

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

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Report No. 50-277/84-15 & 50-278/84-13
Docket No. 50-277 & 50-278
License No. DPR-44 & DPR-56
Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

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

Inspection Conducted: April 21 - June 7, 1984

Inspection at: Delta, Pennsylvania

Inspectors: J. E. Tripp
for R. Blough, Senior Resident Inspector

6/20/84
date

J. E. Tripp
for H. Williams, Resident Inspector

6/20/84
date

G. W. Meyer
G. W. Meyer, Project Engineer

6/20/84
date

Approved by: Glenn W. Meyer
for Lowell E. Tripp, Chief
Reactor Projects Section 3A

6/21/84
date

Inspection Summary: April 21 - June 7, 1984 (Combined Inspection Report
50-277/84-15 and 50-278/84-13)

Routine, on-site regular and backshift resident inspection (148 hours Unit 2; 95 hours Unit 3) of: accessible portions of Unit 2 and Unit 3, operational safety, radiation protection, physical security, control room activities, licensee events, surveillance testing, refueling activities, maintenance, control of heavy loads, TMI Action Plan items, and outstanding items.

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Results: Except as follows, activities appeared to be conducted safely and in accordance with regulations: (1) failure to post a contaminated area is a Violation, Detail 6; (2) Reactor Building crane upper limit switch setpoint is unresolved, Detail 4.4; (3) adequacy of response to earthquake felt on-site is unresolved, Detail 3.2; and (4) acceptance criteria in hydraulic fluid level inspections is unresolved (Detail 5).

DETAILS

1. Persons Contacted

J. K. Davenport, Maintenance Engineer
G. F. Dawson, I&C Engineer
R. S. Fleischmann, Station Superintendent*
A. Hilsmeier, Senior Health Physicist
B. Hinkle, Supervising Engineer, Station Maintenance Group*
T. Hinkle, Supervising Engineer, ISI
F. W. Polaski, Outage Manager
S. R. Roberts, Operations Engineer
D. C. Smith, Assistant Station Superintendent
S. Q. Tharpe, Security 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

- 2.1 (Closed) Violation (277/78-27-01), ISI procedure for radiography did not assure quality of radiographs (RTs). This item involved use of poor quality chemicals by a vendor who is no longer used on-site. Steps were taken at that time to correct that vendor's deficiency. Since then, the licensee has instituted procedures for review of each contractor RT by NDE-qualified licensee personnel prior to acceptance of the work. This item is closed.
- 2.2 (Closed) Inspector Follow Item (278/78-31-01), various environmental qualification inspections and modifications. This item involved terminal box inspections and repairs, and replacement of certain limited-life cable splices with fully qualified splices. The inspector reviewed modification package 470 and noted that the Unit 3 work was completed in January 1979 (terminal boxes) and October 1979 (splices). The inspector reviewed a sampling of "Inspection and Rework Checklists" to verify that corrective actions were documented for each deficiency found. No inconsistencies were noted. Unit 2 work had been verified in the original inspection. This item is closed.
- 2.3 (Closed) Unresolved Item (277/84-03-03), confirmatory analyses of vent header surface depressions. The licensee's Architect Engineer performed analyses that confirmed that the depressions were not of structural concern. After reviewing a memo documenting the analysis, the inspector had no further questions.
- 2.4 (Closed) Unresolved Item (277/80-06-01), acceptability of calibration procedure of diesel fuel oil tank level gauge. The inspector reviewed Surveillance Test Procedure ST 2.4.21, Revision 1, January 24, 1982,

Calibration of LIS-0401 A, B, D. The tank level has greater error than normally encountered due to the simple nature of the instrument and the geometric configuration of the tank. However, the licensee has developed a correlation curve (actual vs. indicated reading adjustment), which is used once each operating cycle to calibrate the gauge. Further, the error is in the conservative direction. This item is closed.

- 2.5 (Closed) Violation (277/82-24-03, 278/82-23-03), fire brigade training requirements. Corrective action will be followed under item (277/83-31-02; 278/83-29-02), a repeat violation for the same area.
- 2.6 (Closed) IE Bulletin 79-03 (277/79-BU-03), weld defects in stainless steel pipe manufactured by Youngstown Welding and Engineering Co. Licensee responses dated April 9, 1979 and June 6, 1979 state that none of the suspect material was used in any safety-related system. This item is closed.
- 2.7 (Closed) IE Bulletin 79-03A (277/79-BU-03A), longitudinal weld defects in stainless steel pipe. Longitudinally welded stainless steel pipe was found to be susceptible to centerline lack of weld penetration. This resulted in reduced effective wall thickness such that applications with stress greater than 85 percent of the allowable stress could be questionable. The licensee response dated August 1, 1980 states that the only safety-related application using the applicable longitudinally fusion welded stainless steel pipe are three pieces in the Reactor Core Isolation Cooling (RCIC) pump suction line in Unit 3. The maximum stress calculated in these pieces is 27 percent of the allowable stress. Based on the acceptable stress levels in the suspect piping, this item is closed.
- 2.8 (Closed) Violation (277/82-03-03, 278/82-03-02), exceeded 2.0 milliroentgens per hour in occupied portion of radwaste shipping vehicle; Inspector Follow Item (277/82-03-04; 278/82-03-03), failure to follow procedure involving RWP and Health Physics QC checks on radwaste shipments; Unresolved Item (277/82-03-05; 278/82-03-04), station management review of shipments; and Violation (277/82-13-01; 278/82-13-01), liner shipped without lifting devices. This area was reviewed programmatically in Combined Inspection 277/84-09; 278/84-09. The inspector reviewed the report and determined that its programmatic review (and associated findings) sufficiently verified the effectiveness of corrective actions for the 1982 items. Resident inspections have also included observations of a sampling of radwaste shipment preparation activities. Therefore, the inspector has no further questions on these items.
- 2.9 (Closed) Inspector Follow Item (277/80-32-01), recirculation cross-tie drain line crack. At the time of the original inspection the inspector had wanted to review, when completed, the licensee's metallurgical analysis of the cracked weld that had been replaced. Because of higher inspection priorities the subsequent review was not completed. Piping

modifications during the current Unit 2 outage will eliminate the cross-tie and associated drain line. Recirculation system pipe supports will be reanalyzed. Therefore, this item is closed.

- 2.10 (Closed) Unresolved Item (277/80-06-05; 278/80-06-05), procedure needed for inspection of drywell and suppression chamber interior. The licensee has issued a Surveillance Test (ST) procedure to cover this inspection. The inspector reviewed ST 13.37, July 8, 1980, Drywell and Torus Inspection, and found it acceptable. This item is closed.
- 2.11 (Closed) Violation (277/79-12-02; 278/79-14-03), inadequate retention of records for maintenance activities and housekeeping following maintenance activities. The records aspect of this item is covered under item (277/81-12-01; 278/81-13-01) and has been closed. The aspect of housekeeping following maintenance activities has been a focus of continuing inspection attention. Specifically, this area was discussed in the 1983 and 1984 Systematic Assessments of Licensee Performance (SALPs) with improvement noted in 1984. Further, Combined Inspection Report 50-277/83-37; 50-278/83-35 closed item 277/80-28-01 concerning housekeeping following maintenance in the drywell. This area will continue to be routinely evaluated during resident inspections. This item is closed.
- 2.12 (Closed) Unresolved Item (277/81-12-03, 278/81-13-03) date for full compliance to ANSI N45.2.9 for records storage. The licensee committed to have full compliance with ANSI N45.2.9 in June, 1983. Combined Inspection Report 50-277/83-32; 50-278/83-30 reviewed this area and issued a deviation concerning some areas where full compliance was not achieved. Accordingly, this item is closed and future review of records storage compliance to ANSI N45.2.9 will be followed under the deviation.
- 2.13 (Closed) Violation (277/81-12-01, 278/81-13-01), inadequate retention of records for maintenance activities. Previously, the licensee had continuing difficulty in locating records of completed maintenance activities. However, in March 1984, the licensee instituted the Computer History and Maintenance Planning System (CHAMPS), a computerized administrative control method for maintenance activities. CHAMPS enables the licensee to determine the phase of completion and the past history of each Maintenance Request Form. For completed maintenance activities, both a computer history and a paper record exist. This area was inspected as part of the maintenance inspection in Inspection Report 50-277/84-08; 50-278/84-08. This item is closed.
- 2.14 (Closed) Unresolved Item (277/82-24-01; 278/82-23-01), Fire Protection Coordinator. During a previous inspection, the responsibility for the fire protection program appeared fragmented. A licensee proposal was being evaluated to consolidate fire protection responsibility under one person, a fire protection coordinator. Subsequently, the licensee has established the position of Fire Protection Coordinator and has hired a person with fire protection experience to fill the position. He assumed the responsibility in March, 1984. This item is closed.

- 2.15 (Closed) Inspector Follow Item (277/83-12-03; 278/83-12-02), ST 12.1A requires revision of frequency. After verifying that the test had been changed to reflect the proper frequency, the inspector had no further questions.
- 2.16 (Closed) Inspector Follow Item (277/82-25-02; 278/82-24-02), review tag-out accountability issue after INPO commitments implemented. This issue was reviewed in inspection 84-07 during close-out of violations involving tag-outs. The inspector has no further questions.
- 2.17 (Closed) Unresolved Item (277/84-07-05, 278/84-07-05), whole body counts upon termination of employment. The licensee randomly selected 97 persons from various appropriate RWP's to determine if the required whole body count was given upon termination of employment on site. Of the sample, 51 persons had terminated employment on site. All of the terminated employees had received the required whole body count. The inspector discussed the methods used to collect the data with the licensee and reviewed the information. The inspector had no further questions.
- 2.18 (Open) Unresolved Item (277/83-29-03, 278/83-28-04), Reactor Building design in-leakage. The inspector noted that the licensee had reinstalled the weather-stripping to seal Reactor Building railroad doors. The Station Superintendent issued a letter instructing personnel to maintain the seals intact. Also, the licensee sent a letter to NRC:NRR, dated January 4, 1984, clarifying the FSAR design assumptions for secondary containment in-leakage. He also stated that FSAR Section 5.3 would be clarified in a routine FSAR update. The inspector will review the FSAR revision.

3. Plant Operations Review

3.1 Facility Tours

Daily tours and observations included the Control Room, Main Building (all levels), Reactor Buildings (accessible areas), Radwaste Building, Diesel Generator Building, yard perimeter outside the power block (including Emergency Cooling Tower and torus dewatering tank), Security Building (including CAS, Aux SAS, and control point monitoring), 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.

- 3.1.1 Control Room staffing frequently was checked against 10 CFR 50.54(k), 10 CFR 50.54(m), Technical Specifications, and the NRR letter of July 31, 1980. Presence of a senior licensed operator in the control room 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 based on control room indicators and plant observations. Observations included flow setpoints, breaker positioning, PCIS status, and radiation monitoring instruments.

- 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. Examples of specific alarms discussed during the report period were Moisture Monitoring System Trouble, RBM inoperable, CRD Accumulator trouble, and Recirculation Fluid Drive Scoop Tube Locked. 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. During the inspection numerous sensors of the Moisture Monitoring System (MMS) were inoperable at Unit 3. The inspector verified that hourly pump-out calculations were being performed. The inspector discussed the practice of pumping out the sumps manually and maintaining the required water seal in the sump. The inspector will pursue this item further. During the Unit 3 outage beginning June 1, the licensee replaced six moisture sensors in an attempt to improve MMS reliability.
- 3.1.5 No significant or unusual piping vibration was found.
- 3.1.6 Environmental Controls. The inspector observed visible 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 (see Item 3.2.3).
- 3.1.7 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. On the Unit 2 refueling floor, the inspector noted that, although an access path was open to each fire equipment station, visibility of those locations was inhibited by storage of large components (e.g., drywell head) on the floor during the outage. Licensee station personnel then requested assistance of their corporate fire marshal in improving visibility of fire equipment locations (See Detail 13).
- 3.1.8 Housekeeping. The inspector observed housekeeping conditions, including control of combustibles, loose trash and debris; and spot-checked on cleanup during and after maintenance. The

licensee's QC group has been given responsibility for on-going housekeeping evaluations and appeared to be effective in early identification and resolution of housekeeping discrepancies.

- 3.1.9 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. 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. On April 30, while attempting to hang a Unit 2 blocking permit, the licensee found that a scaffolding bar was preventing operation of Core Spray system manual valve 16B (Condensate Storage Tank to the "B" Core Spray Pump). There were no safety consequences of this particular event. However, in view of the April 26 event (LER 3-84-06, Detail 9.1) also involving scaffolding, the inspector expressed concern that scaffolding, which is all built by contractor personnel, may be interfering with other important equipment in-plant. The licensee initiated a program to inspect all in-plant scaffolds and to retrain scaffold installation personnel. Further, the licensee initiated administrative controls that require a licensee post-installation inspection of each newly built scaffold.

Information was received from inspectors in Region III associated with faulty diesel control boards supplied by Beloit Power Systems (originally Colt Industries) to the Fermi Nuclear Station. It was reported at Fermi that over 700 improper electrical connections were made in the four diesel generator control boards. These were discovered during testing in 1982-83. Peach Bottom had been supplied control boards by the same manufacturer. The inspector discussed the problem with the licensee. The licensee found no problems of this nature with their control boards. Also, it was determined that Peach Bottom's control boards were supplied several years before Fermi's. The inspector had no further questions.

No violations were identified.

3.2 Followup on Events Occurring During the Inspection

- 3.2.1 Earthquake Felt On-site. About 8:40 p.m. April 22, an earthquake occurred in Southern Pennsylvania, and personnel on-site felt the vibrations. The operating shift took those actions required by Procedure SE-5, Earthquake, for earthquakes less than the Operating Basis Earthquake (0.05g). The seismic recording system, whose actuation (trigger) setpoint is 0.01g,

had not triggered. Licensee actions included surveys of structures and equipment, test runs of diesels and fire water pumps, and checks of equipment vibration indicators. Also, the licensee informed the NRC Headquarters Duty Officer and the Senior Resident Inspector. As reported by local news media, geologists classified the earthquake as about 4.1 on the Richter scale with an epicenter near Marticville, Pennsylvania, about nine miles from the plant.

During April 23-27, the licensee tested the operability of seismic monitoring systems and attempted to obtain data from the April 22 event. The seismic recording system (Triaxial Strong Motion Seismic Monitoring System) was found to be inoperable, such that the recorders would not have triggered for any seismic event. The system had been verified operable through testing on April 19. The licensee found a defective circuit board, replaced it, and retested the system on April 27. With respect to the passive seismic monitors (etch plate-type Peak Recording Accelerographs) the licensee analyzed the plates and found unreasonably high event level etchings (0.5 to 1.8g). The licensee attributes these to work activities in the areas of the sensors--the sensors are not protected from bumping by workers. The licensee recalibrated the passive monitors and installed new etch plates.

On May 11, 1984 the licensee provided a letter to NRC Region I describing the event. The letter concluded, based on a textbook correlation of Richter scale vs. ground acceleration, that accelerations at the plant were, most likely, less than 0.01g. The station also received a memo from the licensee Corporate Civil Engineering Section stating that they were confident that ground accelerations were less than 0.05g and probably less than 0.01g. With respect to the licensee's May 11, 1984 letter, the inspector had the following concerns:

- No actions to prevent recurrence of the inoperable passive monitors were discussed;
- No discussion or corrective actions were provided for apparent problems with personnel training and familiarity regarding seismic monitoring systems. Examples of these problems included the following:
 - (1) On April 22, shift personnel apparently believed there was valid recorded data on the seismic monitors, even though it had not triggered. Later, it was determined that the data on the recordings was from a previous calibration check.
 - (2) Personnel assigned to check the passive monitors were not familiar with the system or its calibration data.

NRC Region I management contacted the licensee and requested an additional response which addresses the above concerns. Pending review of additional licensee corrective actions, the adequacy of the licensee's response to this item is unresolved (277/84-15-01).

- 3.2.2 Standby Gas Treatment System (SGTS) Damper Failure. On Friday, April 27 the SGTS system was manually started to commence Unit 2 drywell deinerting. Solenoid valve 0009 failed, causing the inlet and outlet dampers for the "A" fan to remain closed. The defective solenoid valve was replaced, the system tested and placed in service on April 28. Upon further investigation on Monday, April 30, it was determined that had a Group III isolation occurred with the solenoid valve not operating properly (a single failure), the SGTS system would not have been operable. The licensee made an ENS call to the NRC Operations Center on the afternoon of April 30. Plant operators were given special instructions to check system flow whenever the SGTS system started. Procedure RT 1.6.6, Revision 0, May 4, 1984 SGTS Fan Functional Test, was written and is being implemented daily while the licensee is evaluating the optimum positioning of a pitot tube to sense flow (a differential pressure switch is presently used).

The licensee projects completion of the evaluation by late June and the modification completed by the end of July. Information was provided to the INPO notepad system. The inspectors discussed the event with licensee engineers and reviewed the corrective actions. The inspectors reviewed RT 1.6.6 frequently on the daily tours of the Control Room. LER 2-84-08 which describes the event was also reviewed. The inspectors will review the completed corrective actions at a later date (277/84-15-02).

- 3.2.3 Unplanned Release. At 1:00 a.m. on May 29, 1984 the "3B" Recombiner Mechanical Compressor, used to raise the pressure of gaseous recombiner effluent prior to its entry into the off-gas holdup pipe, developed trouble and the operators put in service the "3A" compressor. High radiation alarms were received from the Recombiner Building and the Unit 3 vent stack. The vent stack radioactivity instantaneously peaked at about 15,000 counts per minute and rapidly dropped to twice normal levels and then to normal levels within thirty minutes. The licensee determined that the unplanned release was about 32% of the instantaneous Technical Specification limit (3.B.C.1). The inspector reviewed the strip chart recordings of the event, the licensee's release determinations and discussed the event with licensee personnel. The inspector also independently verified the release calculation. The licensee began troubleshooting the "B" compressor during the outage of June 1. The inspector had no further questions.

- 3.2.4 Unit 3 Shutdown--June 1. A shutdown for maintenance was begun on June 1. By 8:05 a.m. June 2, the reactor was fully shutdown and cooled down to about 300 psig (422 degrees Fahrenheit). The unit was in a Technical Specifications action statement to be in Cold Shutdown by June 5 due to RCIC inoperability. The Shift Superintendent decided to voluntarily enter a 24-hour action statement by blocking (i.e., tagging out) HPCI for routine maintenance because he knew the unit would be in Cold Shutdown well within 24 hours. Other shift personnel objected to the inoperability of both HPCI and RCIC during shutdown, so plant management was consulted. HPCI was returned to its normal standby lineup about 9:30 a.m. Also, the NRC Headquarters Duty Officer was notified about the HPCI event.

The inspector informed the licensee that, although the voluntary entry into the 24-hour action statement was apparently permitted by Technical Specification, such tagging out of redundant systems is considered an abuse of the flexibility provided by the Technical Specifications and is contrary to generally accepted conservative operating principles. The licensee agreed and stated that (1) such actions was also contrary to his management policy and (2) persons involved had been reinstructed.

Regarding the Unit 3 shutdown the inspector also noted that a shutdown activity sequence guide in the licensee's June 1 site information letter specified removal of containment ventilation valve motion limiters (snap rings) when below 105 psig reactor pressure. The licensee is actually committed to limiting valve motion anytime the reactor is not in Cold Shutdown. The inspector verified through interviews with operators that the snap rings remained in place, per approved procedures, until Cold Shutdown. The licensee investigated the site information letter error and reinstructed appropriate personnel.

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 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 (RWP's), Maintenance Request Forms (sampling), Ignition Source Control Checklists (sampling), and Operation Work & Information Data, all April 21 - June 7, 1984.

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. Refueling Activities

4.1 Refuel Mode Surveillances

The inspector observed surveillance associated with Unit 2 refueling activities 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 13.9, Secondary Containment Capability Test, performed May 3;
- ST 3.1.3, SRM Functional and Calibration Check, performed May 16 on SRM Channel "A"; and
- ST 12.1.2, Refueling Interlock Check, in progress on May 17.

The inspector reviewed documentation of the following completed surveillances:

- ST 12.1A, One Rod Permissive Refueling Interlock Test, completed May 9;
- ST 3.1.3, SRM Functional and Calibration Check, completed May 11;
- ST 3.2.3, IRM Functional and Calibration Check, completed May 11;
- ST 12.1.2, Refueling Interlock Check, completed May 11; and
- ST 3.1.2, SRM Functional and Calibration Check, completed May 11-15, and May 22.

For ST 3.1.2 the inspector also reviewed SRM recorder traces from selected tests to verify that monitor response met test acceptance criteria.

No violations or unresolved items were identified. However, the inspector informed the licensee of the following inconsistencies with Procedure ST 12.1.2:

- HP "hold points" in the procedure do not require HP signatures. The absence of a signature requirement lessens the effectiveness of the "hold point." (These steps relate to HP survey upon removal of any items from the pool. The inspector observed on several occasions that the required surveys were, in fact, being done.)
- The procedure does not state whether or not the auxiliary hoist mechanical stops must be set prior to lifts of the 400 pound test weights.

The licensee stated that these items would be reviewed (see Detail 13).

4.2 Operational Safety

The inspector noted that there were no Technical Specification or formal administrative limits on spent fuel pool temperature. The FSAR indicates that the concrete stresses were analyzed considering temperature, but the temperature used for the analysis is not listed. The inspector requested the licensee to resolve this issue, in view of the fact that the entire Unit 2 core is being off-loaded into the fuel pool. The licensee determined that the current analysis uses a maximum temperature of 150 degrees Fahrenheit; however, a new analysis of fuel pool storage capacity will use a higher temperature. The licensee stated that Unit 2 fuel pool temperature would be recorded at least daily throughout the outage in order to observe the 150 degree Fahrenheit limit. As of the end of this inspection, with the entire core transferred to the fuel pool, temperature was being maintained at 110 to 125 degrees Fahrenheit and was being logged each shift.

4.3 Refueling Observations

The inspector periodically observed refueling operations to verify that core off-load activities were being conducted safely and in accordance with Technical Specifications and licensee procedure FH-6C, Fuel Movement and Core Alteration During a Fuel Handling Outage. No violations were identified. The inspector noted that control room operators were observing the rod withdrawal permissive light (as a backup check for proper refueling interlock operation) during core alterations, but some operators were not aware that it was a procedural requirement to do so. The licensee issued a comprehensive "shift meeting notice" to remind personnel of various responsibilities during core alterations. The inspector also informed the licensee of a minor inconsistency in procedure FH-6C--the section which directs the control room operator to observe the rod withdraw permissive light describes only one of the two commonly encountered refueling situations that will cause the light to extinguish (see Detail 13).

4.4 Control of Heavy Loads

The licensee was committed through correspondence with NRC:NRR to fully implement his control of heavy loads program pursuant to NUREG-0612 for the current refueling outage. The inspector spot-checked selected activities involving heavy loads to verify compliance. The inspector reviewed procedures A-87 and MA-7, and observed lifting of (1) the Reactor Vessel Head on May 3, and (2) a fuel pool gate being moved from the pool to a refuel floor laydown area for maintenance on May 31. The associated Item Handling Reports (IHRs) were reviewed. For the fuel pool gate lift the inspector checked the certifications of slings and shackles to verify that proper capacity lifting devices were used.

No violations were identified. However, the inspector identified a safety concern regarding the use of the Unit 2 Reactor Building crane in conjunction with the Reactor Head Strongback. The licensee had noted during use of the Unit 2 Reactor Head Strongback that the strongback could contact the Reactor Building Crane support beams prior to actuation of the overtravel limit switch. Consequently, the licensee had informed all crane operators and had posted reminders in the Unit 2 Refuel Floor maintenance office. The inspector questioned this use of administrative controls in lieu of an automatic safety feature. ANSI B30.2 - 1976, "Overhead and Gantry Cranes," requires all electric travelling cranes to have an overtravel limit that will stop hoisting motion. The limit switch is tested periodically with an empty hook, as specified in ANSI B30.2. But with an empty hook, the crane support beams do not present an obstruction--the hook rises between the beams prior to the actuation of the overtravel limit. When the Reactor Head Strongback is lifted, the strongback can contact the beams, creating the equivalent of a two-blocked situation, before the overtravel limit actuates. The inspector stated that this is a hazardous condition and as such must be repaired before resumption of normal operation, as required by ANSI B30.2 and procedure MA-7. The inspector further noted that ANSI B30.2 (1) states that the overtravel limit shall actuate under all conditions in time to prevent contact between the load block and crane; and (2) defines "load block" as including any frame suspended by the hoisting rope. This matter is unresolved; the licensee committed to resolve this item prior to the next use of the Reactor Head Strongback (277/84-15-03).

The inspector reviewed a sampling of Item Handling Reports (IHRs). No inadequacies in procedurally specified documentation were noted. However, the inspector noted that proper selection of lifting devices requires a multi-step calculation involving load weight, a (variable) dynamic load factor, the number of lift points, the required safety factor for the lift, and the design safety factors of the rigging equipment. The calculation is not fully described in procedures nor is documentation on the IHR required, because the licensee considers the calculation a skill of the trade for a qualified rigging supervisor. On some completed IHRs reviewed by the inspector, the calculation had been written in. The inspector stated that including the calculation methods in

procedures and documentation would provide better assurance of proper rigging equipment selection; the licensee stated that the governing procedure, MA-7, was under review and this item would be considered (see Detail 13). The inspector checked a sampling of calculations and found no errors.

5. Maintenance

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

<u>Maintenance Procedure</u>	<u>Equipment</u>	<u>Date Observed</u>
M4.53	Reactor Head Detensioning	May 1-2
M4.52	Removal of the Reactor Vessel Head	April 30-May 3
SP703	Functional Test of Hydraulic Snubbers	May 22 & June 7

Administrative controls check included maintenance requests, blocking permits, fire watches and ignition source controls, item handling reports, snubber data package, and shift turnover information. Documents reviewed included procedures, material certifications and receipt inspections, welder qualifications and weld information data sheets. Regarding snubber testing, the inspector observed tests, interviewed workers and supervisors, and reviewed about 20 Unit 2 data packages to verify that once-per-cycle test requirements had been met. The inspector also reviewed the results of a Unit 3 visual inspection of snubbers in the drywell, discussed results with the licensee, and observed portions of re-testing of a snubber that failed visual inspection and required repair.

-- While observing reactor vessel disassembly on May 2, the inspector noted that the stud nuts were being removed after the completion of detensioning. M4.52, step 20 says the nuts should be removed and thread protectors installed during second pass detensioning of each nut. The inspector asked why the procedural guidance was not being followed. The licensee gave technical, personnel safety, and ALARA reasons why the current sequencing, which apparently has been used for several outages, is preferable to that listed in the procedures. The inspector acknowledged these reasons and the fact the procedure was technically not violated since it uses the word "should." However, the inspector expressed concern that the procedure had not been updated when a preferable method was found. The licensee stated that he is maintaining a list of procedure upgrade items to be completed before the next outage (see Detail 13).

- The licensee's visual inspection of Unit 3 snubbers in the drywell indicated that two had low hydraulic fluid levels. These were removed and functionally tested. Both failed functional testing and were therefore considered inoperable for the purpose of establishing the next inspection interval. The inspector noted that one of the two snubbers that was functionally tested had an uncovered fluid port. Therefore, per an NRR position memorandum dated July 29, 1980 and the Standard Technical Specifications, that snubber must be declared inoperable and a functional test could not have been used as proof of operability. The inspector informed the licensee of the NRC position. Also the inspector noted that the licensee's snubber inspection procedure, ST 9.15 (series), requires functional testing of any snubber low on fluid, but does not specify that a snubber with an uncovered fluid port must be considered inoperable. This matter is unresolved (277/84-15-04).

6. Radiation Protection

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

- Health Physics (HP) controls
- Badging
- Protective clothing use
- Adherence to RWP requirements
- Surveys

- Handling of potentially contaminated equipment and materials

More than 50 people observed met 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 2 outage. About 15 RWPs were checked during the month. Line entries were reviewed to verify that personnel had provided the required information and about 50 people working in RWP areas were observed to be meeting the applicable requirements.

On May 16, 1984, while the inspector was checking fire barrier seals in the Unit 2 Reactor Building 165-foot elevation, his fingers became slightly contaminated (and were then promptly decontaminated). The inspector identified to the licensee the areas he had touched, and it was determined that the fire barrier seals had loose surface contamination of 1700 disintegrations per minute per 100 square centimeters (dpm/100 cm²), 11,000 dpm/100 cm², and 23,000 dpm/100 cm², respectively. The area had not been posted as a loose surface contamination area. The licensee then posted the area. Other seals in the plant were checked and some were found contaminated. The fire barrier material is slightly porous and sticky and therefore can be expected to accumulate contamination.

Technical Specification 6.8 and Regulatory Guide 1.33 (November 1972) require implementation of procedures for control of radioactivity. Health Physics Procedure HPO/CO-100, Revision 13, April 25, 1983, Health Physics Guides Used in the Control of Exposure to Radioactive Material, requires "Contaminated Area" signs or a radiation tape barrier for areas with removable contamination above 1,000 dpm/100 cm². Failure to post a contaminated area is a Violation (277/84-15-05).

7. Physical Security

The inspector spot-checked compliance with the accepted Security Plan and implementing procedures, including: operations of the CAS and SAS, over 15 spot-checks of vehicles onsite to verify proper control, observation of protected area access control and badging procedures, inspection of physical barriers, checks on control of vital area access and escort procedures. No violations were identified.

8. TMI Action Plan (TAP) Items Followup--TAP II.K.3.28, Qualification of ADS Accumulators

The licensee completed modifications to provide a long-term, safety-grade ADS air supply. The inspector verified this in inspection 83-02, but, as of that inspection, NRC:NRR review had not been completed. The NRR review included a request for additional information (RAI), to which the licensee responded on June 2, 1983. By Safety Evaluation Report dated May 14, 1984, NRR accepted the licensee's response to this TAP item. The inspector reviewed the above-mentioned documents and verified selected items in the licensee's response to the RAI. No inconsistencies were noted. This item is closed.

9. Review of Licensee Event Reports (LERs)

9.1 In-office Review

The inspector reviewed LERs 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 LERs were reviewed:

<u>LER No./LER Date/ Event Date</u>	<u>Subject</u>
02-83-35 04/04/84 12/29/83	During testing one MSIV had slow closure time and was re-adjusted; redundant in-line isolation valve had proper closure time.
02-84-01 02/27/84 01/17/84	An RHR injection valve failed during testing and was subsequently repaired; redundant equipment was operable during repairs.

<u>LER No./LER Date/ Event Date</u>	<u>Subject</u>
*02-84-02 04-19/84 03/21/84	Automatic Initiation of Standby Gas Treatment System as a result of a failed relay.
*02-84-03 05/03/84 01/31/84	Reactor Vessel Heatup Rate exceeded 100 degrees Farenheit per hour.
02/84-05 04/19/84 03/23/84	Drywell sumps and instrument nitrogen isolated due to PCIS relay failure. Relay was replaced and re-tested. Relay service list is being evaluated.
02-84-07 04/27/84 04/3/84	RWCU system isolation due to blown fuse caused by workers. Fuse was replaced and entire work group reinstructed.
*02-84-08 05/29/84 04/27/84	SBGT System fan automatic start logic.
*03-84-02 05/03/84 01/24/84	Reactor Vessel Heatup Rate exceeded 100 degrees Farenheit per hour.
03-84-06 05/25/84 04/26/84	Two main steam line temperature sensors were loosened from duct by scaffolding; sensors were operable. Scaffold was removed and all other scaffolds in-plant were inspected (see Detail 3.1.9).

*Selected for on-site followup.

9.2 On-site Followup

For LERs 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.

9.2.1 LER 2-84-02 describes a wiring error during replacement of the 16A-K24A relay which was reported to have caused the CAD system to be inoperable. The inspector discussed the event with licensee personnel and obtained more information about the valves that were inoperable. The wiring error was due to a technician connecting the wrong leads to the terminals. This

caused A02523, A02510, SV8101 and A02514 to become inoperable. The error was discovered during PCIS checkout following repair of the original malfunction. The wiring error was corrected when found. The CAD system appears not to have been inoperable as reported. The inspector had no further questions.

9.2.2 LERs 2-84-03 and 3-84-02 had been revised to include the results of an engineering evaluation of the effects of the excess heatup rate on the reactor vessel. General Electric had concluded that the event imposed only a negligible increase in the usage factor for the most limiting reactor pressure vessel component (refueling containment skirt). The inspector reviewed the licensee's evaluation and has no further questions at this time.

9.2.3 LER 2-84-08 is discussed in Detail 3.2.2.

No violations were identified.

10. In-office Review of Monthly Operating Report

Peach Bottom Atomic Power Station Monthly Operating Report for April, dated May 14, 1984 was 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.

No violations were identified.

11. Unresolved Items

Unresolved items are items about which more information is required to ascertain whether they are acceptable, violations or deviations. Unresolved items are discussed in Details 3.2.1, 3.2.2, 4.4 and 5.

12. Inspector Follow Items

Inspector follow items are items for which the current inspection findings are acceptable, but due to on-going licensee work or special inspector interest in an area, are specifically noted for future followup. Followup is at the discretion of the inspector and regional management. An inspector follow item is discussed in Detail 3.2.2.

13. Areas for Improvement of Administrative and Management Controls

In several areas that were found acceptable during this inspection, some improvements seem appropriate to provide better assurance of continued safety and compliance. These items, which are summarized below, are in areas that

are reviewed during the routine inspection program. Reinspection of any specific item is at the discretion of the inspector and NRC regional management.

- Visibility of refuel floor fire equipment stations during refueling outages is poor (Detail 3.1.7).
- Refueling interlock test is unclear regarding Hold Point signatures and auxiliary hoist mechanical stops (Detail 4.1).
- Fuel handling procedure contains an incomplete description of a rod block feature (Detail 4.3).
- Procedure for Control of Heavy Loads does not fully describe, or require documentation for, load calculations (Detail 4.4).
- Reactor Head Disassembly procedure is misleading, at one point, with respect to the best sequence of activities (Detail 5).

14. Management Meetings

14.1 Preliminary Inspection Findings

A verbal summary of preliminary findings was provided to the Station Superintendent at the conclusion of the inspection. During the inspection, licensee management was periodically notified verbally of the preliminary findings by the resident inspectors. No written material was provided to the licensee during the inspection.

14.2 Attendance at Management Meetings Conducted by Region-Based Inspectors

The resident inspectors 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>
May 7 (Entrance) May 11 (Exit)	QA for U/2 pipe replacement	277/84-12	J. Prell
May 8 (Entrance) May 8 (Exit)	Whole body counting	277/84-16 278/84-14	J. Kotten
May 14 (Entrance) May 18 (Exit)	Maintenance	277/84-17 278/84-15	D. Limroth