plan items, design control, fire protection, periodic reports, and outstanding items.

Results: Violations: Two (Inadequate design control of CAD reference gas supply, Detail 11; and failure to keep fire doors closed, Detail 12).

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DETAILS

1. Persons Contacted

J. K. Davenport, Maintenance Engineer
G. F. Dawson, I&C Engineer
*R. S. Fleischmann, Station Superintendent
A. Fulvio, Assistant Maintenance Engineer
N. Gazda, Health Physics Field Operations Engineer
A. Hilsmeier, Senior Health Physicist
W. McFarland, Engineer, Construction Division
J. Mitman, Results Engineer
F. W. Polaski, Reactor Engineer
S. R. Roberts, Operations Engineer
D. C. Smith, Assistant Station Superintendent
S. A. Spitko, Site Q. A. Engineer
S. Q. Tharpe, Security Supervisor
*W. T. Ullrich, Superintendent, Nuclear Services
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) Unresolved Item (277/80-05-03 and 278/80-05-03), licensee procedures and BWR Owners Group Guidelines differ regarding flooding of steam lines. Owners Group Guidelines have been changed to allow flooding with main steam isolation valves closed, which agrees with licensee procedures. This item is closed.

(Closed) Violation (277/82-06-02, 278/82-06-03), failure to maintain valves locked as required by procedure A-8. Licensee short-term corrective actions included checking all similar valves and providing additional guidance to shift personnel. The licensee determined that the valves, Emergency Service Water to the 'C' Diesel, had been unlocked during blocking (i.e., a tagout) and had not been re-locked when the block was cleared. The licensee committed to revising all blocking sequences to include provisions for re-locking. The inspector reviewed a sampling of blocking sequences involving locked valves and verified they had been revised accordingly. The inspector reviewed a sampling of blocking sequences that had not been recently revised and verified they did not involve locked valves. The licensee stated that many additional blocking sequences are being developed in a program to upgrade blocking procedures. The inspector checked a sampling of new sequences and verified that locked valves were properly addressed. The inspector had no further questions.

(Closed) Violation (277/82-21-02, 278/82-20-02), failure to have a valve locked as required by procedure A-8 (recurrent item). Short-term corrective actions, including a recheck of all locked valves, were verified in the original inspection. The licensee committed to the following items to prevent additional recurrence:

- Color-coding all locked valves (over 500) to highlight their significance, and
- revising the auxiliary operator training program to require individual performance of the locked valve check-off lists.

The color-coding is complete except for Unit 3 valves that are inaccessible due to high radiation during plant operation. The inspector checked a sampling of accessible valves and verified that the licensee is following up on the inaccessible ones. The inspector verified that all recently qualified auxiliary operators had performed locked valve check-off lists.

The inspector had no further questions regarding corrective actions for this violation. Additional licensee actions regarding locked valves are discussed in Enforcement Conference Report 277/83-03 and 278/83-03. These relate to previous inspection items that remain open; therefore, further NRC follow-up is assured.

(Closed) Violation (277/82-16-01 and 278/82-16-01), failure to have a firewatch when cardox tank pressure was low. The inspector reviewed a shift night order reminding shift personnel of the requirements in this area. A sampling of operators was interviewed and found to be cognizant of the requirements. During his review of this item, the licensee also noted that the tank low pressure alarm actuated slightly below the Technical Specification limit. The licensee initiated an appropriate change to the alarm and compressor operating setpoints. The inspector had no further questions.

(Closed) Inspector Follow Item (277/82-16-02), ability of diesel generator carbon dioxide system to operate at reduced pressure. The inspector discussed this item with licensee engineers and reviewed vendor computer calculations, licensee calculations and system startup test data. These indicated that NFPA code guidelines for carbon dioxide concentration (34 percent in one minute, 30 percent after three minutes) would be met at a tank pressure of 240 psig. The inspector had no further questions. Based on his analyses, the licensee is considering a Technical Specification change request in this area.

(Closed) Unresolved Items (277/81-20-04 and 278/81-22-05; 277/82-23-03 and 278/82-22-03), inconsistency between requalification program description and actual simulator training regarding loss of instrument air. A licensee letter of December 28, 1982, corrects this error. The inspector had no further questions. NRC licensing staff technical review of the licensee's submittals is ongoing.

(Closed) Unresolved Item (277/82-23-04 and 278/82-22-04), acceptability of licensee not having written procedure for loss of instrument air. The licensee's letter of December 28, 1982 stated that both current procedures and new symptomatic procedures under review address plant conditions resulting from loss of instrument air. The inspector also noted that the licensee has alarm procedures (annunciator cards) that address conditions leading to a loss of instrument air. The inspector had no further questions.

(Closed) Unresolved Item (277/82-23-02 and 278/82-22-02), plant manager receipt of training regarding mitigation of core damage (TMI Action Plan Item II.B.4). A licensee letter dated December 22, 1982, indicated that the plant manager had attended the initial training in 1980. Although he did not attend the follow-on training in 1981, he received equivalent training. The inspector verified this through discussion with the plant manager. Regarding TMI Action Plan Item II.B.4, the inspector noted that the licensee's December 22, 1982 letter commits to ongoing training, via the RO and SRO requalification program, in mitigating core damage. The inspector had no further questions.

3. Plant Operations Review

3.1 Facility Tours

Daily tours and observations included the Control Room, Turbine Building (all levels), Reactor Buildings (accessible areas), Radwaste Building, Diesel Generator Building, yard perimeter outside the power block, Security Building, 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, and shift turnover.

Off-Shift inspections were as follows:

<u>DATE</u>	<u>AREAS EXAMINED</u>
January 25	Control Room, Unit 2 Reactor Building, Turbine Building
January 26	Turbine Building
January 27	Unit 3 Reactor Building
February 17	Unit 3 Refuel Floor and Reactor Building
February 18	Protected Area, Control Room

3.1.1 Control Room staffing frequently was checked against 10 CFR 50.54(k), Technical Specifications, and the NRR letter of July 31, 1980. Presence of a senior licensed operator in the control room complex was verified frequently.

- 3.1.2 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 were verified on control room indicators and plant observations. Observations included flow setpoints, breaker positioning, PCIS status, radiation monitoring instruments, and containment parameters. Outside the control room, observations included Carbon Dioxide Tank levels and pressures, Diesel Generator fuel tank levels, Containment Atmosphere Dilution tank level, and selected Engineered Safety Feature actuation instrument readouts.
- 3.1.3 Off-Normal Alarms. Selected annunciators were discussed with control room operators and supervision to assure they were knowledgeable of plant conditions and that corrective action, if required, was being taken. The operators were knowledgeable of alarm status and plant conditions.
- 3.1.4 Fluid Leaks. The inspector observed sump status, alarms, and pump-out rates, and discussed leakage with licensee personnel.
- 3.1.5 No significant or unusual piping vibration was found.
- 3.1.6 Environmental Controls. The inspector observed main stack and ventilation stack radiation monitors and periodically reviewed recorder traces from backshift periods to verify that radioactive gas release rates were within limits and that unplanned releases had not occurred. The inspector reviewed licensee samples and administrative controls for the following planned liquid releases to verify that regulatory requirements were met:

<u>Radwaste No.</u>	<u>Source</u>	<u>Release Date</u>
74-83	'A' Waste Sample Tank	1/17/83
159-83	Floor Drain Sample Tank (FDST)	2/1/83
202-83	FDST	2/8/83
225-83	FDST	2/12/83
247-83	FDST	2/16/83

For release 74-83, an error had been made in calculating radiation monitor alarm settings. After the release, a supervisor had discovered the error, corrected the calculation, and counselled appropriate personnel. In this case, the error was not

significant because of the low specific activity and release rate--the radiation monitor did not rise above background levels during the release. The inspector reviewed similar calculations on several subsequent releases, including ones involving the same personnel, and noted no additional errors.

The inspector reviewed monthly liquid radwaste release summaries for December 1982 and January 1983. These indicated that releases had been well below (i.e., one to three percent of) regulatory limits.

- 3.1.7 Radioactive Waste Processing and Transportation. On February 14, the inspector reviewed administrative controls and interviewed personnel regarding transfer of non-compactible radioactive trash from 55-gallon drums to B-25 metal containers per procedure HPO/CO-71S. The work is being done by a contractor with licensee HP Quality Control inspector coverage as part of a program to reduce in-plant storage of radwaste. No unacceptable conditions were noted. On February 17, the inspector briefly observed loading of high integrity casks (HICs) of resin into a radwaste shipping truck. Resin in one cask demonstrated fluid characteristics when handled by the manipulator, indicating presence of water. Without prompting, the supervisor directed that the HIC be returned to an unused storage aisle. The supervisor stated that such a condition typically occurs with only one or two HICs per quarter and that the resin would be re-processed. The inspector verified that licensee records were changed to indicate the HIC could not be shipped. No unacceptable conditions were identified.
- 3.1.8 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', 'B,' 'C,' and 'D;' Unit 2 Core Spray 'B' and 'D'. On a sampling of containment ventilation valves, the inspector verified that snap rings were in place to limit the degree of valve opening during operation.

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>
2-37M3-20	Diesel Driven Fire Pump	February 7
3-4M3-15	Unit 3 Reactor Vessel Head Removal	February 17

No unacceptable conditions were identified.

3.2 Followup on Events Occurring During the Inspection--Unit 3 Unplanned Shutdown on January 27, 1983

About 1:15 p.m., January 27, the E23 4KV Emergency Bus tripped and locked-out (i.e., indicated a bus fault) for an initially unknown reason. The E-2 Diesel Generator started automatically, but, as designed, would not energize the bus due to the lock-out. Equipment lost included air ejectors and hotwell level controls and indications. Consequently, condenser vacuum and hotwell level began to decrease. About 1:30 p.m., prior to reaching any automatic trip setpoints, operators manually scrambled the reactor, declared an Unusual Event, and notified the NRC Operations Center.

No ECCS actuation setpoints were reached. RCIC was operated manually to control reactor water level. The resident inspector observed portions of licensee response and follow-up actions from the Control Room. About 1:50 p.m., the E23 bus fault indication was cleared and the bus was automatically re-energized from off-site power. Subsequent licensee investigation revealed that a Construction Division electrician had accidentally shorted a protective relay, causing the bus trip, while checking wiring configurations. Because the transient was relatively slow in developing, the individual was unaware he had caused it. The individual had received approval of the operating shift prior to starting work. The unit was returned to power operation on January 28. No violations were identified.

3.3 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: Shift Supervision Log, Reactor Engineering Log (Unit 2), Reactor Engineering Log (Unit 3), Reactor Operators Log (Unit 2), Reactor Operators Log (Unit 3), CO Log Book, and STA Log Book, Night Orders (Current Entries), Radiation Work Permits (RWPs), Maintenance Request Forms (MRFs), Ignition Source Control Checklists, and Operation Work & Information Data, all January 11 - February 23, 1983.

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.

4. IE Bulletin 80-25, Operating Problems With Target Rock Safety-Relief Valves at BWRs

The bulletin discussed malfunctions of safety-relief valves (SRVs) at a BWR. Some of the bulletin requirements pertained only to two-stage valves and were not applicable to this licensee, who uses only three-stage valves. Other bulletin requirements included the following.

- If any SRV fails to operate as designed, it shall be removed from service disassembled, inspected, overhauled and tested before being returned to service; unless the cause of the malfunction is clearly determined, understood and corrected. Operating procedures shall include the above requirements.
- The SRV pneumatic supply system shall be reviewed to determine the potential for overpressurization. Protective devices and high and low pressure annunciators shall be installed. Operating procedures shall guide operator response to a high or low pressure condition.

The licensee's March 18, 1981 response committed to the SRV overhaul requirements. The response also described the normal pneumatic air supply from the Instrument Nitrogen Systems. This system does not have a high pressure capability but is provided with relief valves and a low pressure annunciator. Response to the alarm is governed by an annunciator alarm card. The response also referenced a modification that would provide a high pressure pneumatic supply to the SRVs used in the Automatic Depressurization System (per TMI Action Plan Item II.K.3.28) and committed to providing overpressure protection and low pressure alarm on the new supply. A supplemental response, dated May 19, 1982, committed to high pressure alarm (and associated response procedures) for the new system. This ADS pneumatic supply modification has since been completed. The inspector discussed this bulletin and the related modification with licensee engineers and reviewed the following documents to verify the licensee's responses:

- GP2A C.O.L., Revision 51, January 10, 1983, Reactor Startup Order;
- OT35, Revision 21, July 26, 1982, Inadvertant Opening of a Relief Valve;
- P&IDs M-333, Instrument Nitrogen, and M-351, Nuclear Boiler (Control Room copies);
- Annunciator Card 27 (F2), July 22, 1982, ADS Nitrogen High/Low Pressure; and
- Modification Package 625F, ADS Backup Nitrogen Supply.

Regarding SRV failures, the inspector noted that Unit 2 SRV 715 had been replaced, per bulletin requirements, following its failure in October 1982 (reference Combined Report 50-277/82-16 and 50-278/82-16).

No violations were identified; the inspector had no further questions.

5. Review of TMI Action Plan (TAP) Requirements

The inspector reviewed the status of the following TAP items to verify that the licensee is meeting his commitments.

5.1 TAP Item II.B.1, Reactor Coolant System Vents

Licensees were to provide means to vent the reactor coolant system so that core cooling would not be inhibited by noncondensibles after an accident. A BWR Owners Group studied this issue and concluded that existing BWR venting provisions satisfied NUREG-0737, based on ADS system design. Also, other means of venting (i.e., non-ADS safety relief valves, a reactor vessel head vent, and HPCI and RCIC turbines) provide capabilities beyond NUREG 0737 requirements. The licensee endorsed the group position and provided additional clarifications in letters dated June 20, 1981 and March 3, 1982. NRC:NRR accepted the licensee's position by letter and Safety Evaluation on April 29, 1982. Thus, no system modifications were required. The inspector reviewed the licensee's submittals for technical accuracy; no inaccuracies were noted. The inspector spot-checked the following reference documents to verify that they supported licensee responses:

- FSAR Supplement I, Question 14.6, regarding combustible gas control and mixing of noncondensibles vented to containment;
- FSAR Appendix C, regarding seismic qualification of vent paths;
- Surveillance Test ST20.037 and ST20.039, regarding leak testing of HPCI and RCIC steam valves; and
- Controlled drawing M1-S23, regarding direct indication of reactor vessel head vent valve position.

The inspector also verified that emergency procedures provide for RCS venting to prevent excessive accumulation of noncondensibles. No unacceptable conditions were identified. This item is closed.

5.2 TAP Item II.K.3.22B Automatic Switchover of Reactor Core Isolation Cooling System Suction

This item required a modification to provide automatic switching of RCIC suction from the condensate storage tank (CST) to the torus on low CST level. The licensee completed the modification during the Summer 1981 Unit 2 outage and the Spring 1982 Unit 2 outage. On January 25 the inspector discussed the modification with licensee engineers and reviewed the following documents.

- Special Procedure 482-2, Revision 0, March 24, 1982, Pre-op of MOD 635, RCIC Pump Suction Automatic Transfer, completed 6/25/82;
- M-359, Revision 17, RCIC System P&ID, annotated in red ink to show MOD 635;
- Shift training information regarding MOD 635, and
- Various procedures changed as a result of MOD 635, including GP-8; S3.5.A, B, D, and J; E-25; ST2.4.27, and ST2.4.28.

No unacceptable conditions were identified regarding implementation of licensee commitments. NRC:NRR technical review of licensee commitments is in progress.

5.3 TAP Item II.K.3.24, Confirm Adequacy of Space Cooling for HPCI and RCIC

This item required licensees to verify that RCIC and HPCI could withstand a complete loss of alternating current (AC) power to their support systems, including coolers, for at least two hours. The licensee's June 29, 1981 response referenced a clarification reached in BWR Owners Group correspondence to NRC that "complete loss of AC" was intended to mean loss of all off-site power. The licensee stated that HPCI and RCIC support systems, including space coolers and Emergency Service Water, require no off-site power and therefore no modifications were required. The inspector checked a sampling of plant drawings and electrical one-line diagrams, and observed in-plant equipment. No off-site power requirements for HPCI and RCIC support equipment were identified. The NRC:NRR response and Safety Evaluation, dated August 19, 1982, accepted the licensee's evaluation, including the clarification of loss of AC."

The inspector had no further questions; no unacceptable conditions were identified.

5.4 TAP Item II.K.3.25, Effect of Loss of Alternating Current (AC) Power on Pump Seals

Licensees were to verify that recirculation pump seals were adequately designed to withstand a complete loss of AC for two hours. A BWR Owners Group provided analyses and test data and concluded that a two-hour loss of off-site power would not cause unacceptable leakage or seal deterioration. The Owners Group indicated the data was applicable to Peach Bottom. The NRC:NRR response and generic Safety Evaluation, dated January 25, 1983, accepted the Owners Group position, acknowledged the licensee's endorsement of the group position, and agreed that no modifications were needed. The Safety Evaluation also indicated that "loss of AC" was intended as loss of all off-site power. The inspector reviewed the licensee letters, dated June 29, 1981, December 29, 1981, and December 14, 1982, endorsing the BWR Owners Group findings. No inconsistencies were noted. The inspector had no further questions.

5.5 TAP Item II.K.3.28, Verify Qualification of Accumulators on Automatic Depressurization System (ADS) Valves

Licensees were to verify that ADS accumulators could withstand a hostile environment and still perform their function for 100 days following an accident. The licensee's evaluation should consider normal leakage and take no credit for non-safety related equipment. The licensee committed to provide a long-term safety grade air supply to the ADS valves, using a series of nitrogen bottles in the Reactor Building and an outside connection for installation of additional bottles as needed. The two lines entering containment were each to have a check valve and an automatic isolation valve for containment isolation. This modification has been installed at both units. The inspector observed the in-plant equipment and controls, reviewed the modification package, and checked about 15 new and revised procedures. The inspector verified that controlled drawings and training materials had been changed to reflect the modification.

The inspector concluded that the licensee had met his commitments for this item. NRC:NRR review of the commitments for adequacy is in progress. No unacceptable conditions were identified.

5.6 TAP Item III.D.3.4, Control Room Habitability

Licensees were to assure that control room operators will be adequately protected against the effects of accidental releases of toxic and radioactive gases. NUREG-0737 specified the Standard Review Plan sections which must be met for the habitability evaluations. Licensees were to submit the results of their evaluations and provide a schedule for any needed modifications. The licensee's evaluation, submitted January 8, 1981, concluded that the only significant hazard was gaseous chlorine used in the water treatment system. In letters dated April 2, 1981 and December 15, 1982, the licensee committed to removal of the gaseous chlorine from the site by January 1983 and changeover to a liquid sodium hypochlorite chlorination system by February 28, 1983. The licensee's evaluations and commitments are subject to NRC:NRR technical review. The inspector verified that the gaseous chlorine bottles had been removed from the site and discussed in-progress pre-operational testing of the liquid chlorination system with licensee engineers. No unacceptable conditions were identified; this item remains open pending completion of licensee actions and NRR reviews.

6. Maintenance

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

<u>Maintenance Request/Date</u>	<u>Equipment</u>	<u>Date Observed</u>
2-37-M3-20 February 6	Diesel Driven Fire Pump	February 8

For the following in-progress Unit 3 maintenance procedures, the inspector spot-checked administrative controls, reviewed documentation, and interviewed cognizant engineers and supervisors:

- M4.2, Revision 12, April 2, 1982, Opening the Reactor Vessel;
- M4.52, Revision 6, March 30, 1982, Removal of the Reactor Vessel Head; and
- M4.53, Revision 4, June 9, 1981, Reactor Head Detensioning

No unacceptable conditions were noted.

7. 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:

- ST2.7.106, Revision 4, May 8, 1980, Calibration Check of DPIS 3-12-1248, completed January 17; and
- ST2.3.08 (Funct.), Revision 1, November 5, 1982, Functional Test of TE-TS 4936, 4937, 4938, and 4939 A through D, completed February 8.

No unacceptable conditions were identified.

8. Regualification Training

On February 23, the inspector attended a one-day requalification lecture on the licensee's revised emergency procedures based on DWR Owner Group Guidelines, Revision 2. Since all licensed personnel had previously attended one-week simulator training courses on the procedures, the lecture objectives were to update personnel on procedure changes since their simulator training and to review problem areas identified at the simulator. The lecture proceeded as scheduled, and material was thoroughly and professionally presented in accordance with the lecture objectives. The inspector observed administration of the post-session quiz, reviewed a sampling of graded quizzes, and discussed the lecture and quiz with the instructor. No unacceptable conditions were identified.

9. Radiation Protection

During this report period, the inspector examined work in progress on 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 60 people observed frisking requirements of Health Physics procedures. A sampling of high radiation doors was verified to be locked as required.

Compliance with RWP requirements was verified during each tour; special emphasis was placed on RWP adherence in work associated with the Unit 3 outage. About 15 RWPs were checked during the month. Line entries were reviewed to verify that personnel had provided the required information and about 30 people working in RWP areas were observed to be meeting the applicable requirements.

No unacceptable conditions 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 20 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 unacceptable conditions were identified.

11. Design Control

The inspector observed Containment Atmosphere Dilution (CAD) System Hydrogen and Oxygen Analyzer cabinets at both units. Each cabinet is supplied with nitrogen reference gas from a bottle mounted near the cabinet. On January 26, the inspector noted that the 3A CAD reference gas bottle's mounting bracket chain was fastened by a bent welding rod. On January 31, the inspector checked the supports on the tubing between each reference gas bottle and cabinet. In five of the eight cases, the tubing was not fastened to all of its wall-mounted supports. Also, the installed tubing supports were unevenly spaced. The inspector measured unsupported tubing runs of up to eleven and one-half feet.

FSAR Section 5 and Appendix C indicate that CAD is a Seismic Class I system. Licensee engineers confirmed that the reference gas is needed for proper analyzer operation. The current CAD cabinet and gas bottle arrangement resulted from Modification 1F (77-85), completed for all analyzers between October 1978 and April 1979, as indicated by completed Maintenance Request Forms in the modification package on-site. The inspector reviewed the following documents associated with Modification 1F:

- Construction Job Memorandum, dated June 5, 1978;
- Engineering Work Letter, dated August 29, 1977; and
- Construction Drawing M-1262-0, dated July 15, 1977.

These indicated that each cabinet must conform to Seismic Class I requirements, but did not specify seismic requirements for the reference gas bottles or tubing. A mounting bracket for the bottles was shown on the drawing, but no tubing supports were shown or mentioned. Licensee engineers indicated that tube support locations would have been determined in the field by construction personnel. 10CFR50 Appendix B, Criterion III, Design Control, requires measures to assure that applicable design bases are translated into specifications, drawings, and instructions. Failure to translate the seismic requirements of the CAD system into specifications, drawings and instructions pertaining to the CAD analyzer reference gas supply is a Violation (277/83-02-01 and 278/83-02-01). Licensee engineers stated that the tube supports had apparently been unfastened to facilitate bottle replacement. The licensee promptly restored the unfastened tube supports. Licensee engineers stated that the unsupported tubing would probably not be damaged in a seismic event due to its small mass, as long as the supply bottle remained supported. (The supply bottle mounting bracket is the same type later used in seismic designs.) However, the licensee usually specifies highly conservative tube support intervals to preclude the need for costly detailed seismic analyses of each specific installation. About February 7, the licensee's Engineering Department provided station personnel with tube support criteria for the CAD reference gas tubing, specifying maximum intervals of six feet. The licensee surveyed the as-built installations and added more supports where needed.

The inspector reviewed documents for two other modifications that used nitrogen bottles in Seismic Class I applications: back-up nitrogen to containment ventilation valve seals and back-up operating nitrogen for ADS valves. In these cases, bottle and tube support criteria were supplied in the modification packages.

The inspector expressed concern regarding the repeated problems associated with nitrogen bottles used in Seismic Class I applications. Two previous violations have occurred from failure to maintain seismic supports of bottles (reference combined reports 277/82-09 and 278/82-09, and 277/82-24 and 278/82-23). In this event, tube supports were apparently unfastened for ease of

bottle replacement, even though the procedure (ST7.9.2) directing replacement of low pressure bottles requires verification that the bottles are seismically restrained. The inspector noted that additional Seismic Class I bottles are being installed in the plant as part of a modification to various ventilation damper controls. The inspector requested the licensee to include in his response to this Violation positive measures to assure that all Seismic Class I bottles are properly identified and maintained in a seismically qualified condition.

12. Fire Protection and Housekeeping

The inspector observed control room indications of fire detection and fire suppression systems, spot-checked for proper use of firewatches and ignition source controls, checked a sampling of fire barriers for integrity, and observed fire-fighting equipment stations.

About 12:30 p.m., January 26, the inspector noted that Door No. 142, between the Unit 3 'B' and 'D' RHR rooms was blocked open by hoses connected to a high pressure water cleaner, commonly used for surface cleaning and decontamination. No one was in the area. The door is part of a fire-rated barrier, according to the Fire Protection Program Report of May 1977, and is so listed in procedure ST16.16, Revision 4, October 14, 1982, Fire Door Inspection. Also the door was marked, "Fire Door, Keep Closed." When informed, the licensee promptly cleared the hoses and shut the fire door.

About 11:20 a.m., February 7, the inspector noted that Door No. 6 from the Unit 3 High Pressure Service Water (HPSW) Pump Room to the Diesel-Driven Fire Pump Room was blocked fully open with no one in the area. According to the Fire Protection Program Report of May 1977, the door is part of a two-hour fire barrier between the rooms. Although the fire pump was out of service for maintenance at the time, an operable fire barrier was needed to slow the spread of a postulated fire from the fire pump room to the operable equipment in the HPSW Pump Room.

When informed, the licensee promptly closed the door. A sign, "Fire Door, Keep Closed," was put on the door, which had not been previously marked as a fire door. The licensee also determined that the door had been overlooked in developing fire door lists for surveillance testing. A weekly inspection of the door was implemented as required by 10CFR50 Appendix R for normally locked doors.

Administrative Procedure A-30, Revision 4, May 21, 1981, Plant Housekeeping Controls, requires all fire doors to be kept closed except to accommodate the movement of personnel or equipment. The two above noted failures to follow this procedure violate Technical Specification 6.8 and Regulatory Guide 1.33 (November 1972) requirements for implementation of fire protection procedures (277/83-02-02 and 278/83-02-02).

The inspector reviewed Administrative Procedure A12.1, Revision 4, September 30, 1982, Procedure for Controlling Technical Specification Firewatches. The procedure requires, in part, that a continuous firewatch with back-up fire suppression equipment be assigned in an area where the Cardox (Carbon Dioxide Fire Suppression) System defeat switch is in "Defeat" for over eight hours. This appears inconsistent with Technical Specification 3.14.B, which requires a continuous firewatch with back-up fire suppression equipment for Cardox inoperabilities over one hour. The licensee stated that (1) he had not considered the system inoperable with the defeat switch in "Defeat," since a person in the area could reactivate the system upon leaving the room or receiving a fire alarm; and (2) the eight hour stipulation enhanced personnel safety. The inspector stated that a Cardox System is in fact inoperable when in "Defeat," since the system's heat detectors then cannot function to automatically initiate the system as intended. The inspector also stated that the switch may be placed in "Defeat" for personnel safety reasons for over an hour, as long as Technical Specification firewatch requirements were met. Therefore, the specification should not degrade personnel safety. This matter is unresolved pending licensee action to correct the procedural inconsistency (277/83-02-03 and 278/83-02-03).

The inspector observed housekeeping conditions, including control of combustibles, loose trash, and debris; and spot-checked cleanup during and after maintenance. Although the Unit 3 outage and the continued storage of numerous radwaste barrels in-plant had a somewhat detrimental effect on housekeeping, no unacceptable accumulations of combustibles or trash were noted. The inspector noted continuous clean-up effort in heavy traffic and work areas at Unit 3. On February 14, the inspector noted that all lighting in the 3C Core Spray Room was off. When informed, the licensee promptly restored the lighting. The licensee indicated that other lighting problems had been experienced and resolved during set up of equipment for the outage. The inspector will continue to observe lighting conditions during routine plant tours.

Except as noted above, no unacceptable conditions were identified.

13. Review of Licensee Event Reports (LERs)

13.1 The inspector reviewed LERs submitted to NRC:RI to verify that the detail 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 follow-up. The following LERs were reviewed:

<u>LER No./</u> <u>LER Date/</u> <u>Event Date</u>	<u>Subject</u>
3-82-25/3L 1/11/83 12/14/82	Torus level indicator inoperable due to off-center arm in transmitter. Redundant indication was operable during repairs.
2-82-38/3L 12/2/82 11/6/82	Oxygen analyzer isolation valves failed to seat during testing. Valves were cleaned, rebuilt and retested. Redundant isolation valves were kept shut during repairs.
3-82-27/3L 1/24/83 12/27/82	RCIC tripped and was inoperable for a few minutes during testing because steps were not performed in order. Operators were reinstructed. Redundant equipment was operable.
**2-82-44/3L 1/28/83 12/29/82	Torus level transmitter 8027A was knocked out of calibration by accidental bumping. Redundant instrumentation was operable during re-calibration of 8027A.
**2-82-45/3L 1/28/83 12/30/82	2B RHR motor was inoperable for 17 hours after being wetted during decon operations. Redundant equipment remained operable; workers were reinstructed.
3-83-01/3L 2/2/83 1/3/83	During testing, the 'A' Main steam line low pressure switch was found slightly out of calibration and was recalibrated. Redundant channels were operable.
**3-83-04/3L 2/4/83 1/27/83	Torus purge valve failed to fully close after use due to a linkage obstruction. Redundant valves were operable and shut. The linkage was freed and the valve was closed.

- | | |
|---|---|
| 2-83-01/1T
1/17/83
1/4/83 | Environmental qualification of ECCS Room cooler control switches. (This subject was reviewed in Combined Reports 277/82-25 and 278/82-24.) |
| *2-82-02/1P and 1T
1/28/83 (1T)
1/20/83 (1P)
1/20/83 | RCI Steam line isolation valve was inoperable for about one hour due to blocking error. |
| 3/83/21P and 1T
2/8/83 (1T)
1/28/83 (1P)
1/26/83 | HPCI exhaust line vacuum breaker isolation valve failed to close during lineup for leak testing. Redundant valves were operable and were shut during repair and retest. Redundant ECCS was operable, except for a 30-minute RCIC inoperability, during which time a plant shutdown was initiated. |
| 3-83-6/1P and 1T
2/10/83 (1T)
2/1/83 (1P)
2/1/83 | A CAD System test tap isolation valve leaked during local leak rate testing. The redundant isolation valve was shut during repair and retest. |
| **2-82-42/3L
1/10/83
12/10/82 | Two snubbers became disconnected during operation, and were reconnected. One may have been disconnected by craftsmen. Re-instruction of foremen is planned. This LER will be further reviewed onsite (277/83-02-04). |

*Selected for on-site followup

**See Detail 13.2.2

13.2 On-site Followup

For LERs selected for on-site 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 10CFR50.59. Report accuracy, compliance with current reporting requirements and applicability to other site systems and components were also reviewed.

13.2.1 LER 2-83-2/1P and 1T. About 6:30 a.m., January 20, a control room operator noted that the indicating lights for the RCIC inboard steam line isolation valve were off.

Immediate investigation determined that the feed breaker for the valve had been mistakenly opened during the application of a block (tagout) to a valve with a similar identification number. The breaker was then closed to restore power and indication to the valve. Since the valve was in the open position during the time the feed breaker was open, RCIC remained operable; however, the Primary Containment Isolation function of the inboard steam valve was inoperable. The redundant (outboard) isolation valve was operable, but, because the inoperability of the inboard valve was not identified for one hour, Technical Specification requirements to either shut the redundant valve or initiate a shutdown were not met during that time. In this event, Technical Specifications allow a total of 24 hours to reach Cold Shutdown. Because the problem was fixed when found (after one hour), shutdown was not required.

The licensee reported this event to the NRC and conducted an on-site review. This review identified several failures to follow proper administrative controls, to communicate effectively, and to be alert to details. Thorough critiques and retraining sessions pursuant to this event were held with licensed operators on all shifts within a few days of the event. An investigation by the licensee's corporate Methods and Training session resulted in similar conclusions plus a finding that standard blocking sequences were not being used in all applicable cases. Appropriate guidance to operators was provided via a Station Superintendent letter on February 10.

Because this event was identified, reported and promptly corrected (with actions that included measures to prevent recurrence) by the licensee, no Notice of Violation is issued.

13.2.2 The inspector noted that several events appeared to result from inadequate control of activities (including housekeeping) in-plant. These events include those denoted by double asterisks above, as well as the following.

-- On February 14, workers were allowed to open three penetrations in Unit 3 Secondary Containment. Although the reactor was shutdown, Secondary Containment was still required. Secondary Containment was restored within the time required by Technical Specifications (LER due March 16).

-- About 2:30 p.m., February 15, a Unit 3 high Scram Discharge Instrument Volume automatic scram signal was received. Investigations concluded that the volume was empty and the level equipment had probably been

bumped hard enough to trip both protective channels. The unit was shutdown at the time. Single channel trips due to bumping of this equipment have occurred in the past.

The inspector stated that the large number of these events could indicate a lack of supervisory attention to activities in-plant. This issue will be reviewed in future inspections and in SALP (277/83-02-05 and 278/83-02-04).

Except as noted in the preceding, no unacceptable conditions were identified.

14. In-Office Review of Monthly Operating Reports

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>
December 1982	January 10, 1983
January 1983	February 14, 1983

No unacceptable conditions were identified.

15. Licensee Organizational and Personnel Changes

On February 4, the licensee notified the inspector of the following changes, which became effective February 7:

- W. T. Ullrich, former Station Superintendent, was assigned to a new corporate office position of Manager, Nuclear Services, responsible for Nuclear Generation Division licensing, Health Physics, Emergency Planning and Independent Safety Assessment functions.
- R. S. Fleischmann, former Assistant Station Superintendent, was designated Station Superintendent.
- D. C. Smith, Outage Manager, assumed duties as Assistant Station Superintendent. A new Outage Manager has not been named.

The inspector noted that both the new Station Superintendent and his assistant hold senior operator licenses. No unacceptable conditions were identified.

16. Unresolved Items

Unresolved items are items about which more information is required to ascertain whether they are acceptable, violations, or deviations. An unresolved item is discussed in Detail 12.

17. Management Meetings

17.1 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>
January 14	Routine Discussions	Station Superintendent
January 26	Control of Fire Doors	Maintenance Engineer
January 28	Seismic Air Bottles, LER 2-83-2/1P	Operations Engineer
January 28	Fire Doors, Seismic Bottles, Routine Discussions	Station Superintendent
February 2	Seismic Bottles	Technical Engineer
February 3	Seismic Bottles	Station Superintendent
February 4	Routine Discussions	Station Superintendent
February 7	Fire Doors	Site QA Engineer
February 16	Routine Discussions	Station Superintendent
February 18	Fire Doors/Firewatchés	Site QA Engineer
February 24	Routine Discussions	Station Superintendent
February 28	Summary of Preliminary Findings	Station Superintendent

17.2 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>
January 14 (Exit)	Emergency Planning	277/83-01 278/83-01	N. Terc
February 14 (Entrance) February 18 (Exit)	Physical Security	277/83-04 278/83-04	J. Dunlap
February 23 (Entrance)	Emergency Public Notification	277/83-06 278/83-06	I. Cohen