U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket/Report No. 50-277/88-01
50-278/88-01

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 At: Delta, Pennsylvania

Dates: January 1 to February 5, 1988

Inspectors: T. P. Johnson, Senior Resident Inspector
R. J. Urban, Resident Inspector
L. E. Myers, Resident Inspector

Reviewed By: J. H. Williams — 2/19/88
J. H. Williams, Project Engineer — date

Approved By: J. C. Linville, Jr. — 2/19/88
J. C. Linville, Chief, Reactor Projects Section 2A, Division of Reactor Projects — date

Summary

Areas Inspected: Routine, on site regular and backshift resident inspection (167 hours Unit 2; 168 hours Unit 3) of accessible portions of Unit 2 and 3, operational safety, radiation protection, physical security, control room activities, licensee events, surveillance testing, refueling and outage activities, maintenance, and outstanding items.

Results: One violation for failure to follow respiratory protection procedures was identified (section 9.2). Preparations for Unit 2 "refuel" mode operation and hydrostatic test were generally good (section 4.4). However, a weakness was identified with respect to QA/QC review of open items to support refuel mode and hydrostatic testing preparations (section 4.4.4). One violation for failure to follow circulating water system operating procedures was identified by the licensee (section 4.2.1). This resulted in flooding a room. A special report for a liquid radioactive release was reviewed (section 5.0). Reactor vessel shroud access hole cover cracking is unresolved (section 4.5.1). An inattentive security watchman was identified by the licensee (section 10.5).

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DETAILS

1.0 Persons Contacted

J. B. Cotton, Superintendent, Operations
*T. E. Cribbe, Regulatory Engineer
*G. F. Daebeler, Superintendent, Technical
*A. B. Donnell, QA Supervisor
*J. F. Franz, Plant Manager
*D. P. LeQuia, Superintendent, Services
F. W. Polaski, Assistant Superintendent, Operations
*D. P. Potocik, Radiation Protection Manager
K. P. Powers, Peach Bottom Project Manager
G. R. Rainey, Superintendent, Maintenance
D. M. Smith, Vice President, Peach Bottom Atomic Power Station

Other licensee and contractor employees were also contacted.

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

2.0 Facility and Unit Status

2.1 Unit 2

The unit remained in a cold condition during the inspection period. Refueling outage recovery efforts and reactor vessel hydrostatic test no preparations continued during the period. Control rod testing in the refuel mode was completed.

2.2 Unit 3

The unit remained in a cold condition during the period. The pipe replacement outage, which began on October 1, 1987, continued. By the end of the inspection period, plant conditions for pipe removal were complete and pipe cutting activities were underway.

3.0 Previous Inspection Item Update

3.1 (Closed) Unresolved item (277/86-25-09). Documentation of SRV As-Found Setpoints. In accordance with the ASME Code, Section XI, IWV-3510, as-found testing of relief and safety valves is required. Any valve that failed would require additional valves to be tested in accordance with IWV-3513. This item was left unresolved pending licensee investigation to determine if as-found testing of SRVs had been performed in the past, whether they passed or failed, and to record these results in surveillance test (ST) procedure 13.32.

The inspector determined through discussions with a maintenance engineer that as-found testing had not been performed in the past (prior to 1987). To check for corrective actions, the inspector examined recent Wyle Laboratory reports, reviewed ST 13.32, "Safety and Relief Valve Replacement," Rev. 5A, (not yet PORC approved), and QCI-020, "Instruction for the Establishment of Quality Assurance Requirements in Procurement Documents," Rev. 2, 02/02/88.

Wyle Laboratory is now performing as-found testing of all relief and safety valves received from Peach Bottom. In addition, proposed revision (6) of ST 13.32 requires that the purchase order request as-found testing by Wyle Laboratory. It also contains a chart to record the as-found lift setpoints of removed SRVs and a formula to determine how many additional valves need to be tested if any fail. In addition, step 7.4 of QCI-020 requires that the purchase order request as found testing from the vendor.

Based upon the above information, this unresolved item is closed.

3.2 (Open) Unresolved Item (50-277/87-29-03; 50-278/87-29-03). Diesal Generator Lube Oil Fires in Exhaust Manifold. This item was left unresolved pending licensee determination of root cause, implementation of corrective actions and determination of reportability.

Since the last incident of an apparent fire in the E-2 diesel generator exhaust on December 29, 1987, none have occurred. The E-2 diesel generator has been tested five times and the inspector has observed four of these surveillance tests (see section 7.0). Lube oil leaking from the exhaust manifold as well as moderate smoking was observed. However, no fires were evident. This unresolved item remains open pending licensee and vendor evaluation.

4.0 Operations Review

4.1 Station Tours

The inspector observed plant operations during daily facility tours. Most accessible areas of the station were inspected.

4.1.1 Control Room and facility shift staffing was frequently checked for compliance with 10 CFR 50.54 and Technical Specifications. The presence of a senior licensed operator in the control room was verified frequently. Operator attentiveness to plant operations was determined to be adequate.

4.1.2 The inspector frequently observed that selected control room instrumentation and recorder traces confirmed that instruments were operable and indicated values were within Technical Specification requirements and normal operating limits. Engineered safety features system switch positioning and valve lineups were verified daily based on control room indicators and plant observations.

4.1.3 Selected control room off-normal alarms (annunciators) were discussed with control room operators and shift supervision to assure they were knowledgeable of alarm status, plant conditions, and that corrective action, if required, was being taken. In addition, the applicable alarm cards were checked for accuracy. The operators were knowledgeable of alarm status and plant conditions.

4.1.4 The inspector checked for fluid leaks by observing sump status, alarms, and pump-out rates; and discussed reactor coolant system leakage with licensee personnel.

4.1.5 Shift relief and turnover activities were monitored daily, including periodic backshift observations, to ensure compliance with administrative procedures and regulatory guidance. No inadequacies were identified.

4.1.6 The inspector observed the main stack and both reactor building ventilation stack radiation monitors and 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. No inadequacies were identified.

4.1.7 The inspector observed control room indications of fire detection instrumentation and fire suppression systems, monitored use of fire watches and ignition source controls, checked a sampling of fire barriers for integrity, and observed fire-fighting equipment stations. No inadequacies were identified.

4.1.8 The inspector observed overall facility housekeeping conditions, including control of combustibles, loose trash and debris. Cleanup was checked during and after maintenance. Plant housekeeping was generally acceptable.

4.1.9 The inspector observed the nuclear instrumentation subsystems (source range, intermediate range and power range monitors) and the reactor protection system (RPS) to verify that the required channels were operable.

During a plant tour on January 10, 1988, the inspector noted that Quality Control (QC) non-conformance report (NCR) tags were hanging on two of the three Unit 2 reactor protection system (RPS) power supply panels (2BC757 and 2CC757) in the 4 KV switchgear rooms. QC NCR tags #CD-P-986-1 through 4 dated January 6, 1988, documented a problem with the Brown-Boveri Corporation (BBC) undervoltage (UV) relays.

The inspector proceeded to the control room to pursue the operability of the RPS for Unit 2. Unit 2 was in the cold shutdown condition with the reactor mode switch in the shutdown position. Technical Specification (TS) 3.1 requires the RPS function (including the power supply panels system) to be operable while in the refuel, startup or run modes. Thus, the RPS was not required to be operable in shutdown mode. However, control room licensed personnel were not aware of the NCR on the RPS. No documentation (e.g., LCO log, MRF log, equipment status log, plant status report, shift turnover information, operator's log, etc.) could be found for the apparent RPS problem (except for the NCR tag).

On January 11, 1988, the inspector questioned QC personnel regarding the NCR. Apparently a 10 CFR Part 21 report had been made by BBC regarding UV relays on December 23, 1987. This was in response to a licensee concern of a relay failure at Limerick on June 11, 1987 (LER-87-012). Electrical engineering had notified construction QC of the concern, and QC issued an NCR in accordance with procedure ERDP-15.1, "Procedure for Handling Nonconformances", Rev. 12. Construction QC rather than Operations QC had been notified because the RPS power supply panels were being changed per Modification #1916. However, at that time the RPS panels were turned over to operations in preparation for hydrostatic testing (including placing the mode switch refuel). Apparently, ERDP-15.1 doesn't require a notification of operations when NCRs are identified. The licensee stated that procedure QADP-9.1, "QC Procedures for Control of Nonconformances", Rev. 2, does require operations notification.

The inspector reviewed the associated documentation including the LER, BBC and licensee letters, TS 3.1, GP-11C (RPS Refuel Mode Operation), the QC NCRs, and plant operations review committee (PORC) minutes. The inspector determined that the UV relay problem occurs when DC control power is reapplied to the RPS panels. The result is a false trip signal causing the UV relay to trip,

thus opening the RPS power supply breakers. Thus, it is a fail safe condition (RPS de-energizes), which occurs only when the DC control power is reapplied after being deenergized.

The licensee is initiating corrective action to replace these UV relays. This condition apparently does not make RPS inoperable. Repairs are scheduled prior to plant startup.

The inspector expressed concern that operations and control room personnel were unaware of an NCR on safety related equipment. The licensee stated that they agreed with the inspector's concern. Normally operations QC NCRs are documented per procedure QADP-9.1 which includes operations notification for an equipment operability determination. In this case, construction QC issued the NCRs because of RPS modification activity. The inspector stated that the licensee should make the two NCR procedures consistent. The licensee agreed and stated that the new proposed reorganization of QA would include a consolidation of procedures. This item will be reviewed in a future inspection (see also section 4.4.4).

No violations were noted.

4.1.10 The inspector frequently verified that the required off site electrical power startup sources and emergency on site diesel generators were operable.

4.1.11 The inspector monitored the frequency of in-plant and control room tours by plant and corporate management. The tours were generally adequate.

4.1.12 The inspector verified on a weekly basis, the operability of selected safety related equipment and systems by in-plant checks of valve positioning, control of locked valves, power supply availability, operating procedures, plant drawings, instrumentation and breaker positioning. Selected major components were visually inspected for leakage, proper lubrication, cooling water supply, operating air supply, and general conditions. No significant piping vibration was detected. The inspector reviewed selected blocking permits (tagouts) for conformance with licensee procedures. No inadequacies were identified.

4.1.13 The inspectors performed backshift and weekend tours of the facility on the following days: Sunday, January 10, 1988, 7:00 a.m. - 1:00 p.m.; Saturday, January 16, 1988, 7:00 a.m. - 12:00 Noon; Friday, January 22, 1988, 2:00 a.m. - 6:00 a.m.; Sunday, January 24, 1988, 3:00 a.m. - 7:45 a.m.

4.1.14 The inspectors verified that the licensee's use of overtime was consistent with regulatory requirements and administrative procedure A-40, "Working Hour Restrictions."

4.1.15 The inspector verified that the QC shift inspectors were performing periodic control room tours.

4.2 Followup On Events Occurring During the Inspection

4.2.1 Unit 2 Condensate Pump Pit Room Flood on January 14, 1988

On January 14, 1988, at 10:50 p.m., the 2C circulating water pump was started in accordance with system operating procedure S.9.2.A. At 11:14 p.m., Unit 2 turbine building floor and drain sump high level alarms actuated. A plant operator was dispatched to investigate. He reported that there was about 18 inches of water in the condensate pump pit room. The 2C circulating water pump was immediately removed from service (about 11:20 p.m.). The shift manager inspected the area with health physics personnel. No increase in radiation or contamination levels as noted. The licensee began cleanup of the water and the room. The water in the room was pumped to and processed by the radioactive waste systems.

The licensee's investigation determined that when the 2C circulating water pump was started, water leaked through a partially open six inch condenser water box vent valve (A2 manual gate valve). A review of check off list (COL) S.9.2.A noted that the valve position was denoted as being "partially open" and "valve won't fully close on equipment trouble tag (ETT) #013914". The reference to the ETT (equipment trouble tag) was reviewed. A maintenance request form (MRF) #3-28-M87-7309 was written on September 3, 1987, identifying the problem with this vent valve. MRF investigation determined that the problem did not exist. The MRF was subsequently cancelled.

The licensee identified two concerns:

(1) The circulating water system was placed in service with a known and documented valve out of position (COL S.9.2.A).

(2) The investigation of MRF 3-28-M87-7309 was inadequate as the identified problem was apparently not confirmed.

The inspector learned of this event during a control room tour at about 7:00 a.m., on January 15, 1988. The inspector reviewed the licensee's investigation, COL S.9.2.A, the MRF, the ETT, control room logs and procedure S.9.2.A. In addition, the inspector toured the Unit 2 condensate pump pit room at 8:00 a.m., and noted that there was about six inches of water on the floor. No water damage to any electrical equipment was noted. The inspector also attended the 8:30 a.m. morning management meeting in the control room. This event was discussed and reviewed by plant management at this meeting.

The inspector examined the 2A water box vent valve and confirmed that the valve was partially open. Verification was by valve stem position and by remote indicator position. ETT #013914 was also verified to be attached to the valve operating handwheel.

The inspector discussed the event with control room personnel including the shift supervisor. The shift supervisor signed off COL S.9.2.A in the "as reviewed by" blank. The shift supervisor stated that he had noted the valve was out of position. He also stated that he subsequently got involved in a Unit 3 evolution to run a reactor recirculation water pump. This apparently distracted him from the Unit 2 circulating water COL abnormality.

Technical Specification (TS) section 6.8.1 requires that written procedures be established, implemented, and maintained that meet the requirements of sections 5.1 and 5.3 of ANSI N18.7-1972, and Appendix A of Regulatory Guide 1.33 (November 1972). Regulatory Guide 1.33 (November 1972) Appendix A, section D, requires operating procedures for circulating water systems. Procedure S.9.2.A, "Placing Circulating Water System in Normal Operation," Rev. 2, requires that COL S.9.2.A be performed prior starting any circulating water pumps. However, the A2 water box inlet valve was open rather than in the closed position as required by COL S.9.2.A.

This out of position valve resulted in the flooding of the Unit 2 condensate pump pit room. Failure to follow procedure S.9.2.A and COL S.9.2.A is a violation of TS 6.8.1 (277/88-01-01).

However, since the violation was licensee identified and the criteria of 10 CFR 2, Appendix C are met, no Notice of Violation is being issued. In addition, no major equipment damage occurred, no misoperation of safety related equipment occurred, and no spill of radioactive water occurred. However, the inspector expressed concern over the apparent inattention to detail.

The inspector also discussed the event, including his concerns with licensee management. Licensee corrective actions included:

-- review of the event by the Human Performance Evaluation System,
-- cleanup of water and pump room,
-- repair of the valve,
-- discussions with the shift supervisor,
-- attempting to identifying the engineer who investigated the MRF.

The inspector reviewed the corrective actions, discussed them with management and had no further questions at this time.

4.2.2 Unit 3 Reactor Protection System (RPS) Scram Signal on January 19, 1988

At approximately 9:15 p.m. on January 19, 1988, Unit 3 received a scram header low air pressure alarm in the control room. The instrument air line upstream of the scram valve pilot air isolation valve (116) for control rod hydraulic control unit (HCU) 14-47 became disengaged at the swagelock fitting. To isolate the leak, the air header was isolated, thereby allowing the entire HCU bank to bleed down. The scram inlet and outlet valves for forty HCUs opened (the others were blocked for maintenance) allowing reactor water to drain into the scram discharge volume. This resulted in a scram discharge volume high water level (50 gallon) scram signal. However, no actual scram occurred because portions of the RPS were defeated while the Unit 3 core is off loaded. All control rods were fully inserted and no rod motion occurred. The air leak was repaired and the affected HCUs were returned to normal. The licensee made a four hour ENS call at 10:50 p.m.

The inspector reviewed the licensee's investigation, control room logs and the upset report. The event was also discussed with licensee engineers and operators. The licensee intends to submit an LER for this event. The LER will be reviewed in a future inspection. No violations were noted.

4.2.3 Unit 2 Group III Isolation on January 20, 1988

At 10:50 a.m., on January 20, 1988, a partial group III containment ventilation isolation occurred on Unit 2. The cause of the isolation was a nameplate screw that became dislodged, fell into a control room panel, and caused an indicating light to electrically short. This caused a fuse to blow in the containment logic resulting in de-energization of several containment valve solenoids. No valve movement occurred as the valves were already closed. The licensee retrieved the screw, replaced the fuse and inspected the panels for damage. No damage was found. A four hour ENS call was made at 1:30 p.m. Unit 2 was in cold shutdown with reactor coolant temperature at about 150 degrees F at the time of the isolation signal.

The inspector reviewed the licensee's investigation, reviewed control room logs, interviewed personnel and examined the control room panels. The licensee intends to submit an LER, and the inspector will review it in a future inspection. No violations were noted.

4.3 Logs and Records

The inspector reviewed logs and records for accuracy, completeness, abnormal conditions, significant operating changes and trends, required entries, correct equipment and lock-out status, jumper log validity, conformance with Limiting Conditions for Operations, and proper reporting. The following logs and records were reviewed: Control Room Shift Supervisor Log, Reactor Engineering Logs, Unit 2 Reactor Operator Log, Unit 3 Reactor Operator Log, Control Operator Log Book and STA Log Book, QC Shift Monitor Log, Radiation Work Permits, Locked Valve Log, Maintenance Request Forms, Temporary Circuit Modification Log, and Ignition Source Control Checklists. Control Room logs were compared with 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.

4.4 Unit 2 Refueling Outage Recovery Activities

In preparation for the Unit 2 reactor pressure vessel hydrostatic test (RPV hydro), the inspectors reviewed plant system operability, procedures, PORC activities, training and QA/QC activities. The following sections discuss areas reviewed during this report period.

4.4.1 Emergency Service Water (ESW) System

The ESW system provides cooling water to the diesel generators and to emergency core cooling system (ECCS) room coolers in the event of a loss of normal service water.

Peach Bottom has had a recent history of corrosion and fouling problems in ESW system carbon steel pipes. As a result, reduced flow rates began to occur, especially in the core spray room coolers. In an attempt to alleviate the problem, hydrolazing and chemical injection were performed in late 1985 and early 1986; however, only minimal success was obtained.

During the Unit 2 1987 refueling outage, monthly surveillance test (ST) 21.5-2, "ESW Flow Test Through ECCS Room Coolers, RHR Seal Coolers and Core Spray Motor Oil Coolers - Unit 2," failed to completely pass. Core spray room cooler 2CE57 failed to meet the minimum acceptance criteria of 13 GPM, and other core spray room coolers were close to being unacceptable. In response, the licensee initiated a safety evaluation to allow for a temporary reduction in allowable ESW flow rates to the core spray room coolers.

In late December 1987, during core spray pump testing, a test engineer noted that the 2D core spray pump motor was running hotter than the others. Upon further investigation, the licensee found that ESW flow to the motor oil cooler was extremely low. To correct the problem the 3/4" supply and return lines to the motor oil cooler were replaced in January 1988, when it was found to be fouled with mineral deposits.

To determine ESW system readiness for the RPV hydro, the inspector spoke with the system engineer and reviewed the safety evaluation, recent surveillance tests, the ESW P&ID, and observed maintenance activities to replace ESW motor oil cooler piping.

Core spray room cooler operability is necessary so that the core spray system can be declared operable to support the performance of the RPV hydro. The safety evaluation dated November 24, 1987, reduced the minimum acceptable ESW flow rates to all core spray room coolers from 13 GPM to 8 GPM. Licensee analysis determined that at 8 GPM with 71 degree F water, core spray room temperatures can be maintained below the limit of 126 degrees F. The analysis is valid only during November through mid-April when the highest river water temperature recorded from 1970 to 1986 was 71 degrees F; the actual highest monthly average temperature during this time frame was 61 degrees F. Also, the analysis is only valid for the performance of the RPV hydro, and the flow rates will be returned to acceptable values prior to Unit 2 restart.

The inspector found the safety evaluation to be acceptable based on the following facts:

-- ESW flow rates to core spray room coolers will be returned to acceptable values prior to Unit 2 startup;

-- The temporary ESW flow rate reduction is only valid for the RPV hydro during unit shutdown;

-- Current river water temperatures are far less than 71 degrees F and the RPV hydro will be complete before mid-April;

-- Decay heat removal requirements are minimal at this time;

-- Only one of two room coolers need to be operable to declare the core spray pump operable; and

-- At least one of the two room coolers in each core spray room has a flow rate greater than 13 GPM.

Through discussions with the system engineer, the inspector was informed of future plans for the ESW system. Before Unit 2 restart, selected ESW piping will be replaced so that adequate flow is restored.

Improvements in the ESW pipe replacement modification will be the use of pickled carbon steel pipe, clean out traps, spool pieces, plug valves with taps, and a redesigned system to reduce stagnant water in the piping. Pickled carbon steel piping should reduce mineral deposits and resist corrosion better than

non-pickled carbon steel piping. Clean out traps and spool pieces will allow for visual inspection and improved hydrolazing. Plug valves with taps will provide improved flow measurement capabilities and system flow balancing techniques. Eliminating stagnant water will reduce mineral deposition and corrosion as will the continued use of chemical injection.

The inspector reviewed the performance of ST 21.5-2, which was conducted on 1/19/88 and 1/21/88. Flow rates in at least one of the two room coolers in each of the four core spray rooms was greater than the original minimum acceptance criteria of 13 GPM and the flowrate to all the room coolers was greater than the new acceptance criteria of 8 GPM. However, the flow rate to cooler DE58 in the C RHR pump room failed to meet the minimum acceptance criteria of 30 GPM.

To resolve the problem, the licensee updated the November 24, 1987, ESW flowrate safety evaluation to temporarily reduce ESW flow to the RHR room coolers. The inspector reviewed Rev. 2 of the ESW safety evaluation dated January 22, 1988. ESW flow to the RHR room coolers has been temporarily reduced from 30 GPM to 15 GPM. Licensee calculations determined that this reduced flowrate with colder river water (less than 71 degrees F) would maintain the room temperature less than 128 degrees F during a design basis accident (maximum acceptable room temperature limit). The inspector determined the safety evaluation to be acceptable based on the same reasons cited earlier in this section.

The inspector had no further questions or concerns regarding ESW system operability for the Unit 2 hydro. No violations were noted.

4.4.2 Main Steam Relief and Safety Valves

The purpose of the main steam relief and safety valves is to prevent over-pressurization of the nuclear system, thereby protecting the process barrier from failure.

For the review, the inspector spoke with maintenance and test engineers, and examined surveillance test (ST) procedures, Technical Specifications (TS), Wyle Laboratory Test Reports, and Section XI of the ASME Code.

The inspector reviewed ST 13.32, "Safety and Relief Valve Replacement," Rev. 5, dated 12/9/86. ST 13.32 requires replacing at least five relief valves and one safety valve each operating cycle, with the intent that all valves be replaced every two cycles. This ST is in agreement with TS 4.6.D.1 and is also more conservative than the ASME Code, Section XI. However, ST 13.32 had not been revised since an unresolved item was opened pertaining to recording as found lift settings in the ST (see section 3.1). The inspector questioned licensee engineers regarding the revision to ST 13.32. The ST had been revised and it was ready to go to the PORC for final approval.

The inspector obtained a preliminary copy of Rev. 6 to ST 13.32. The as found lift pressures will be recorded on the data sheet for all future tests. However, the inspector noted that the intent of TS 4.6.D.1 had been lost in proposed revision 6. The inspector brought his concern to the attention of a maintenance engineer. The procedure was revised and the inspector had no further concerns or questions on ST 13.32. The inspector will review the procedure again after PORC approval.

The inspector examined ST 13.32, Rev. 5, that was performed on November 19, 1987. During the current refueling outage, five relief valves and one safety valve were removed and shipped to Wyle Laboratory for as found testing, refurbishment, and as left testing certification. One relief valve and one safety valve failed their respective as found lift tests. Relief valve #22 lifted at 1124 psig instead of 1105 ± 11 psig and safety valve BL 1104 lifted at 1183 psig instead of 1230 ± 12 psig. In accordance with the ASME Code, Section XI, Subsection IWV-3513, one additional relief valve and one additional safety valve were selected for testing. They both passed their respective as found lift tests and no further actions were required.

To ensure relief valve operability for the automatic depressurization system (ADS), ST 20.131, "LLRT-ADS Accumulator Check Valve and Solenoid Valve Functional," Rev. 4, 7/17/87, is performed once per cycle. The inspector reviewed ST 20.131 performed on the following dates: 11/18/87; 12/02/87; 12/29/87; 01/07/88; and 01/11/88. At this point the licensee had determined that the A,B,G and K ADS relief valves were satisfactory. However, upon review of the 01/11/88 performance of ST 20.131, the inspector noted that the A ADS relief valve met only one of two acceptance criteria. The inspector questioned a test engineer

concerning this anomaly, because if the relief valve passed one acceptance criterion, it had to pass the other acceptance criterion. The test engineer determined that a conversion factor to obtain one of the two acceptance criteria was incorrect. The valve had actually passed ST 20.131, but was not recorded as such on paper.

For corrective measures, ST 20.131 was revised to correct the acceptance criterion and the A ADS relief valve was retested on 2/2/88. The inspector reviewed the test results and Rev. 3 of ST 20.131. The inspector found no further problems and had no additional questions or concerns.

To complete leak testing on all the ADS relief valves, the C ADS relief valve needs its check valve replaced; it then needs to successfully pass ST 20.131. The inspector will review the test results prior to the RPV hydro.

To declare the ADS relief valves and the other relief valves operable for the RPV hydro, ST 13.28, "ADS Relief Valve Solenoid Valve Functional," Rev. 2, 07/07/87, needs to be performed. The inspector will also review these test results prior to RPV hydro.

No violations were identified.

4.4.3 Procedures, Training, and Plant Operations Review Committee (PORC)

The inspector reviewed the following documents that support licensee actions for the preparation for Unit 2 hydrostatic test:

-- SP 1046, "Plant Conditions Necessary to Perform RPV Hydro," Rev. 0, 12/17/87.
-- GP-11C, "Reactor Protection System Refuel Mode Operation," Rev. 3, 12/24/87.
-- GP-10-2, "RPV Operational Hydrostatic Test Procedure," Rev. 16, 01/25/88.
-- LOR-8704, 1987 Operator Requalification Lecture Series Lesson Plan, Rev. 0.

The inspector attended PORC meetings as follows:

-- PORC meeting #88-004 on 01/07/88
-- PORC meeting #88-008 on 01/20/88
-- PORC meeting #88-010 on 01/25/88.

The meetings were conducted in accordance with Technical Specification 6.5.1 and administrative procedure A-4.

The inspector also verified that training on all applicable Unit 2 modifications was performed by reviewing training records and questioning licensed operators.

No unacceptable conditions were noted.

4.4.4 Quality Assurance/ Quality Control (QA/QC) Activities to Support Vessel Hydro

The inspector reviewed QA/QC activities in order to support placing the reactor mode switch in refuel and vessel hydrostatic test. In section 4.1.9 of this report, the inspector noted that a construction QC nonconformance (NCR) tag was applied to the RPS power supply panel UV relay without the knowledge of operations personnel. In further followup to this concern, the inspector reviewed in detail the QA/QC activities to verify that Unit 2 was ready for the refuel mode, and for subsequent hydrostatic testing.

The inspector questioned QA and QC personnel regarding open items (e.g., QA audit findings, stop work orders, QC NCRs, QA deficiencies, and other conditions adverse to quality) that may impact Unit 2 major milestones in general, and refuel mode and hydrostatic testing in specific. The licensee has a Quality Assurance Trending and Tracking (QATTS) computer listing of all these open items. However, their potential affect on refuel mode and hydrostatic tests could not initially be determined. QATTS only identifies open items that affect plant startup. QA and QC personnel had no plans to perform an independent review of open items for potential impact on refuel mode and hydrostatic test operations.

General procedure (GP)-11C, "Reactor Protection System Refuel Mode Operation" and special procedure (SP)-1046, "Plant Conditions Necessary to Perform RPV Hydro", delineate the requirements for system operability, open maintenance items, surveillance testing, completion of modifications, etc. These items were reviewed by the inspector (see section 4.4.3). However, there were no requirements for QA/QC to perform an independent review of these items and no requirement to perform a review of QA/QC open items. This is a weakness. The inspector

discussed this weakness with QA and QC personnel, and licensee QA and plant management. The licensee acknowledged this concern. An independent search of QATTS was performed, and no new potentially adverse items were found that could affect refuel mode or hydrostatic test. The licensee further stated that a review of QA procedures, the QA Plan and QA practices would be performed during the implementation of the proposed new QA organization.

No violations were noted.

4.5 Unit 3 Pipe Replacement Refueling Activities

4.5.1 Unit 3 Shroud Access Hole Cover Cracking

On January 21, 1988, the licensee identified cracks in each of the two reactor vessel core support structure access hole covers on Unit 3. These 20.5 inch diameter by 5/8 inch thick covers seal construction access holes in the shroud support ledge, which is at the bottom of the annulus between the core shroud and the vessel wall. The covers and the shroud support ledge are Inconel Alloy 600 material; the connecting weld is also Inconel (Alloy 182 or 82). The creviced geometry of the weld indicates the presence of an intergranular stress corrosion cracking (IGSCC) susceptible condition. The welds were volumetrically examined using a custom ultrasonic test (UT) fixture developed by the vessel manufacturer (GE). Intermittent short cracks were found in the weld heat-affected zone around the entire circumference of the covers. It is estimated that cracking exists over 50% to 60% of the circumference with cusps as deep as 70% through wall. These welds have not previously been examined and this cracking may represent a generic concern for certain vessel types.

The licensee evaluated the postulated failure of the access cover. Three initial concerns were raised.

-- Loose Part - In the event of complete failure of the access cover weld during normal reactor operation, the slightly higher bottom head area pressure would lift the cover out of its recess. It would most likely fall to one side, but there is a potential for it to be swept into the recirculation pump suction line and cause severe pump damage.

-- Core Flow Bypass (Normal Operation) - Loss of one or both cover plates would allow some recirculation system flow to bypass the core, from the jet pump discharge through the open access hole to the recirculation pump suction.

-- Core Flow Bypass (LOCA) - If the access hole cover plate welds were to fail as a direct consequence of a recirculation suction line break, the bypass path would prevent the emergency core cooling system from reflooding the core to the 2/3 level.

The inspector reviewed the licensee's initial evaluation dated January 26, 1988, and plant drawings of the access cover. The inspector also discussed this condition, and various safety concerns that are pertinent to both Unit 3 and Unit 2 with licensee engineers. Pending licensee (and vendor) evaluation including corrective actions, and subsequent NRC review, the cracked access covers are unresolved on both units (UNR 277/88-01-02; 278/88-01-02).

4.5.2 Unit 3 Drywell Inspection

On January 20, 1988, the inspectors toured the Unit 3 drywell. Items inspected included: work in progress, health physics controls, housekeeping and cleanliness, high radiation and high airborne area postings, and ALARA practices. Overall housekeeping and cleanliness was satisfactory. However, tne inspectors noted a considerable amount of recent graffitti (as compared to the last Unit 3 drywell inspector tour) in the drywell. The inspector informed licensee engineers and management of this observation. The licensee initiated action to remove the graffitti, and to inform workers that this type of activity was unacceptable behavior. The inspectors will continue to periodically inspect the drywell during the outage. No violations were noted.

4.5.3 Plant Conditions to Support the Unit 3 Outage

The licensee has written and approved a number of special procedures (SP) to control and implement the necessary plant conditions for the Unit 3 pipe replacement activities. This includes SP-1060B, "Overall Coordination Procedure for Recirculation Pipe Replacement," Rev. 0, 01/14/88.

The inspector reviewed this procedure and selected temporary changes, independently verified the implementation of selected steps, and discussed the procedure with licensee engineers and operations.

No unacceptable conditions were noted.

4.5.4 Unit 3 Decontamination Results

The licensee completed the chemical decontamination of Unit 3 reactor recirculation piping and the reactor water cleanup system the first week of January 1988. The low oxide metal ion method was used, (LOMI technique) followed by nitric-permanganate, and then completed with LOMI. As previously described in NRC Inspection Report 278/87-24, this method was thought to be effective in reducing the difficult to remove chromate oxides. In September 1987 this method was used on recirculation pump A between the discharge and suction valves. The results indicated that the method was effective in reducing contamination and in lowering the radiation levels in the general area of the pump; so the method was used for the system. After chemical decontamination was completed, the pumps were run briefly to determine if further reduction of exposure rates would occur.

The results indicate the method reduced general exposure levels by a factor of 2.7 in the overall areas of the RWCU system and contact levels by a factor of 7.4. The recirculation system piping exposure levels were reduced by a factor 3.7 and contact by 14.7. The actual expenditure of man-rem to do the decontamination was 30.1 compared to the estimate of 39.0. The results of recirculation pump B impeller housing decontamination were not as effective as they were for the A pump.

The inspector reviewed the decontamination procedures, observed in-plant activities, and reviewed the licensee report of results. No unacceptable conditions were identified.

4.6 Engineered Safeguards Features (ESF) System Walkdown

The inspector performed a detailed walkdown of portions of the Residual Heat Removal (RHR) system in order to independently verify the operability of the Unit 2 system. The RHR walkdown included verification of the following items:

-- Inspection of system equipment conditions.

-- Confirmation that the system check-off-list (COL) and operating procedures are consistent with plant drawings.

-- Verification that system valves, breakers, and switches are properly aligned.

-- Verification that instrumentation is properly valved in and operable.

-- Verification that valves required to be locked have appropriate locking devices.

-- Verification that control room switches, indications and controls are satisfactory.

-- Verification that surveillance test procedures properly implement the Technical Specifications surveillance requirements.

No unacceptable conditions were noted.

4.7 Cold Weather Preparations

In combined inspection report 50-277/87-02; 50-278/87-02, the inspector reviewed the licensee's cold weather preparation program. In that report problems were noted concerning the timely completion of routine test (RT) 6.0, "Winterizing Procedure," Rev. 2, dated 11/15/82. The delay was attributed to RT 6.0 being misplaced after it was submitted to typing for a revision. Inspector followup was to be performed in a future inspection.

For this review, the inspector examined RT 6.0 (Rev. 3, dated 02/18/87), spoke with maintenance personnel, and during a cold spell, walked down tanks and structures that would be susceptible to freezing.

RT 6.0 was started on September 30, 1987. The procedure was entirely complete except for repairs to three outer screen heaters and a trash rake. To compensate for the inoperable heaters, portable electric heaters were placed in service to help prevent freezing. A maintenance engineer stated that the three heaters would probably not be repaired until after winter because all heaters would be out of service if a blocking permit was applied.

The maintenance engineer stated that there were only three minor instances of freeze related problems that were brought to his attention. One was a drain line for the neutralizing tank in the water plant, the second was a chlorination line at the circulating water structure, and the third was general freezing problems at the outer screen structure before the portable electric heaters were installed.

The inspector toured exterior structures and tanks to spot check conformance with RT 6.0, and to inspect these areas for freezing problems. The inspector did not observe any serious freezing problems during the tour. However, the inspector noticed some ice built up inside 6 of 31 travelling water screens at the outer structure. The screens were continually running, deicing air was operating, and the ice build-up was not interfering with the

screen. As a precaution, the licensee placed a portable heater on the most severely iced travelling screen. The inspector had no further concerns in this area.

Modification 84-170 removed ten deicing air spargers instead of repairing them after they were damaged. Blank flanges were installed and the isolation valves were closed. The inspector noticed unusual blocking tags used on these closed isolation valves. The maintenance engineer stated that he had also questioned the use of these tags. The licensee removed these tags and replaced them with operator aid tags. The inspector had no further questions.

The inspector concluded that adequate protective measures for freeze protection were taken. Most freeze protection devices were in service (steam heating space heaters, deicing air and heat trace). No violations were noted.

5.0 Special Report On Radioactive Release

The licensee made a special report regarding a December 16, 1987, release of liquid radioactive waste from the "B" laundry drain tank. Technical Specification (TS) 3.8.B.4 requires that liquid radioactive waste be treated by one of three filters and/or demineralizers when the monthly average dose exceeds a value of 0.12 mrem. Since this value was exceeded by the release, the TS requires a special report within 30 days, explaining why the effluent was not treated, the action taken to restore the filters and demineralizers to service, and corrective actions taken to prevent recurrence.

The inspector reviewed this special report dated January 11, 1988, and procedure HPO/CO-18, "Processing Liquid Radioactive Waste." The inspector also discussed this event and the report with cognizant licensee personnel. The liquid effluent was contaminated with urea from the winter of 1986-1987. The urea had been used by the licensee as an ice melting agent on the plant yard during the winter to prevent injuries. The urea was tracked into the plant on workers shoes and contaminated the mop water used in contaminated areas. The mop water activity was 7.4 E-10 microcuries per milliliter. The effluent was being held in the laundry drain tank where it was sampled for radioactive materials, other possible contaminants, and water quality. The procedure referenced TS 3.8.B.4 quantities but did not clearly specify that a TS variance would result in entry into a TS. In addition, the procedure form did not sensitize the chemical technician and his supervisor that a TS would result from a variance. The effluent was released after the chemical supervisor obtained a signoff from the shift supervisor on the variance. The water was treated through a similar filter as required by TS. However, this is not the same filter as specified. The TS identified filter cannot be cross connected to the laundry drain tank. The licensee

has submitted a TS change to add the laundry waste drain tank filter to the TS 3.8.B.4 filter list. However, this TS change was not approved prior to the release.

The licensee's immediate corrective actions were to revise procedure HPO/CO-18 to clarify the TS requirements for a release variance. Other actions were to counsel and train the chemical technicians and supervisors on the consequences of a TS release-variance.

The inspector had no further questions regarding the special report. No violations were identified.

6.0 Review of Licensee Event Reports (LERs)

6.1 LER Review

The inspector reviewed LERs submitted to the NRC 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 on site followup. The following LERs were reviewed:

LER No. LER Date Event Date	Subject
2-87-11, Rev. 01 December 31, 1987 September 29, 1987	Unit 2 HPCI Inoperability
*2-87-25 January 4, 1988 December 2, 1987	Unit 2 Partial Group III Containment Isolation
*2-87-26 January 5, 1988 December 6, 1987	Unit 2 Shutdown Scram and Group II/III Containment Isolation
*2-87-29 January 25, 1988 December 21, 1987	Unit 2 Group III Containment Isolation
*3-87-11 December 29, 1987 November 29, 1987	Unit 3 Partial Group II Containment Isolation

6.2 LER Followup

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

6.2.1 LER 2-87-25 concerns a Unit 2 partial Group III containment isolation on December 2, 1987. The licensee determined root cause to be personnel error during modification acceptance testing. The event was reviewed in NRC Inspection 277/87-29; 278/87-29. No inadequacies were noted relative to this LER.

6.2.2 LER 2-87-26 concerns a Unit 2 shutdown scram signal and Group II/III containment isolation signal on December 6, 1987, during instrument surveillance testing. The root cause was determined to be a leaky instrument root valve. The event was reviewed in NRC Inspection 277/87-29, 278/87-29. No inadequacies were noted relative to this LER.

6.2.3 LER 2-87-29 concerns a Unit 2 Group III containment isolation on December 21, 1987. The root cause was personnel error (a non-licensed operator pulled the wrong fuse during blocking). The event was reviewed during NRC Inspection 277/87-29, 278/87-29. No inadequacies were noted relative to this LER.

6.2.4 LER 3-87-11 concerns a Unit 3 Group II (RWCU) isolation on November 29, 1987. The root cause was a procedural deficiency associated with the Unit 3 pipe decontamination. The event was reviewed during NRC Inspection 277/87-29, 278/87-29. No inadequacies were noted relative to this LER.

7.0 Surveillance Testing

The inspector observed surveillance tests to verify that testing had been properly scheduled, 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 10.8, "CRD Exercise Test," Rev. 11, performed on Unit 2 on February 1, 1988.

-- ST 6.10-2, "HPSW Pump and Valve Operability and Flow Rate Test - Unit 2 Only," Rev. 7, 2/12/87, performed on January 22, 1988.

-- ST 8.1, "Diesel Generator Full Load Test," Rev. 28, 1/12/88, performed on: E-1, December 30, 1987 and January 4, 1988; E-2, January 8, 19 and 28, and February 5, 1988.

In addition, a review of the following completed surveillance tests was performed:

-- ST 15.61A-2, "Calibration Test of HPCI Pump Room Smoke Detectors," Rev. 0, 7/6/82 performed on Unit 2 on January 21, 1988.

-- STs identified in section 4.4 and 4.4.2.

No inadequacies were identified.

8.0 Maintenance Activities

The inspectors reviewed administrative controls and associated documentation, and observed portions of work on the following maintenance activities:

Document	Equipment	Date Observed
MRF 87-11304	2D Core Spray Motor Oil Cooler	January 5, 1988
MRF 87-11237 thru 87-11240	Diesel Generator Fire Doors	January 19, 1988

Administrative controls checked, if appropriate, included blocking permits, fire watches and ignition source controls, QA/QC involvement, radiological controls, plant conditions, Technical Specification LCOs, equipment alignment and turnover information, post maintenance testing and reportability. Documents reviewed, if appropriate, included maintenance procedures (M), maintenance request forms (MRF), item handling reports, radiation work permits (RWP), material certifications, and receipt inspections.

In addition, a review of the following completed maintenance procedures was performed:

-- M1.1 "Main Steam 6" RV-70 A and B Safety Valve Replacement," Rev. 6, 2/10/87, performed March 1987.

-- M1.6, 'Main Steam 6" x 10" RV-71 A-L Relief Valve Replacement," Rev. 9, 9/5/85, performed May 1987.

No inadequacies were identified.

9.0 Radiological Controls

9.1 Routine Observations

During the report period, the inspector examined work in progress in both units, including health physics procedures and controls, ALARA implementation, dosimetry and badging, protective clothing use, adherence to radiation work permit (RWP) requirements, radiation surveys, radiation protection instruments use, and handling of potentially contaminated equipment and materials.

The inspector observed individuals frisking in accordance with HP procedures. A sampling of high radiation doors was verified to be locked as required. Compliance with RWP requirements was verified during each tour. RWP line entries were reviewed to verify that personnel had provided the required information and people working in RWP areas were observed to be meeting the applicable requirements. No unacceptable conditions were identified.

9.2 Allegation Concerning the Respiratory Protective Program

The NRC received an allegation concerning an individual required to wear a respiratory protective device (RPD) for work in an area that had the potential to be an airborne radioactivity area. The concern was that the mask did not pass the negative fit test. The inspector investigated the circumstances surrounding this allegation by interviewing appropriate individuals, reviewing procedures, various signoff sheets, reports, results of tests, exposure records, and radiation work permits (RWP).

9.2.1 Description of the Event

The worker had been trained, fitted, tested and qualified to wear an "Ultraview" small size mask RPD on June 2, 1987. The worker had been instructed in respiratory protection training. He understood that if an individual has a change in weight, facial injuries, or extensive teeth reconstruction that may result in a change in facial dimensions, he should request a refit of the mask. The worker had gained an appreciable amount of weight since the initial qualification in June 1987. The worker was requested by his foreman to be a firewatch in the Unit 2 drywell, a RPD required area, on January 20, 1988. The worker explained that he had gained weight since the qualification and had not worn a mask since that time. The foreman told the worker that

he would be scheduled as soon as possible for refit and requalification; however, he was again requested to make the drywell entry. At about 8:30 a.m., the worker made the entry to be a firewatch in the drywell wearing the mask he was qualified to use, utilizing an air hose. Upon relief in about two hours the worker told the foreman he was suffering from headaches caused by tightness about the head from using the small mask, and the foreman assured the worker he would be refit. Later that morning the foreman requested that he resume the drywell firewatch at about 12:30 p.m. The worker said he could because he would get a larger size mask from the mask issue cage. Before the worker made the entry, the foreman found out the worker had been issued a medium mask for which he was not qualified. The foreman apparently then allowed the entry by the worker. The worker made the drywell entry and completed the firewatch duty until relieved about two hours later.

On January 26, 1988, the worker had a new foreman who requested him to make an entry into the Unit 2 drywell to be a firewatch. The worker refused to make an entry into an airborne radioactivity area because the mask (a small Ultraview) he was qualified to wear leaked. That is, the mask failed the negative fit test that each individual is required to do prior to mask use. His original foreman did not get this new information during the first entry on January 20, 1988. The supervisor of the worker who was responsible for the scheduling of refit tests did not immediately schedule the refit test since the worker's qualification was to expire within about two weeks after January 20, 1988. Upon finding out about the worker's concerns, the worker was immediately refitted and qualified for the Ultraview medium size mask during the morning of January 26, 1988. Upon being requalified, the worker was requested to make an entry into an area requiring RPD as a firewatch. The worker refused, stating that the mask issue cage would not have the new qualification paperwork. A heated discussion began between the worker, the foreman, and the supervisor during which the worker was told the proper qualification would be obtained for the mask issue cage. This argument was subsequently broken up by the steward who happened onto the noisy discussion. The worker was not required to make an entry that day.

9.2.2 NRC Findings and Conclusions

The inspector reviewed the mask fit issuance records for January 20, 1988, and determined that for the first entry, the worker was issued the proper mask, for which the worker was qualified, a small size Ultraview. For the second entry, the worker was issued a medium size Ultraview for which the worker was not qualified. Procedure HP-512, Rev. 0, "Issue and Control of Respiratory Protection Equipment", states that individuals and the supervisors of users are responsible to ensure that respiratory protection equipment is used in accordance with instructions, training provided, and procedures. The issue control point attendant is responsible to verify respirator qualification of each individual prior to issuance for the equipment issued. Also, HP-500, Rev. 0, "Respiratory Protection Program", requires that individuals and supervisors be responsible for ensuring that workers use the correct respiratory protection equipment.

The inspector also reviewed these procedures covering the respiratory protection program, fit tests and qualification, and the issuance of the mask. The procedures are adequate in defining responsibilities for qualification, issuance and negative fit tests of masks. Interviews with the worker, other workers, the foreman and supervisor indicated that the individuals were adequately trained in the respiratory protection procedures, and knew their responsibilities for qualification, issuance and negative fit tests of masks. The procedure for issuance of the masks (HP-512) lacks clear definition of the issue control attendant responsibilities in issuing the mask for which the individual is qualified and lacks clarity in section 7.1.2 to assure that the issued mask or equipment is that for which the individual is qualified.

On January 20, 1988, a mask was issued to the worker for which he was not qualified by the attendant and with the knowledge of the worker and his foreman. In addition, the worker used this mask for a drywell entry at about 12:30 p.m. Technical Specification section 6.8.1 requires that written procedures be established, implemented, and maintained that meet the requirements of section 5.1 of ANSI N18.7-1972 which requires that the plant will be operated in accordance with written procedures, and Regulatory Guide 1.33, Appendix A, section G, part b which requires procedures for respiratory equipment. Failure to follow procedure HP-500 and HP-512 is an apparent violation of TS 6.8.1 (277/88-01-03).

The inspector noted that the Respiratory Issue Log did not record the mask by type and size but only by serial number which made the tracking of the issued respiratory equipment difficult. In addition, the log lacks a quality control check requiring the attendant to write and confirm the equipment with the qualification list.

The inspector reviewed the results of the whole body count of January 27, 1988, to determine if the worker had an intake while using the RPD on January 20, 1988. At this time the results are not determined. The inspector had questions involving the method of reporting and the value of minimum detectable activity for each radioisotope determined. This will be reviewed in a future inspection.

The licensee initiated several immediate corrective actions. The first concerned the responsibility of the issuance control point attendant to issue only respiratory equipment for which the individual is qualified. Attendants involved in this incident were restricted from issuance until they were retrained and counseled in their responsibility to issue RPD - in strict adherence to procedures. A sign was posted at each issue cage reminding individuals of their responsibility. All attendants were retrained and counseled in responsibilities and adherence to procedures. The procedures for testing and qualification, issuance, and use of RPDs were reviewed and temporary changes initiated to clarify responsibilities and issuance. Vendors were made aware of to the incident, and if involved directly, counseled and retrained in responsibilities and procedures. Long term corrective actions will be reviewed in a later inspection.

10.0 Physical Security

10.1 Routine Observations

The inspector monitored security activities for compliance with the accepted Security Plan and associated implementing procedures, including: security staffing, operations of the Control Alarm Station (CAS) and Secondary Alarm Station (SAS), checks of vehicles to verify proper control, observation of protected area access control and badging procedures on each shift, inspection of physical protected and vital area barriers, checks on control of vital area access, escort procedures, checks of detection and assessment aids, and compensatory measures. Except as discussed below, no inadequacies were identified.

10.2 Drug Detection Dogs

On January 6, 1988, between 2:30 p.m. and 7:30 p.m., trained drug detection dogs were brought on site unannounced. The main purpose of the visit was for training of employees using the dogs. Two teams of dogs, handlers, and PECo security personnel visited buildings both inside and outside the protected area. Areas visited included Unit 1 facilities, the Technical Support Center, and the Emergency Operations Facility. One team entered the power block to gain access to the control room.

Test drug samples were hidden by team members to demonstrate drug detection techniques and abilities of the dogs and their handlers. Numerous questions were asked by plant personnel, including some concerning PECo's fitness for duty policy. In addition to the educational sessions, general searches of the buildings were conducted; no contraband was found.

The licensee's investigation into alleged drug activities at Peach Bottom will continue. The inspector will keep abreast of future activities (see section 10.4).

10.3 Excessive Time to Compensate for Door Alarm

At 3:32 a.m., on January 20, 1988, a door to a vital area alarmed indicating a potential for unauthorized access to Unit 2. The licensee took 18 minutes to respond to the alarm and to search the area for unauthorized individuals. The guard dispatched to investigate the cause of the alarm and to search the area had difficulties with his key card accessing a vital door while in transit to the alarmed door. The guard received instructions from the CAS operator by phone on how to proceed to the alarmed door without having to pass through any other key card doors. The guard followed the instructions and found the corresponding door on Unit 3. The guard had responded to the wrong unit, Unit 3 rather than Unit 2. When the CAS operator realized the guard had responded to the wrong unit, another guard was dispatched to Unit 2 to investigate and search the area. The second guard arrived at the alarmed door at 3:50 a.m., immediately investigated the alarm, and searched the area for unauthorized individual(s). None were found. The corporal of the guard assisted the first guard in carrying out a search of all vital areas and no unauthorized individuals were found.

The licensee made an emergency notification system call at 4:26 a.m., to report this Safeguards Event. The licensee failed to properly investigate the alarm and search for possible unauthorized individuals in the vital areas within ten minutes after the alarm. Regional safeguard specialist inspectors were on site when this event occurred. They investigated this event and

reviewed the licensee's corrective actions. The findings will be reported in NRC Inspection Report 277/88-03; 278/88-03. On January 27, 1988, the licensee downgraded this event to recordable based on current plant conditions and vital area doors.

10.4 Licensee's Ongoing Drug Investigation

At 11:23 p.m., on January 7, 1988, the licensee made a one-hour security report that one of the individuals arrested on November 18, 1987, as a result of an FBI drug investigation, had implicated 23 additional people. The licensee was informed of this by an FBI contact. One of the individuals implicated was a licensed reactor operator and another was a non-licensed operator. The licensee tested both individuals in accordance with their fitness for duty program. The non-licensed operator tested positive. He was removed from duty and denied access to the protected area. The licensed operator tested negative.

At approximately 2:45 p.m., on January 12, 1988, a PECo health physics (HP) technician found a white powdery substance in the HP break room. This room is on the second floor of the access control center in the protected area. The substance was approximately one ounce and was in plastic sandwich bag secured with a twist tie. The bag was under some papers on a file cabinet. The substance "fell out" when the HP technician was removing some of these papers. Security was immediately notified. The licensee performed a field test and the substance twice tested positive as cocaine. (The field test is about 75% accurate.) The licensee informed the resident inspectors at 3:30 p.m., making a formal one hour report. The licensee also notified the FBI. The substance was transported for further laboratory testing. The licensee informed the resident inspector on January 14, 1988, that a laboratory test determined the substance to be bicarbonate. The licensee has determined the event to be recordable and not reportable.

On November 18, 1987, the FBI arrested six individuals who were accused of drug distribution at the Peach Bottom Atomic Power Station and in the surrounding York County area. The indictment by a Federal Grand Jury sitting in Harrisburg charged all of the defendants with conspiracy to distribute and possess with the intent to distribute methamphetamine. Four licensee and two contractor employees were involved. On January 15, 1988, the U. S. District Court for the Pennsylvania Middle District in Harrisburg found two of these defendants guilty and two not guilty. Previously, the two other defendants (one PECo and one contractor) had pleaded guilty to conspiracy and possession charges. The two found guilty (one PECo and one contractor) of conspiracy and possession to distribute methamphetamine will be

sentenced on March 11, 1988. The remaining two defendants (both PECo employees) are currently suspended and their status is under review.

At 12 noon on January 29, 1988, the licensee informed the resident inspectors of a suspect substance found by a contractor supervisor in the protected area. The substance was a small white capsule found in the administrative building southwest stairwell. The substance in the capsule field tested positive for methamphetamine. Field tests are not conclusive and the licensee sent the substance off site to be laboratory tested. On February 5, 1988, the licensee informed the residents that lab testing proved the substance to not be methamphetamine. It was not a controlled substance.

The inspector reviewed the licensee's action for these events including corrective actions. The inspector also discussed these with licensee security and management personnel. No violations were noted.

10.5 Inattentive Watchman on January 9, 1988

At 10:57 a.m., on January 9, 1988, the PECo shift security supervisor observed an inattentive compensatory guard (watchman). The watchman was observed lying down on an electrical panel in a vital area with his eyes closed. The PECo security supervisor approached the individual who then opened his eyes and said he wasn't sleeping. The watchman also stated he was feeling sick. The watchman was relieved, escorted out of the protected area, and suspended pending an investigation. A search of the vital area was conducted and no abnormalities were noted. The watchman had been on shift since 6:00 a.m., and had assumed this post at 9:55 a.m. The licensee made an ENS call at 12:30 p.m. The watchman was subsequently terminated for his actions.

The inspector reviewed the licensee's investigation and discussed this event with security personnel and plant management. In addition, NRC Inspection 277/88-03; 278/88-03 documented this event. The inspector had no further questions at this time. The inspector stated that he was concerned as this was another instance of an inattentive security force personnel.

10.6 Security Event on January 24, 1988

Early in the morning on Sunday, January 24, 1988, planned maintenance on transformers (doble testing) required that some lighting panels being removed from service. Some of the lighting affected the protected area. In response to the loss of lighting, security personnel placed portable lighting at the affected area and established a compensatory post because of the dimness of the portable lighting. The post used was an enclosed vehicle because of the extreme cold temperatures. The engine was used to provide

heating. During inspection rounds a supervisor came up to the vehicle and apparently startled the post guard. The compensatory post guard stated that she saw the supervisor, but did not notice his approach. The event was not immediately investigated to determine the need to make an immediate report or a recordable report, but was mentioned to the inspector in the control room about three hours after the event. The following Monday, January 25, 1988, the inspector reviewed the event with security personnel. The licensee responded by making an investigation of the event including an entry into the safeguards event log.

The supervisor had approached the vehicle from the passenger side and observed the guard with her head back. The supervisor then went around to the driver side without being observed, and apparently startled the guard. The supervisor questioned the guard as to what she had observed when the supervisor approached the vehicle. The guard had not observed the approach of the supervisor because she did not know from which direction he had approached the vehicle. The guard complained of the exhaust fumes. It was determined that the post was compensated since the other posts had observed the supervisor at the compensatory post. Therefore, the event was considered to be a recordable event by the licensee.

In spite of instructions to prevent carbon monoxide poisoning from the use of operating vehicles, such as placement of the vehicle so that the wind can blow the fumes away from the fan intake and opening the windows to maintain air changes, the licensee initiated a study of additional methods to prevent the intake of exhaust fumes. The inspector will review the corrective actions in a future inspection. No violations were noted.

11.0 Assurance of Quality

11.1 Involvement in Unit 2 Refuel Mode and Hydrostatic Test Preparations

Management and PORC involvement in reviewing the plant conditions necessary to support Unit 2 "refuel" mode and hydrostatic test were good. Procedures were developed, approved, and implemented to ensure that systems required to support these activities were operable, adequately tested and maintenance/modification activities were complete (see section 4.4.3).

On the other hand, weaknesses were identified in QA and QC involvement in this Unit 2 activity. QA and QC were involved in the required programmatic review of surveillance, in monitoring, in inspection and in audit activities. However, there was no QA and QC review of open items that could impact on system operability until the inspector questioned QA/QC personnel (see section 4.4.4).

11.2 Attention to Detail and Procedure Compliance

Two instances of not following procedures were identified. One involved licensed operators when placing the Unit 2 circulating water system into service (see section 4.2.1). This resulted in a flooding of the condensate pump pit room. The other instance involved the issuance and use of respirators by contractor personnel (see section 9.2). This resulted in the use by a worker of a respirator mask for which he was not qualified. These two instances indicate that some workers are not paying attention to detail and not adhering to procedures.

12.0 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 section 4.5.1.

13.0 Management Meetings

13.1 Preliminary Inspection Findings

A verbal summary of preliminary findings was provided to the Manager, Peach Bottom Station 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 inspection material was provided to the licensee during the inspection. No proprietary information is included in this report.

13.2 Attendance at Management Meetings Conducted by Region Based Inspectors

Date	Subject	Inspection Report No.	Reporting Inspector
Jan 13, 1988	Simulator Team Evaluations	87-35/35	Howe
Jan 19-22, 1988	Security	88-03/03	Bailey
Feb 1-5, 1988	Mark I Containment	88-04/04	Chaudhary

13.3 NRC/PECo Management Meeting on January 27, 1988

On January 27, 1988, a management meeting was held at Peach Bottom. At this meeting, PECo discussed the status of their restart plans. In particular, the status of Section II of the "Plan for Restart of Peach Bottom Atomic Power Station" was discussed. The licensee gave an overview of this plan including corrective actions to address root causes, and, the link among the shutdown issues, root causes, and proposed corrective actions. (The licensee subsequently submitted the plan on February 12, 1988)

The inspector attended the meeting. The NRC will continue to follow this area including a detailed review and evaluation of this plan.