

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-277/85-25 & 50-278/85-21

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 at: Delta, Pennsylvania

Inspection conducted: June 15 - July 26, 1985

Inspectors: T. P. Johnson, Sr. Resident Inspector  
J. H. Williams, Resident Inspector  
J. E. Beall, Project Engineer

Reviewed by: J. M. Grant  
J. M. Grant, Reactor Engineer

8/23/85  
date

Approved by: Robert M. Gallo  
Robert M. Gallo, Chief  
Reactor Projects Section 2A

8/26/85  
date

Inspection Summary: Routine, on-site regular and backshift resident inspection (157 hours Unit 2; 113 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: No unacceptable conditions were identified.

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## DETAILS

### 1. Persons Contacted

J. F. Mitman, Maintenance Engineer  
\*R. S. Fleischmann, Manager Peach Bottom Atomic Power Station  
A. A. Fulvio, Technical Engineer  
A. E. Hilsmeier, Senior Health Physicist  
D. L. Oltmans, Senior Chemist  
F. W. Polaski, Outage Planning Engineer  
S. R. Roberts, Operations Engineer  
D. C. Smith, Superintendent Operations  
S. A. Spitko, Administration Engineer  
J. E. Winzenried, Superintendent Plant Services

Other licensee employees were also contacted.

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

### 2. Plant Status

#### 2.1 Unit 2

Unit 2 began a shutdown on April 28, 1984, for pipe replacement and refueling. At the beginning of this report period, work remaining to be completed by the licensee prior to reactor startup included instrument surveillance testing, operational verifications, system checkoff lists and modification acceptance testing. During instrument testing between June 22 and June 30, 1985, and with Unit 2 in a cold shutdown condition, several reactor scrams and engineered safeguard features actuations occurred. (See detail 4.2.2.)

On July 6, 1985, the licensee commenced reactor startup and at 4:00 p.m., the reactor was critical. As power was increased to the intermediate range monitor (IRM) range, no response was noted on IRM channels C and E. The licensee declared the two IRMs inoperable, inserted a half scram on RPS channel A and shut down the reactor. The IRM C and E detectors were replaced and tested satisfactorily. The reactor was again critical at 7:00 p.m. on July 7, 1985, and startup testing commenced. (See detail 4.4.)

On July 9, 1985, a licensee maintenance worker suffered electrical burns while cleaning a non-vital 13kv transformer panel. (See detail 4.2.3.)

On July 18, 1985, the licensee shut down Unit 2 due to turbine high vibration. The Unit was restarted on July 19, 1985, after turbine balancing and repair of the 'B' reactor feedwater pump.

On July 22, 1985, the licensee again shut down Unit 2 to repair a leak on the 'C' reactor feedwater pump discharge line instrument tap. The Unit was restarted on July 24, 1985, after the instrument tap leak was repaired.

At the end of the inspection period, Unit 2 remained in power ascension and startup testing at 80% power.

## 2.2 Unit 3

The Unit began the report period at 77% power in extended core flow coastdown per general plant procedure, GP 19-3. The unit was operated with the fifth stage feedwater heaters out of service and a failed number two seal on the B reactor recirculation pump. Off-gas radioactivity peaked at about 64,300 uCi/sec on June 28, 1985, but generally averaged around 52,000 uCi/sec for the period.

Power was reduced to 24% on June 20, 1985 to investigate and repair a vacuum leak in the 3A off-gas recombiner compressor (see detail 4.2.1). The Unit was returned to power on June 24, 1985, and continued the coastdown until July 9, 1985, when an electrical malfunction forced power to be reduced for a short period (see detail 4.2.3).

The licensee began shutting down Unit 3 on July 14, 1985 for its sixth refueling outage. The licensee shut down and depressurized slowly because of relatively high coolant activity levels and the potential for gaseous radioactive releases from system perturbations.

As of July 26, 1985, the reactor pressure vessel head removal was in progress.

## 3. Previous Inspection Item Update

- 3.1 (Closed) Violation 277/84-03-01 and 278/84-03-01. Excessive heatup rate. The licensee's response, dated July 18, 1984, was reviewed by the inspector. The licensee had taken appropriate disciplinary action for the two separate occurrences. In addition, the Station Superintendent sent a letter to all licensed operators on April 10, 1984, discussing heatup rate Technical Specification (TS) violations, to clarify operator responsibilities and to further express management's commitment to procedure compliance. The inspector reviewed this letter and determined it to be comprehensive and adequate relative to reactor heatup responsibilities and TS adherence. The inspector observed plant heatups on Unit 3 on February 25 and 28, 1985, and on Unit 2 on July 7 and 24, 1985. The heatups were in accordance with plant startup procedures, the Station Superintendent's letter of April 10, 1984, and Technical Specification requirements. This item is closed.

- 3.2 (Closed) Violation 277/84-03-02 and 278/84-03-02. Reactor vessel pressurization above atmospheric when reactor was less than 120°F. The licensee's response dated July 18, 1984, was reviewed by the inspector. The licensee counseled the reactor operator regarding the importance of following procedures; the event was discussed at shift meetings; and the Station Superintendent addressed the event in a letter to all licensed operators, dated April 10, 1984 (see 3.1 above). The inspector reviewed the letter, discussed this with several reactor operators and observed cold shutdown reactor pressure control on both Units. No inadequacies were identified. This item is closed.
- 3.3 (Closed) Violation 277/84-01-02. Improper documentation and completion of surveillance tests on the Rod Sequence Control System (RSCS) and the Rod Worth Minimizer (RWM). The licensee's response dated July 18, 1984, was reviewed by the inspector. The licensee issued a letter on April 10, 1984, from the Station Superintendent to all senior engineers regarding the importance of maintaining test documentation once a surveillance test has been initiated - even if the test fails and a Maintenance Request Form (MRF) must be initiated. The letter also reminds the senior engineers that an MRF must be initiated if plant problems cannot be corrected within eight hours. The licensee counseled the operators and engineers involved in improper surveillance test documentation and review. In addition, the licensee revised the surveillance in question, ST 10.5, "RWM Operability Check," 11/8/83, Revision 12, to make data entry more obvious for test performance and review. The inspector reviewed ST 10.5, and determined it to be adequate. In addition, the inspector discussed this violation with the licensee and had no further questions. Based on the review of the licensee's response to this violation, the revised surveillance procedure and recent observations of surveillance procedure performance, this item is closed.
- 3.4 (Closed) Violation 277/83-37-03. Failure to ensure participation in training lectures and failure to ensure completion of supplemental training. The licensee responded to this violation in a letter dated March 15, 1984. The inspector reviewed the response and discussed it with the licensee. Also, licensed operator training was reviewed by a Region-based licensed examiner during the Unit 2 restart team inspection (Inspection 277/85-15), and the inspector reviewed licensee operator requalification training (see detail 5). No inadequacies were identified. Based on a satisfactory licensee response to this violation, and the reviews conducted by both the inspector and a regional inspector, this item is closed.

- 3.5 (Closed) Violation 277/84-31-04. Failure to post an area that was contaminated. The licensee took appropriate corrective action. The inspector reviewed these activities as well as measures to prevent recurrence at the time of the violation. No written response to this violation was required. This item is closed.
- 3.6 (Closed) Inspector Follow Item 277/84-35-01 and 278/84-29-01. Procedure changes to reduce the probability of a scram when placing a recirculation pump back in service. On December 14, 1984, while placing the "B" recirculation pump back in service the Unit 3 reactor scrammed due to APRM high flux. The indicated power on the APRMs prior to the scram was about 55% whereas the actual power was 33%. Prior to starting the pump, the scram margin was 13%. The APRM spiked 15-20% when the pump discharge valve was opened. This large indicated power spike was caused by the APRM gain settings of approximately 1.5. Procedure S.2.3.1.A, "Startup of a Recirculation Pump," was revised to require a scram margin of at least 20% prior to starting an idle pump with reactor power above 20%. The inspector reviewed the procedure change and discussed it with the licensee. The inspector had no further questions. This item is closed.
- 3.7 (Closed) Violation 277/84-03-04 and 278/84-03-07. Inadequate fire hydrant maintenance program. A deficiency noted during a required inspection was allowed to persist until the fire hydrant became inoperable. Surveillance procedure, ST 16.15, was revised to more clearly address deficiencies which could lead to problems during sub-freezing weather. The revision includes preliminary corrective actions such as manually draining hydrants with drainage problems, followed by periodic inspections until permanent corrective action can be taken. In addition, the surveillance test will not be signed off as completed until all hydrants are verified to be operating satisfactorily. The inspector reviewed the revised ST and the changes to the ST as described in the letter of April 17, 1984, in response to the violation. The inspector had no further questions. This item is closed.
- 3.8 (Closed) Unresolved Item 277/83-29-03 and 278/83-28-04. Reactor building design in-leakage. Revision 2 of the updated FSAR, Section 5.3 provides a clarification of the assumptions used in the safety analysis for radioactive releases from secondary containment. There was originally a question about the actual versus design air exchange rate in the Reactor Building and the impact on the calculated off-site doses during accidents. The licensee assumes no credit for the holdup in secondary containment. Therefore, the calculated doses are not dependent on Reactor Building in-leakage. This item is closed.

- 3.9 (Closed) Inspector Follow Item 277/84-24-01. Review the licensee's NDE and disposition of the recirculation riser safe-end nozzles (N-2s). The licensee replaced all ten N-2 nozzles. A Region-based specialist inspector examined the nozzle replacement procedures, welder qualification and procedures, and NDE (Inspection Reports 277/84-36, 277/85-04, and 277/85-01). The inspectors observed replacement operations in the Unit 2 drywell and discussed the work with the licensee. The inspector had no further questions. This item is closed.
- 3.10 (Closed) Violation 277/81-24-01. Failure to follow locked valve logging procedures. Locked valve log entries were not made for eight normally locked valves that had been returned to their normal positions and locked. The inspector reviewed the licensee's response dated June 30, 1982. The licensee counseled the involved individual and briefed the operating staff regarding proper logging procedures. The inspector reviewed administrative procedure, A8, "Procedure for Control of Locked Valves," Revision 5, March 14, 1983, and associated appendices, and Check-Off Lists (COL) A-8A, A-8B, and A-8C. In addition, the inspector reviewed the current entries in the locked valve log and the recently completed COL A-8A for Unit 2 startup on June 30, 1985. No unacceptable conditions were identified. This item is closed.
- 3.11 (Closed) Bulletin 277/79-BU-26. The subject Bulletin was in response to the identification by GE of a failure mode for control rods which could cause a loss of boron poison material. High, local depletion of the boron-10 (approximately 50%) in the control rod blades poison tubes had led to blade cracking which had allowed the poison material to leach out. The Bulletin required licensees to establish and maintain a record of control blade boron-10 depletion, to identify and replace blades with greater than 34% boron-10 depletion, to conduct shutdown margin tests, and to perform destructive tests on the most highly exposed control rod.

The inspector reviewed the licensee's December 17, 1979 response, which states that a control blade operating history program has been carried out. The inspector also reviewed PECO Nuclear Generation Division Fuel Management Section Procedure FM-I-10, "NSROD Computer Program Data Preparations," which describes the process for maintaining control blade operating histories and the analyses for evaluating control blade replacement. Since the Bulletin was issued, the licensee has replaced certain boron-control blades in high flux regions with ones using hafnium as the neutron absorber. The hafnium blades deplete more slowly than the boron ones and therefore have a longer in-core life. The inspector found the licensee's program to be acceptable.



The licensee has routinely conducted shutdown margin tests as required by the Bulletin following refueling outages. NRC Inspection 50-277/80-34 and 50-278/80-27 documents inspector review of the determination of shutdown margin for Unit 2, Cycle 5, conducted in August 1980. No deficiencies were identified.

General Electric Company proprietary report NEDE-24325-P describes the results of a destructive examination of a control blade as required by the Bulletin. This report was reviewed by Region-based inspectors. No deficiencies were identified. This item is closed.

- 3.12 (Closed) Bulletin 277/80-BU-13. This Bulletin requires visual examination of Core Spray system sparger piping during each refueling outage. NRC Inspection 277/83-37 and 278/83-35 documents inspector review of the licensee's Core Spray system sparger inspection records and submittals. No deficiencies were identified.

The licensee's inspection during one refueling at Unit 2 revealed a through-wall indication at the "B" sparger T-junction. The licensee's repair and safety analysis were accepted by the NRC as documented in Inspection 277/82-06 and 278/82-06 and NRR Safety Evaluation of June 10, 1982. Currently, the licensee conducts the required inspections in accordance with ST/ISI 10.1S6, "Inservice Inspection - Remote Visual Examination of Core Spray Spargers and Associated Piping," dated June 27, 1984. The stated purpose of the procedure is "to ensure compliance with the requirements of NRC IE Bulletin 80-13 and ASME Section XI Code." Bulletin 80-13 is listed as a reference on ST/ISI 10.1S6.

Based on the inspector's review of licensee records and correspondence and the performance of the licensee's inservice inspection program, which includes a procedure written to satisfy the subject Bulletin, this item is closed.

- 3.13 (Closed) Unresolved Item 277/82-23-01 and 278/82-22-01. Documentation inadequacies regarding plant shielding design review, TMI Action Plan Item II.B.2, and completion of corrective actions for the Health Physics - Operation Support Center (HP-OSC). The licensee's actions on this item were reviewed and documented in Inspection Report 277/83-20 and 278/83-20. This item was considered open pending completion of the shielding modification for the HP-OSC. The inspector examined the new two foot thick shield wall and steel plate added to an existing wall to assure it was as described in the modification package number 1349. The inspector also reviewed the documentation for the modification and discussed the modification with the licensee. The inspector had no further questions. This item is closed.

#### 4. Plant Operations Review

##### 4.1 Station Tours

The inspector observed plant operations during daily facility tours. The following areas were inspected:

- Control Room
- Cable Spreading Room
- Reactor Buildings
- Turbine Buildings
- Radwaste Building
- Pump House
- Diesel Generator Building
- Protected and Vital Areas
- Security Facilities (CAS, SAS, Access Control, Aux SAS)
- High Radiation and Contamination Control Areas
- Shift Turnover
- Emergency Cooling Tower

- 4.1.1 Control Room and facility shift staffing was frequently checked for compliance with 10 CFR 50.54 and Technical Specifications. Presence of a senior licensed operator in the control room was verified frequently.
- 4.1.2 The inspector frequently observed that selected control room instruments were operable and indicated values were within Technical Specification requirements and normal operating limits. 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.
- 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 backshift observations, to ensure compliance with administrative procedures and regulatory guidance. No inadequacies were identified.
- 4.1.6 The inspector observed main stack and 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 spot-checked during and after maintenance. Plant housekeeping was generally acceptable.
- 4.1.9 The inspector verified 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 to licensee procedures. Systems checked included Emergency Service Water, Rod Worth Minimizer, Rod Sequence Control, Reactor Manual Control and Control Rod Drive Hydraulic. No inadequacies were identified.

#### 4.2 Followup On Events Occurring During the Inspection

##### 4.2.1 Unit 3 Power Reduction Due to High Off-Gas Activity

A vacuum leak in the Unit 3 off-gas system on June 20, 1985 caused high stack gas count rates. The vent stack spiked at  $7E+4$  cpm on channel B and  $1E+5$  cpm on channel A. The Unit 3 vent stack has been normally running about 600

cpm. The main stack spiked at 400 cps, and had been normally running about 150 cps. The licensee began reducing power at 9:20 a.m. to lower the stack gas release rates. Power was held at 24% while plant operators investigated and repaired a vacuum leak. The leak was in the 3A off-gas recombiner compressor and was caused by a ruptured tube in the main condenser B1 water box. During the leak repair, an unplanned gaseous release of about 52% of the Technical Specification 3.8.C limit occurred. The inspector reviewed the stack gas recorder charts and release calculations and discussed the event with the licensee. The inspector monitored the vent stack and main stack recorders throughout the event. Power was increased on June 22, 1985, but stopped on June 23, when reactor conductivity increased to 0.9 umho/cm. Power was reduced to 37% to plug condenser tubes and returned to 80% on June 24, 1985. At 80% power, the off-gas activity was measured at 63,000 uCi/sec. The off-gas activity peaked at about 64,300 uCi/sec on June 28, but generally averaged about 52,000 uCi/sec. No unacceptable conditions were identified.

#### 4.2.2 Unit 2 Reactor Scrams/ESF Actuations During Testing

During final preparations for Unit 2 startup, from June 22 to June 30, 1985, the licensee began backfilling instrument lines using a portable pressurized water supply which supplied demineralized water at approximately 100 psig. The licensee experienced several scrams and emergency safety feature (ESF) actuations due to inadvertent reactor low water level signals generated during backfilling operations. The ESF actuations included Group II and III isolations and the automatic start of the E2 and E4 diesel generators.

The licensee discontinued use of the portable system and completed instrument line backfilling without further incident using a 50 psig demineralized water source.

The licensee plans to review the methods available to perform backfilling. The resident inspectors will continue to follow the licensee's corrective actions including the results of the licensee's review.

#### 4.2.3 Worker Injury Due to Electrical Shock

At 9:53 a.m. on July 9, 1985, a licensee maintenance worker suffered burns to his hands, arms and face while cleaning a 13kv transformer disconnect panel in the cooling tower

non-vital switchgear, located outside the site protected area. The individual's vital signs stabilized and he was transported via helicopter to the Baltimore shock trauma hospital. Prior to the event, Unit 2 was at 2% power conducting startup testings and Unit 3 was at 72% power in end-of-cycle coastdown. The short circuit caused a voltage transient on both Units resulting in a primary containment isolation for Groups II and III isolation valves. The Group II isolation includes RHR head spray and shutdown cooling, RWCU and drywell sump valves. Group III isolation includes drywell and torus ventilation, radiation gas sample and oxygen sample valves and Reactor Building and Fuel Floor Ventilation. The voltage transient also caused a loss of certain non-vital equipment on Unit 3 resulting in a partial loss of main condenser vacuum. The licensee reduced power on Unit 3 to 59% and as a result the vacuum stabilized.

The isolations were reset, and Unit 3 returned to the pre-event power level of 72%. The licensee's safety department is conducting an investigation. The licensee made a 4 hour report of this event to the NRC on the ENS at 10:50 a.m., on July 9, 1985.

At the time of the event, the inspector and a Region-based inspector observing startup testing on Unit 2 were in the Control Room. Direct observations were made of the Unit 2 and Unit 3 licensed operator responses. The overall response by the operators to the voltage transients in the plant was good.

The licensee dispatched the personnel safety team to the scene in accordance with the emergency plan and associated implementing procedure. The Region-based inspector observed licensee actions at the scene including the administration of first aid and transport of the injured worker to the helicopter.

Breaker BS-4, 13.2kv feeder breaker to the OBX25 transformer disconnect panel, tripped on overcurrent as indicated on control room panel OOC24. This overcurrent condition caused voltage perturbations on the #2 startup electrical feed which was being supplied by the #3 startup and emergency auxiliary transformer.

The inspector reviewed the permit (M85-03822) that isolated the work area in the transformer panel. Within the scope of the inspector's review, no unacceptable conditions were identified.

#### 4.3 Logs and Records

The inspector reviewed 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, Reactor Operator's Log for Unit 2, Reactor Operator's Log for Unit 3, Control Operator Log Book and STA Log Book, Night Orders, Radiation Work Permits, Locked Valve Log, Maintenance Request Forms and Ignition Source Control Checklists. 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.

#### 4.4 Refueling/Outage Activities

##### 4.4.1 Unit 2 Refueling/Outage Recovery and Startup Testing Activities

The inspector followed the progress of the Unit 2 refueling/outage recovery activities. The daily outage meetings were attended and checks of systems were made as they were returned to service. Results of the final system surveillance testing and modification acceptance testing were reviewed.

The licensee completed all the pre-requisites for Unit 2 startup, and on July 6, 1985, the Unit attained criticality at 4:00 p.m.

Unit 2 startup activities were monitored by the inspector. The daily startup meeting in the Control Room was attended routinely by the inspector. A Region-based inspector was on site from July 8, 1985 through July 17, 1985, to review Unit 2 startup testing (Inspection 277/85-26). The inspector observed several of the Unit 2 startup tests (see detail 7) and observed portions of the Unit 2 startup and power ascension activities during the period July 8, 1985 through the end of the report period. In addition, portions of the shutdowns, performed on July 18 and July 22, 1985, were observed.

Within the scope of the Unit 2 recovery and startup activities, no unacceptable conditions were identified.

#### 4.4.2 Unit 3 Refueling

The licensee began to shut down Unit 3 at 10:40 a.m. on July 14, 1985, for its sixth refueling outage. The scheduled twelve week outage runs until October 2, 1985. The turbine generator was taken off line at 2:40 p.m. on July 14, 1985. The shutdown proceeded slowly to minimize the radioactive gaseous release. On July 17, 1985, the reactor was at atmospheric pressure and all control rods inserted. The inspector followed the shutdown and checked activities against GP-3, Normal Plant Shutdown. The inspector also frequently reviewed ST 9.12, "Reactor Vessel Temperatures," and ST 9.12C, "Reactor Vessel Head Flange Temperature Surveillance," and checked that the reactor pressure vessel flange temperature was greater than 100°F with the head studs tensioned as required by Technical Specification paragraph 3.6.A.3. The inspector discussed with the operators the special procedures implemented because of the coolant activity. They were knowledgeable of plant conditions and the special procedures. As of the end of this report period, the reactor vessel head removal was in progress.

The licensee's schedule for the Unit 3 outage includes the following work items:

- Refueling activities that include core off loading, fuel inspection, fuel sipping, CRD exchange, and core reloading.
- Annual diesel generator outages for inspection and preventive maintenance.
- A, B, C, D Battery Replacement
- Modifications to the off-gas system and the Emergency Service Water System.
- Appendix R Alternate Shutdown Modifications

The inspector will review licensee outage activities. No unacceptable conditions were identified.

#### 5. Licensed Operator Requalification Training

The inspector reviewed the 1985 licensed operator requalification training lecture topics, selected lesson plans, a sampling of attendance records, a sampling of quiz results, and attended several classroom lectures. The inspector reviewed station administrative procedure A-50, "Training Procedure," Revision 10, dated August 2, 1984, for conformance to 10 CFR 55, Appendix A, Requalification Programs for Licensed Operators of

Production and Utilization Facilities. Also, a detailed review of the licensed operator requalification program status sheets was performed.

The following lesson plans were reviewed:

LOR 85/3-1, Control Rod Worth, Rev. 0, 6/24/85  
LOR 85/3-2, RMCS and RPIS, Rev. 0, 6/24/85  
LOR 85/3-3, Control Rod Drive Hydraulic, Rev. 0, 6/28/85  
LOR 85/3-4, RWM, Rev. 0, 6/28/85  
LOR 85/3-5, RSCS, Rev. 0, 6/28/85  
LOR 85/3-6, Nuclear Instrumentation and RMCS, Rev. 0, 6/24/85  
LOR 85/3-10, ESW, Rev. 0, 6/27/85  
LOR 85/3-11, ECW, Rev. 0, 6/28/85  
LOR 85/3-14, HPSW, Rev. 0, 6/28/85

The inspector noted two minor errors associated with the lesson plans reviewed:

- LOR 85/3-6 had a transparency, T-LOR 85/3-6-6, "LPRM Assignments," on which the reactor core x-y grid labeling was interchanged.
- LOR 85/3-10, Emergency Service Water (ESW) did not list any technical specifications associated with the ESW.

The inspector brought these errors to the attention of the instructor and the licensee's Training Coordinator. The errors were corrected, and the correct information was presented to the class and verified by the inspector.

During the classroom lecture on the Reactor Manual Control System, LOR 85/3-2, the inspector noted that the instructor stated that the blue scram lights on the full core display for each control rod were lighted if either scram valve were open. This differed from the lesson plan information. During a lecture break, the inspector discussed this with the instructor. A review of the associated electrical drawing, M-1-S54, sheet 13, showed that the blue scram lights would light only if both scram valves were open, which was consistent with the lesson plan information. This corrected information was subsequently presented to the class and verified by the inspector.

The overall conduct of the requalification lectures was good. The instructor was well prepared, and the class was attentive. The instructor asked probing questions.

Within the scope of this review no violations were identified.



## 6. Review of Licensee Event Reports (LERs)

- 6.1 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 on-site followup. The following LERs were reviewed:

LER No. Event Date <u>LER Date</u>	<u>Subject</u>
2-85-02 May 30, 1985 June 26, 1985	Reactor scram signal with reactor in Cold Shutdown condition
2-85-03 June 3, 1985 July 3, 1985	Failure of the RHR valve MO-2-10-154A

### 6.2 On-Site-Followup

For LER 2-85-03, selected for on-site followup and review, the inspector verified that appropriate corrective action was taken or responsibility assigned and that continued operations 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.

LER 2-85-02, which involved a reactor scram on Unit 2 during hydrostatic testing, was also selected for review. This event was reviewed in Inspection 277/85-21 and 278/85-17. No discrepancies were identified relative to this LER.

## 7. Surveillance Testing

The inspector observed surveillance tests to verify that testing had been properly scheduled and 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 10.4, "Relief Valve Manual Actuation," Rev. 14, January 14, 1985, performed on July 9, 1985, on Unit 2.

- ST 6.11, "RCIC Pump, Valve, Flow and Cooler," Rev. 28, June 17, 1985, performed on July 10, 1985, on Unit 2.
- ST 6.15B, "HPCI Torus Suction Check Valve Operability (ISI)," Rev. 3, December 7, 1984, performed on July 12, 1984, on Unit 2.
- ST 9.12.C, "Reactor Vessel Head Flange Temperature Surveillance," Rev. 0, September 1, 1983, performed during the week of July 15, 1985 and July 22, 1985, on Unit 3.

No inadequacies were identified.

#### 8. Maintenance

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

<u>Maintenance Procedure/ Document</u>	<u>Equipment</u>	<u>Date Observed</u>
SP-813	E-2 Diesel Generator Inter Polar Connector Removal	June 17, 1985
FH-48B	Control Rod Blade Liner Loading Procedure	June 18-19, 1985
M-4.52	Removal of the Reactor Vessel Head	July 24-26, 1985

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

No inadequacies were identified.

#### 9. 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

The inspector observed individuals frisking in accordance with 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. Radiation Work Permit 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.

#### 10. Physical Security

The inspector monitored security activities for compliance with the accepted Security Plan and associated implementing procedures, including: operations of the CAS and SAS, checks of vehicles on-site to verify proper control, observation of protected area access control and badging procedures on each shift, inspection of physical barriers, checks on control of vital area access and escort procedures. No inadequacies were identified.

#### 11. Mispositioned Control Rods

The inspector reviewed the licensee's procedural controls and training programs regarding mispositioned control rods. The review included the following procedural implementations:

- Precautions to be taken during control rod movements
- Conditions allowing the bypassing of the Rod Worth Minimizer (RWM) system
- Prohibition of the use of the rod scram timing equipment
- Conditions allowing the use of the emergency "rods in" switch
- Conditions allowing the use of the notch override switch in continuous withdrawal

The following procedures were reviewed:

- GP-2, App. 1, "Startup Rod Withdrawal Sequence Instructions," Rev. 1, 8/21/84
- GP-2, "Normal Plant Startup," Rev. 39, 3/20/85
- GP-2A, "Reactor Startup and Heatup," Rev. 20, 4/10/84

- GP-2A, "COL, Reactor Startup Order," Rev. 61, 3/21/85
- GP-3, "Normal Plant Shutdown," Rev. 30, 1/15/85
- GP-9-2, "Unit 2 Shutdown Instructions, Rev. 3, 3/21/85
- GP-9-3, "Unit 3 Shutdown Instructions," Rev. 12, 3/21/85
- S.5.5.D, "Manual Bypass of the RWM," Rev. 1, 1/16/74
- S.4.3.C, "Withdrawing a Control Rod Continuously," Rev. 4, 9/9/77

Licensed operator lesson plans were reviewed and classroom lectures were observed regarding control rod movements and related systems (see detail 5). In addition, a review was conducted of the licensed operator training program concerning the consequences of mispositioning control rods, the function of the RWM and RSCS, and the function and use of the rod scram timing equipment.

The guidance of reactor engineering personnel is a requirement for control rod withdrawal movements for the following conditions:

- new core startup initial criticality
- any time greater than 35% power
- greater than 25% power during plant recovery from transients

The general plant procedures (GP-2 series) for control rod withdrawal sequence and the startup procedures are approved by PORC. The operator cannot deviate from this sequence.

Within the scope of this review, no unacceptable conditions were identified.

## 12. Quality Control (QC) Inspector Qualification

The inspector performed a review of a contract employee who is assigned as a QC level II inspector. The following information is based on discussions with a licensee representative and a review of the individual's resume and qualification/certification records:

- (1) The individual is a Catalytic employee and has been on-site at Peach Bottom since the first week in July, 1985.
- (2) He works as a construction division (PECo Engineering and Research) quality control inspector.

- (3) He is certified as a Level II Electrical QC Inspector by Catalytic, effective July 1, 1985 through June 30, 1986.
- (4) His resume and certification records indicate that he meets the qualification requirements with respect to training, education, experience, physical examination and written test results for a level II inspector per ANSI N45.2.6-1978.

Within the scope of this review, no unacceptable conditions were identified.

### 13. Management Meetings

#### 13.1 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 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

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>
June 25 (Ent)	Operator Licensing Examinations	277/85-22	D. Lange
June 27 (Exit)		278/85-19	
June 16 (Ent)	Inservice Inspection Unit 3	278/85-14	H. Gray
July 8 (Ent)	Unit 2 Startup Testing	277/85-26	N. Blumberg
July 12 (Exit)			
July 22 (Ent)	HP Team Inspection	277/85-28	H. Bicehouse
July 26 (Exit)		278/85-26	