U. S. NUCLEAR REGULATORY COMMISSION

REGION I

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

Dates: March 8, 1997 - May 3, 1997

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EXECUTIVE SUMMARY
Peach Bottom Atomic Power Station
Inspection Report 97-02

This integrated inspection report includes aspects of resident and region based inspection of routine and reactive activities in: operations; surveillance and maintenance; engineering and technical support; and plant support areas.

Overall Assurance of Quality:

PECO Energy (PECO) operated both units safely over the period.

The inspectors conducted a problem identification and resolution inspection during this period and concluded that:

- The performance enhancement process (PEP) effectively identified and resolved problems, contributed to improved plant operation, and has had a positive impact on the reduction of plant challenges. The station identified and documented problems at a low threshold, and management supported the identification of problems. The screening of PEP issues was generally performed according to station guidance. Documentation of PEP reviews and investigations were typically very detailed and complete, and PEP corrective actions were completed in a timely manner.

  While the inspectors identified two areas for improvement in the PEP process, station management had properly identified other needed improvements and had undertaken some good enhancement initiatives. The inspectors concluded that these efforts reflected a strong, self-critical approach toward the improvement of the PEP process.

- The plant material condition was excellent. The continued plant preservation and good housekeeping activities reflected on management's and workers' commitments to maintain the high standards throughout the plant. Equipment problems were identified and addressed in a timely manner.

- PECO implemented an excellent program for reviewing and incorporating operating experience feedback into the station processes, which was supported strongly at the daily management meetings.

- PECO management has maintained a strong self-assessment culture throughout the station, resulting in continued improvement in plant performance.

- The independent safety engineering group (ISEG) performed effective and independent assessment of station activities and the nuclear review board (NRB) contributed significantly to the self-assessment and corrective action process.

- The nuclear quality assurance (NQA) division fulfilled the program requirements described in Appendix D of the updated final safety analysis report (UFSAR) and implemented several positive initiatives.

Plant Operations:

Operators performed well in response to several plant transients, including an electro-hydraulic control system reservoir low level and several recirculation system problems with a 30% runback and a manual reactor scram. The inspectors noted that, as in the recent past, non-safety-related equipment failures continued to challenge the operators.

PECO implemented the improved technical specifications (ITS) in accordance with the NRC safety evaluation, including controls over relocated or new requirements under the 50.59 process for changes. Both the PECO assessment findings and the NRC inspection findings indicated that the administrative controls for the ITS and safety function determination programs could be enhanced.

In review of 50.59 changes to the ITS bases, the inspector noted that some of the PECO station qualified reviewers were not aware of the method to review the UFSAR changes made, but not yet incorporated into the UFSAR. An unresolved item was identified to evaluate PECO's review of this issue once completed. **(Unresolved Item 50-277&278/97-02-01).**

The inspector closed Unresolved Item 96-04-02 after concluding that the TS provided no specific administrative controls over normally closed primary containment valves and blind flanges in the drywell and that all the required valves were in the correct position. However, the linking of known valve positions in December 1995 to the administrative controls for drywell access in the surveillance procedure was weak.

Maintenance:

The inspectors concluded that PECO performed a modification to the high pressure coolant injection system (HPCI) steam line effectively and in accordance with approved procedures. This modification reduced the magnitude of the steam line vibration.

PECO personnel conducted the observed surveillance tests (STs) well demonstrating good communications and plant systems knowledge. However, as noted below in the engineering section, the inspectors identified several instances where either the basis for STs was not fully understood or documented, or where the STs specified to meet TS requirements did not fully verify operability.

The inspectors verified, for selected safety-related components, that PECO conducted the inservice testing (IST) program according to code requirements and NRC guidance. The licensee had initiated some IST program enhancements consistent with NUREG-1482 guidelines.

During maintenance activities in the plants, the inspectors identified that PECO failed to properly implement its established procedure for scaffolding construction (M-C-700-335, "Scaffold Request; Erection; and Disassembly"). This resulted in failure to maintain safety-related components in an evaluated condition, since scaffolding was in contact with or in close proximity to the components. The scaffolding amounted to an unanalyzed temporary modification to the plant. The inspectors considered this a violation of 10CFR50 Appendix

B, Criterion III, DESIGN CONTROL, which requires that PECO evaluate changes in the design of the plant prior to implementation. **(Violation 50-277,50-278/97-02-02)**.

In a review of overtime usage by maintenance workers, the inspectors found that PECO failed to document prior approval for several individuals that worked greater than 24 hours in a 48 hour period during emergency diesel generator maintenance in February 1997. The inspectors found that this issue was of low safety consequence and determined that it met the conditions for a non-cited violation in accordance with Section IV of the NRC Enforcement Policy.

Engineering:

PECO conducted the station blackout (SBO) line testing well. However, the test acceptance criteria could not be clearly justified or specifically linked to the design load as specified in the PECO calculations. Further, the UFSAR and technical requirements manual (TRM) contained no detail on line loading or test acceptance criteria. The inspector considered this issue unresolved pending review of PECO actions to address these issues. **(Unresolved Item 97-02-03)**.

The inspectors found that operations' understanding and engineering's review and communications were weak, in review of a condition where PECO found the Unit 3 C reactor feed pump high water reactor vessel level trip function circuit inoperable. The trip function circuitry was incapable of operating, due to a blown fuse, from April 4 to April 14, exceeding the TS limit of 6 hours to restore the high water level trip capability or be < 25% reactor power. This violation was cited due to the time that it took for PECO to understand this condition fully. **(Violation 97-02-04)** The inspectors noted that the safety significance of this issue was limited since only the C feed pump was affected (i.e., the main turbine and the two other feed pump high reactor vessel level trips were operable).

Further, the inspectors found the daily channel check ST test specified for the high reactor vessel level trip channel check to be inadequate, in that it did not verify power available to the feed pump trip logic. The inspector considered this an unresolved item pending review of PECO's actions to identify other circuits that need power to operate. **(Unresolved Item 97-02-05)**

The inspectors reviewed the system configuration and operability testing on the emergency diesel generator (EDG) room ventilation systems, finding that STs did not verify the capability of the system to perform at its design function under design conditions of outside air temperature and EDG loading. However, the EDGs have criteria to carry the design load for an hour during testing which gives reasonable assurance that the EDGs have been operable. This issue remains unresolved pending review of PECO's actions to develop ventilation operability criteria and testing to support EDG operability. **(Unresolved Item 97-02-06)**

PECO responded well to a minor leak from the Unit 3 high pressure service water (HPSW) system. Engineering staff followed GL 90-05 guidance for assessing the structural integrity of the affected piping and made plans for code repairs, both of which were performed in a prompt, thorough manner. However, initial plans for delaying the

augmented piping inspections discussed in GL 90-05 were judged to be non-conservative. Other planned and completed corrective actions were considered very good. The inspectors will review PECO's failure analysis once it is completed.

The discrepancy, identified by the inspectors, between the IST acceptance criteria and the design and licensing basis data for the core spray (CS) system minimum flow rate revealed weaknesses in both engineering documentation and performance. Further, engineering had missed opportunities to identify this discrepancy during recent design basis reviews.

The Core Engineering Inspection was completed during this period and concluded the following:

- Engineering comprehensively pursued the resolution of the battery rupture issue, including a corrective action program believed by PECO to preclude future battery explosions under these conditions.

- PECO took adequate corrective actions to address weak engineering oversight and training of modification contractors as noted in inspection report 96-08.

- Unresolved Item 95-018-01 will remain open, pending successful completion of the scheduled program to determine the root cause for and correct the excessive HPCI pipe vibration. Some success has been achieved in reducing the vibration.

- The general appearance of facilities was clean and orderly.

- The system managers were knowledgeable about the functioning and management of their respective systems.

- The inspector found that PBAPS engineering continues to provide a well coordinated effort to identify, publicize, and resolve chronic plant issues.

- The UFSAR verification review to date has been a well managed program to provide documents with corrected errors, absent of ambiguity, and an accurate reflection of the structural and operating requirements of the plant.

- The quality of the rewritten DBDs was good. The absence of many review signatures in the documents is an inspector follow-up item, pending location of the original review documents or completion of the review process. **(Inspector Follow-up Item 97-02-07)**.

Plant Support:

Emergency Preparedness:

The licensee continues to maintain a very good emergency preparedness program, as evidenced by:

- Management and organizational changes did not have an adverse impact on program operation or implementation.

- The emergency response plan and implementing procedures were current and effectively implemented, but the quality control process is somewhat weak. During a review of recent emergency plan and procedure changes, the inspector found some minor discrepancies and errors.

- With the exception of the alarming dosimeters at the TSC, the inspector concluded that the licensee maintained a very good inventory program and that the emergency facilities and equipment were operationally ready.

- The emergency response organization personnel training and qualifications were current.

- Quality assurance audits and surveillance satisfied NRC requirements. However, the audit report lacked detail to support its conclusions.

- The licensee maintains a very good rapport with off-site agencies and support organizations.

- The inspector closed Inspector Follow-up Item 95-14-03, regarding EP organization changes.

Security:

The inspector determined that the licensee was conducting its security and safeguards activities in a manner that protected public health and safety, and meeting Security Plan commitments, as follows:

- The protected area (PA) intrusion detection systems (IDSs) met commitments and NRC requirements.

- The alarm stations and communications met commitments and NRC requirements.

- Security equipment repairs were timely. The use of compensatory measures was found to be appropriate and minimal. The maintenance and testing being implemented were reasonable to ensure equipment reliability.

- Training had been conducted in accordance with the Plan and was considered effective.

- Management provided very good support for the program.

- Licensee controls, including results, indicated that performance errors were being minimized and that controls were effectively implemented to identify and resolve potential weaknesses.

The inspector reviewed the corrective actions associated with and closed Violation 96-11-01, for failure to control safeguards information.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

SUMMARY OF PLANT ACTIVITIES

I OPERATIONS

O1 Conduct of Operations[1]

PECO Energy (PECO) operated both units safely over the period. Unit 2 operated at near rated power. Unit 3 entered the period in single loop operation, following a low lubrication (lube) oil level alarm on the B recirculation pump. On March 9, as operators lowered reactor power to allow a drywell entry to correct the low lube oil level, the A recirculation pump tripped, due to a faulty non-safety-related circuit breaker position switch, and operators manually scrammed the unit. PECO returned Unit 3 to operation on March 12. While operating at 100% power on April 9, the B recirculation pump tripped unexpectedly due to a fault to ground in the power cabling to the motor generator set. The unit operated safely in single loop operation until April 10 when the B recirculation pump was returned to service following repairs. On April 21, the recirculation system automatically reduced flow to 30% (runback) following the failure of a non-safety related feedwater system control computer power supply. Following replacement of the power supply, operators returned the unit to 100% power.

O1.1 Manual Reactor Scram and Startup - Unit 3

On March 9, the operators performed well in inserting a manual scram when the running A recirculation pump tripped following the transfer of house loads, during a downpower operation. Operators lowered reactor power to less than 20% to allow drywell entry to investigate and correct a low lube oil level in the B recirculation pump, which had been secured on March 8.

PECO found that a faulty circuit breaker position monitoring switch for the 13 KV generator supply breaker to the recirculation pump power supply caused the trip. Operators had transferred the power supply to offsite power in preparation for securing the turbine generator; however, following the turbine trip, due to the faulting position switch, the recirculation pump also tripped. The faulty switch allowed the recirculation pump logic to believe that the generator continued to supply the pump at the time that the turbine tripped.

Maintenance technicians repaired the faulty position switch and entered the drywell to correct the low oil level in the B recirculation pump. Operators restarted the unit on March 13, following these corrective actions.

The inspectors observed that operators conducted the shutdown and start-up activities well. This included documentation of cool-down and heat-up rates, and monitoring of reactor parameters.

1Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics.

O1.2 Single Loop Operation following Recirculation Pump Trip - Unit 3

On April 9, Unit 3 entered single loop operation following the tripping of the B recirculation pump, on a power fault to ground. The protective relaying functioned properly and operators performed well in reducing and stabilizing reactor power. Maintenance technicians found the fault in one of the five electrical power supply lines from the associated transformer to the recirculation pump motor generator set. The failed line was isolated and the recirculation pump successfully restarted on April 10.

O1.3 Conclusions:

Operators performed well in response to several plant transients and a manual reactor scram. The inspectors noted that, as in the recent past, non-safety-related equipment failures continued to challenge the operators.

O3 Improved Technical Specification (ITS) Implementation (TI 2515/130) (OPEN) Unresolved Item 97-02-01; Station Qualified Reviewer Use/Review of Open Changes to the Updated Final Safety Analysis Report

a. Scope:

The inspector verified that the improved technical specification (ITS) reflected the appropriate provisions or conditions of the NRC safety evaluation. The inspector put particular emphasis on PECO procedures and controls for those requirements relocated from the custom TS to other documents. The inspector used Temporary Instruction (TI) 2515/130, "Improved Standard Technical Specification Implementation Audits," to perform the review.

Specifically, the inspector reviewed:

- The administrative procedures related to the ITS conversion process, as listed in Attachment 1, Section 1.
- The relocated, modified, or deleted technical specification requirements listed in Attachment 1, Section 2 were used to verify use of appropriate controls.
- The new surveillance requirements listed in Attachment 1, Section 3 were used to verify adequate development of new procedures.
- Self-assessment audits performed on the ITS conversion and implementation process.
- The new program for Safety Function Determination and Control of the TS Bases.

b. Observations and Findings:

The items relocated from the technical specifications were relocated into a technical requirements manual (TRM), plant procedures, updated final safety analysis report

(UFSAR), offsite dose calculation manual (ODCM) or core operating limits report (COLR). To control and track the specific relocated items, PECO developed a technical specification relocation matrix and placed the matrix in the TRM . The matrix was consistent with the changes approved in the NRC safety evaluation.

All relocated technical specification items reviewed were addressed in a procedure or document that had controls which would require a 50.59 determination for changes. Plant procedures were found that addressed all the new surveillance requirements reviewed. UFSAR changes were incorporated into the UFSAR or scheduled for the 1997 UFSAR update.

PECO used its commitment tracking system to annotate specific sections of plant procedures for relocated items. This commitment tracking system provided an identification method such that any change to this item would require a 10 CFR 50.59 evaluation.

Administrative controls to make changes to the technical specification bases, TRM, ODCM, COLR, and technical specification relocation matrix in the TRM were acceptable and were controlled under the 50.59 process.

However, some specific concerns were identified. Not all station qualified reviewers (SQR) were aware of the method to review the posted changes to the UFSAR (those changes made but not yet been placed into the book). As a result, 50.59 determinations made by these individuals may not have been properly assessed for the safety analysis report impact determination. During this inspection, PECO staff took actions to notify all the SQR reviewers at Peach Bottom, Limerick and Chesterbrook of the need and method to review the posted UFSAR changes. In addition, PECO developed a performance enhancement process (PEP) item to track this issue, including review of completed 50.59 reviews. An unresolved item was identified to evaluate the review.

Changes made to the technical specification relocation matrix in the TRM were acceptable with the exception of item number 3.3.8.1 R04 related to the trip level settings for 4KV Emergency Bus Undervoltage Relay. This item was deleted from the technical specification relocation matrix in PORC 95-72 R-005. This relay was notably different than the other items contained in PORC 97-72 R-005. The inspector determined that the trip level setting for this relay, which was changed to N/A in the technical specification, should have remained in the technical specification relocation matrix and its procedure so annotated with an appropriate commitment tracking number. A procedure to verify the trip level setting of this relay existed, but without appropriate commitment tracking. In addition, the 50.59 determination which made the change did not address the UFSAR pages associated with this relay. PECO indicated that the procedure will be appropriately annotated.

Technical specification bases 3.6.1.3 was missing a reference 5 that was added in a prior revision and had incorrectly been removed in a subsequent revision. Revision 5 was cited in the body of the text. PECO could not explain the reason for deletion of revision 5 from the technical specification bases. A PEP issue was identified for further evaluation by PECO.

The technical specification relocation matrix in the TRM had numerous errors. Some procedure numbers were missing and others were incorrectly identified. This was one of the findings in the March 1997 PECO Energy self-assessment as well this inspection. Additional information from the NRR Project Manager identified that the NRC staff did not consider the technical specification relocation matrix a controlled document following verification that all relocated items were appropriately implemented. PECO Energy had not decided on the future use of the matrix based on the findings of both the PECO Energy audit and NRC inspection.

AA-C-5, "Preparation and Control of Procedure and Guidelines" was not updated to reflect ITS. PECO Energy generated a procedure change tracking number for this item.

PECO Energy agreed that the following documents could be enhanced:

- A-C-4 to correct a UFSAR reference
- A-C-43, A-C-79-2 and LR-C-1-1 to reflect use of TRM
- Surveillance test (ST)-O-003-450 and ST-O-60F-405 to add an annotation for commitment tracking
- FH-6C and FH-35 to add consistent wording for operations with the potential for draining the reactor vessel.

PECO Energy revised the operations manual to address the new technical specification program for safety function determination. The program was acceptable. The inspector had a minor concern regarding the scope of the determination if only the exhibits in the operations manual were used. The program developer did not intend for the exhibits in the operations manual to be the complete representation of support or supported systems. For example, some support systems (remote shutdown instrumentation and emergency diesel generator (EDG) fuel oil, lube oil or starting air) were not listed. OM-P-12.2 or the exhibits could be enhanced to state the limitation on the use of the exhibits.

c. Conclusions:

PECO implemented ITS in accordance with the NRC safety evaluation. All of the implementing procedures reviewed contained the relocated or new technical specification requirements and were under the control of the 50.59 process for changes. The administrative controls for the ITS and safety function determination programs could be enhanced based on both the PECO assessment findings as well as by the NRC inspection findings.

The most significant conclusion was that some of the PECO station qualified reviewers were not aware of the method to review the UFSAR changes made, but not yet incorporated into the UFSAR, when performing their 50.59 determinations. As a result, 50.59 determinations made by these individuals may not have been properly assessed for the safety analysis report impact determination. PECO was reviewing the 50.59 evaluations made by these individuals to confirm the determinations were properly assessed for safety analysis report determination. An unresolved item was identified to evaluate this review when completed. **(Unresolved Item 50-277&278/97-02-01).**

O4 Operator Knowledge and Performance

04.1 Unit 2 EHC Reservoir Low Level Event

a. Scope: (71707)

On April 1, the Unit 2 reactor operators (ROs) responded well to a valid electro-hydraulic control (EHC) reservoir low level alarm annunciator. Reactor power was reduced from 100% to approximately 48% due to a leak at a main turbine control valve (TCV) drain line. The inspectors observed the operators' and plant support personnel's response to the EHC problem from the main control room.

b. Observations and Findings:

The reactor operators immediately recognized the EHC low level alarm and notified the shift manger (SM) and control room supervisor (CRS), and the plant equipment operators (EOs), and referenced the overhead alarm response procedure. The EOs verified the validity of the alarm noting to the ROs that the level had dropped six inches from the previous day. Preparations were started to add a 55 gallon barrel of EHC fluid to the reservoir. The alarm response procedure noted that the EHC pumps should be secured if EHC reservoir level reached 23 inches. The overhead annunciator alarmed at approximately 24.1 inches. The reservoir level dropped to its lowest level of 23.7 inches as the first barrel of EHC fluid was added to the reservoir.

The SM conservatively directed the control room personnel to reduce reactor power to 90% based on the indication of a leak. After reviewing the EHC piping and valve diagrams, the operators determined that the leak could be isolated and repaired if the main turbine was removed from service. Based on this the SM continued to display a conservative operational approach by directing the crew to continue the power reduction to below 50%. At approximately 72% power the RO swapped electrical power supplies from the auxiliary transformer to the Unit 2 feed buses in anticipation of removing the main turbine from service. The swapover was performed correctly using system operating procedure (SO) 53.2.A-2, Rev. 8, "Transferring Unit 2 Auxiliary Loads from the Unit Auxiliary Transformer to the Startup Feed Buses."

The ROs routinely used good self-checking techniques prior to control board manipulations to ensure operations of the correct component. Throughout the plant evolution all control room personnel used clear communications and appropriate repeat backs. The CRS directed a controlled power reduction and provided plant status updates to the entire control room team at key points in the evolution. The SM stood back and maintained a broad perspective during the shift response.

Troubleshooting efforts revealed that the oil leak had started following swapping of the EHC reservoir cooling heat exchangers. The heat exchanger that was placed inservice was physically smaller than the previous in service heat exchanger, which resulted in a higher back pressure in the TCV oil drain line and TCV seal leakage. The leak stopped when the original heat exchanger was placed back in service. The plant personnel have initiated PEP I0006817, to evaluate and determine the root cause(s) for the leak event.

c. Conclusions:

The operators responded excellently to the EHC reservoir low level. The SM and CRS displayed excellent command and control as noted by the SM's conservative decision to reduce reactor power in anticipation of the possible main turbine removal from service. The CRS and SM provided clear direction and timely crew briefings throughout the evolution. RO performed manipulations well, and consistently used "self-checking" techniques. Overall, communications were good and the response by the equipment operators, engineering, health physics and other support groups was excellent. The response reflected on good training programs and operation management's enforcement of high operational standards and attention to detail.

O7 Quality Assurance in Operations

O7.1 Problem Identification and Resolution Inspection

a. Scope: (40500)

From March 31 to April 4, three inspectors conducted a performance based and programmatic evaluation to determine the effectiveness of PECO's controls in identifying, resolving, and preventing problems that affect station safety or are adverse to quality at Peach Bottom. The inspection was performed using the guidance of Inspection Procedure 40500, "Effectiveness of Licensee Controls in Identifying and Resolving Problems."

O.7.1.1 Performance Enhancement Program

The primary process used at PBAPS for the identification and resolution of conditions adverse to quality is the PEP. This process is also used to identify other performance enhancement opportunities. PECO procedure LR-C-10, "Performance Enhancement Program," provides direction for the implementation of the PEP program. The overall process remained essentially the same as that described in NRC inspection report Nos. 50-277 & 278/95-80. The inspectors reviewed a number of completed and in-progress PEP reports and discussed these issues with station personnel. Also, the inspectors interviewed several station personnel on the implementation of the PEP program.

New PEP issues were presented at the daily leadership meetings. Appropriate managers accepted the issues, and discussions of the PEPs were usually very good.

The inspectors reviewed a sample of the PEPs written during the past year and identified no unaddressed operability or reportability concerns. In addition, the inspectors reviewed licensee reportability evaluations for a few PEPs that the licensee had initially viewed as potentially reportable and found the determinations of not reportable to be acceptable.

The PEP documentation was recorded on a computer-based system that also provided for the tracking of corrective actions as well as reviews of corrective action effectiveness. The tracking system for PEP issues was well-monitored, and allowed for advance notification for those PEP review actions that were coming due. As such, the PEP

corrective actions were generally performed in a timely manner, and overdue PEP evaluations were infrequent.

The inspectors found that the documentation of PEP reviews and investigations was typically very detailed and complete, for example:

- PEP I0005984, which described an unexpected roll of the high pressure coolant injection (HPCI) turbine during testing on August 13, 1996, included several pages of lessons learned, root cause analysis, and other discussion. This PEP report also documented over 15 corrective action evaluations. The corrective actions for PEP issues typically included thorough reviews for the generic implications or the potential extent of condition for the issues.

- PEP I0006519, which was initiated on January 23, 1997, for a missed NRC commitment, described an extensive review of commitment files for 1993 through 1996. Based on this review, the licensee was able to conclude that the missed commitment was an isolated occurrence.

The experience assessment coordinator performed the initial screening of identified PEP issues with the assistance of other experience assessment staff members. The assignment of the PEP significance level and classification for the degree of review was generally performed according to the program guidance. Typically, the more significant issues required a detailed review including a root cause analysis, while those of lower significance required less investigation. The Level 1 issues are the most significant conditions adverse to quality that could result in a major impact on plant safety or a substantial hazard to the safety and welfare of the public or plant personnel. Level 2 issues involve moderate challenges to plant or personnel safety. Level 3 issues represent minor challenges to plant or personnel safety and Level 4 issues are related to process enhancements. Examples of Level 1, 2, 3, and 4 issues are described in PEP procedure exhibit LR-C-10-3.

The inspectors noted that some of the significance level assignments, however, were not consistent with the PEP program criteria contained in Exhibit LR-C-10-3. For example, five PEPs (I0005059, I0005960, I0005944, I0005636 and I0004681) associated with operational transients (OTs) should have been assigned a significance Level 2, but were issued at Level 3. In contrast, two OT PEPs (I0004732 and I0004767) were assigned a Level 2 classification as recommended by the PEP procedure criteria. The Unit 2 EHC oil low reservoir event discussed in Section 04.1 above, PEP No. I0006817, was a recent example of a Level 2 plant issue that was classified as a Level 3 PEP. The EHC event resulted in a power reduction of greater than 100 megawatts electric (MWe) for more than one day. Exhibit LR-C-10-3 lists the above criteria as an example of a Level 2 PEP. The PEP was classified as a Level 3 issue on April 3, 1997. Although some flexibility in assigning significance level was allowed, the justification for the lower significance level was not always documented. While these inconsistencies had minimal impact on the scope of the investigation for the issues, they did reflect a minor degree of informality in adhering to the written program guidance.

The inspectors determined that station personnel generally identified PEP issues at a low threshold, and management support of PEP issue identification was good. The inspectors noted that the total number of PEP issues identified had decreased from 975 in 1994, to 625 in 1995, and 512 in 1996. Through interviews with several personnel, the inspectors found that this decrease was due to a combination of factors, including: 1) the combining of several individual problems on a single PEP report during the critique of significant maintenance or outage work, 2) issuance of some self-identified PEPs with more than one issue, and 3) improvements in overall station performance. The inspectors also noted that the percentage of self-revealing and consequential problems had not increased during this time period. Based on these factors, reviews of numerous PEPs, and tours of the station, the inspectors concluded that despite the decrease in number of identified PEP issues, the threshold for issue identification remained low.

The inspectors noted that PEP Issue Review Leaders (PIRLs) were trained in the PEP process and in root cause analysis. Most PIRLs were members of the engineering organization, or were maintenance or operations supervisors. PIRLs led the investigations, assigned corrective action evaluations, and reviewed the corrective actions. The PIRLs also assigned root cause codes for lower significance PEPs or performed root cause analyses for significant issues. The inspectors reviewed the root cause analyses for several Level 2 PEPs and found them to be well-documented with clear descriptions of causal factors.

During interviews of personnel who had been PIRLs, the inspectors noted a number of comments related to a high level of administrative burden for PEP issues. Some personnel indicated that the burden of performing PEP reviews had the potential for affecting their decision on whether to identify issues as PEPs, particularly items of lower significance. This possible reluctance to use the PEP process was of concern, because the licensee may miss opportunities to identify and document lower level, precursor issues.

Station management had recognized the PEP process burden and took actions to reduce it. Specifically, the experience assessment group had adopted some enhancements to the PEP process, including: 1) documenting PEP issues related to a common maintenance or system outage together as part of a "critique PEP," 2) assigning experience assessment personnel as mentors for significant PEP issues, and 3) providing a more streamlined, "tabletop" resolution process for minor issues. Additionally, experience assessment was developing a simplified PEP issue identification form that would require only brief descriptions of problems instead of a detailed narrative. The inspectors reviewed four critique PEPs finding them to include several maintenance/planning improvement issues and some valuable, positive feedback for the reviewed activity. Although these PEP process enhancements should reduce the amount of unnecessary PEP documentation, they had not been incorporated in the PEP procedure and some personnel were not fully aware of them.

In addition to the administrative burden reductions, the station had identified other opportunities for improvement in the PEP process. The inspectors considered these to be good self-assessment observations, reflecting an appropriate self-critical approach toward improving the PEP process. Examples included:

- The experience assessment group had observed that many PEP narratives did not fully describe the root cause(s) of issues

- Some root cause codes assigned were not supported by the facts in the PEP reports

- Some reviews of human performance issues did not fully investigate the cause of the human performance errors or inappropriate actions

The inspectors reviewed recent PEP trending reports and noted that the station had suspended the quarterly root cause code trending report. This was done as a result of comments by station management and the Nuclear Review Board that the trending reports provided little value. The experience assessment group was considering alternative trending analyses or reports that would provide more useful information.

The inspectors noted two instances in which the station missed opportunities to identify or correct issues before they became more significant.

- PEP I0006509, initiated on January 21, 1997, identified that feedwater temperature inputs to reactor heat balance calculations had been calibrated incorrectly. This occurred in June 1995, due to faulty test equipment. The PEP investigation noted that technicians had questioned the test results at that time because they had to make adjustments on all four feedwater temperature channels, and the test equipment was subsequently found to be out of tolerance. Although the PEP investigation was thorough, the PEP did not identify that this long-term issue could have been averted had the technicians documented their initial questions or potential concerns formally, such as on a PEP. Thus, this issue represented a missed precursor event.

- PEP I0005120, dated February 13, 1996, could have resulted in a less significant event if more timely corrective actions were taken to address the incorrect shear pin size from an earlier PEP, No. I0005059, dated February 4, 1996. The shear pins at the inner travelling screen are physically larger than the outer screen pins. The first PEP noted that incorrect replacement shear pins were stored at the inner screen location. Subsequently, the wrong shear pins were located at the inner screens for the second event and resulted in additional complications during the restoration of the circulating water system. After the second event, the proper shear pins and a measuring gauge were placed at both the inner and outer screen locations. The inspectors performed a walkdown of both areas and noted that the proper pins were still in place to address the original problem. In addition, the second PEP did not reference the first PEP issue or recognize the missed opportunity to correct the problem if more timely corrective actions would have been taken.

07.1.2 Plant Material Condition

During individual tours and tours with EOs, the inspectors found excellent plant material and housekeeping conditions. The continued plant preservation and good housekeeping activities reflected on management's and workers' commitment to maintain the high standards throughout the plant. Equipment problems were identified and addressed in a

timely manner. Examples of the housekeeping high standards were particularly noticeable in the maintenance shop and control room areas.

07.1.3 Operating Experience Feedback

The inspectors found that PECO implemented the operating experience review in conformance with procedure LR-C-4, "Operating Experience Assessment Program."

The inspectors determined that the operating experience (OE) databases were informative and helpful in enhancing PBAPS personnel knowledge of industry information. Employees could access the database program to view information on operating experiences. The experience assessment department reviewed the nuclear network computer database each morning to retrieve information about industry events that may add value, and forwarded the applicable information unedited to the operations department, training and the independent safety engineering group (ISEG). The experience assessment group reviewed the OE data and performed a thorough screen of the information to determine items applicable to PBAPS, and shared that with the site directors and mangers from all departments at the morning leadership meeting.

Action items were assigned to appropriate departments to incorporate the OE information into the PBAPS processes. The experience assessment group tracked the OE action items and associated corrective actions to ensure the timely inclusions into station program and procedures. In addition, PBAPS's monthly publication, "PECO Nuclear Experiences," provided lessons learned for both successes and failures at Limerick and Peach Bottom stations.

07.1.4 Self Assessment

The inspectors reviewed self assessment activities that Peach Bottom and PECO Nuclear conducted in 1995, 1996 and 1997. Procedure AG-CG-19, "Self Assessment Guideline" provides general guidance on self assessment activities and articulates the general philosophy for self assessment activities at the station and department levels.

- 1997 Self Assessment Activities

The station performed numerous self assessment activities on an annual basis and included the following: 1) annual station wide; 2) individual department; 3) experience assessment evaluations; 4) post-Technical Specification (TS) maintenance critiques; 5) operations and maintenance worker observation cards; and 6) the overview PORC process. The assessments evaluated the areas that would benefit from additional attention to improve the station performance for both hardware and human performance issues. The self assessment evaluation results relied mainly on the PEP data, worker input, and department trends from the previous year. The focus areas established to improve performance were visible in the work place and clearly understood by the applicable station personnel. In addition, the operations and maintenance departments used observation cards to provide real time assessment for the work activities. Management routinely monitored the effectiveness of the self assessment focus areas to ensure the corrective actions were providing the desired change.

The post TS limiting condition for operation (LCO) maintenance critique program was an example of the continued strong commitment to the self assessment process. The work week managers conducted a post job critique for LCO maintenance activities and documented the results, both positive and areas for improvement, in detail as a "Level 4" PEP item. As needed, corrective actions were assigned to improve plant performance. The inspectors reviewed a sample of PEP documents and concluded that the post LCO maintenance critiques developed meaningful and valuable insight to limit safety system out of service time and have resulted in improved LCO maintenance performance.

- 1996 Self Assessment Activities

The inspectors reviewed the January 1996 "Nuclear Generation Group Evaluation of Peach Bottom Atomic Power Station" (Peach Bottom Corporate Assessment) and the December 1996 "PECO Nuclear Evaluation of Limerick Generating Station" (Limerick Corporate Assessment). The Peach Bottom assessment team comprised staff from Chesterbrook, Limerick and several outside organizations. The assessment concluded that overall station performance was strong with several areas requiring attention, including the modification process and human performance. The assessment found widespread, healthy attitudes toward safety, accountability and teamwork, good horizontal and vertical communications, and that supervision and management were accessible and responsive to assisting personnel in eliminating barriers to satisfactory job performance.

The inspectors also reviewed the Limerick Corporate Assessment, conducted in November 1996. That assessment concluded that while overall station performance was strong, there were several elements in the Limerick station culture that needed prompt management attention. Examples of concerns included management presence in the field (perceived as looking for mistakes or checking schedule rather than coaching) and perceptions that the PEP process was primarily punitive.

The inspectors conducted interviews with PECO staff and sought feedback on the applicability of the significant weaknesses identified in the LGS Corporate Assessment to Peach Bottom. The inspectors interviewed the leader of the Limerick Corporate Assessment Team and the Peach Bottom Vice President. The interviews revealed that PECO clearly acknowledged that some portion of the work force was experiencing the types of disaffections described in the Limerick Assessment and understood the potential impact of these problems. The inspection team found through interviews that senior management is focussed on understanding the scope, origin and nature of work force concerns and is committed to addressing them.

- Follow-Up of Previous Self Assessments

The inspectors reviewed the 1995 Station Self Assessment conducted at the direction of the site Vice President by all organizations onsite. The management focus areas identified in the 1995 Self Assessment included:

  - Work Control - emphasis on plant operation leading role in work control, including operator responsibilities to control work and remain aware of work activities.

- Administrative Procedures - reduce complexity of certain administrative procedures to make them less cumbersome to use and therefore improve compliance with those procedures.

- Corrective Action Process - PEP process viewed as disciplinary tool by some staff. Plant management identified the need to provide greater emphasis on post-job critiques to prevent events and thereby reduce post event investigations. Identified need to address individual human performance problems outside of PEP process and refocus PEP on issues that provide organizational learning.

- Modification Control - trending problem with installation and testing of station modifications.

- Human Performance - identified need for increased emphasis on "healthy skepticism" and "questioning attitude."

The inspectors reviewed the follow-up to these focus areas. With regard to concerns about the PEP process, the inspectors determined that PECO had implemented the concept of critique PEPs as a means of identifying and capturing lessons learned from major and routine work events. The critique PEP process provides for all significant participants in a work event to meet at the conclusion of the event to document those parts of the activity that went well and those parts of the process where improvements can be made. PECO has observed that the plant staff is more willing to identify performance weaknesses in a collaborative review of an entire job that identifies positive as well as negative aspects of performance than they would during investigations that focussed exclusively on negative events. PECO recently recognized that the mechanics of the PEP process including the software is cumbersome and may in itself be a barrier to use of the process. The inspectors confirmed this during interviews with front line managers, some of whom relied on others more familiar with computers to interface with PEP programs for their organization. PECO indicated that they are considering changes to the PEP process that would remove this kind of barrier.

The inspectors conducted a limited review of followup to department and division level self assessment findings from the 1995 station wide self assessment. The inspectors observed that self assessment findings were assigned Action Request (AR) numbers and due dates in PIMS. The inspectors did not observe any ARs from the 1995 assessment that had not been closed out.

O7.1.5 Safety Review Committees

- Plant Operations Review Committee

The inspectors reviewed selected plant operations review committee (PORC) meeting minutes for the last year and attended one PORC meeting. The meeting discussed a planned change to the operations manual to allow for the implementation of a dual-role senior reactor operator/shift technical advisor, and proposed changes to technical specifications regarding local leak rate testing. The inspectors observed that the PORC

members demonstrated a proper safety perspective and maintained a questioning attitude during the meeting. The inspectors concluded that PORC critically reviewed safety-related activities consistent with station procedures and regulatory requirements.

- Independent Safety Engineering Group

The inspectors reviewed the activities of the ISEG for the period September 1995 through December 1996. During that period, ISEG performed assessments for a broad range of activities and events. ISEG completed 13 formal reports during 1996 and a number of brief reviews which were documented on a monthly basis. The brief reviews generally documented the results of ISEG field observation activities and less in depth reviews of plant processes. The reports reviewed by the inspectors demonstrated that ISEG performed thorough evaluations and challenged issues when appropriate.

Of particular note was a series of reports on various aspects of a steam leak detection system modification. ISEG reviewed the adequacy of the design inputs, the implementation of single failure and separation criteria in the modification design, the adequacy of acceptance test scope, and the adequacy of surveillance tests to meet Technical Specification Channel Functional Test requirements. The series of reports was critical and identified problems with the implementation of separation criteria, the adequate use of design input documents by the modification team and concerns about the scope of acceptance testing specified in the modification package. ISEG determined that specific concerns in each of these areas for the steam leak detection modification were addressed before completion of the modification. The ISEG review of the steam leak detection modification provided a detailed horizontal review of the modification process and supported concerns with the modification process that were identified through other means during that time frame.

ISEG report production was a concern to NQA management and the NRB in 1995 as documented in NRC Inspection Report No. 95-80. At that time, the ISEG organization was undergoing a organizational change that included a reduction in the number of ISEG members from five to three and the organization of ISEG as a self-directed work team. In December 1996, ISEG presented a self-assessment to NRB regarding its effectiveness. ISEG concluded that the self directed work team approach was working well and that the formal ISEG report production was appropriate for the number of engineers. NRB concluded that ISEG reports were very well written. NRB also commented that measures could be taken to improve ISEG report timeliness and thereby report production.

- Nuclear Review Board

The inspector attended the March 6 nuclear review board (NRB) meeting held at Limerick and reviewed meeting minutes for NRB meetings from December 1995 through February 1997. NRB is responsible for assessing the safety of plant operations and plant management's ability in identifying actual and potential problems and, in implementing corrective actions to prevent recurrence. From the review of the meeting minutes and observation of the March meeting, the inspectors concluded that NRB provides a critical review of plant operations, engineering, quality assurance and PECO Nuclear performance issues.

For example, NRB discussion of Boraflex-related issues, as described in the minutes of the January 1997 NRB meeting showed a balanced discussion of technical and management issues associated with PECO's handling of Boraflex concerns and included critical reviews of the PEP process at the February 7, 1997 meeting.

The membership of NRB was stable over the course of 1996 and early 1997. The inspectors previously reviewed the expertise of the members and concluded that the NRB membership provides a broad range of expertise. The inspectors observed that the NRB recognized a periodic need to augment expertise in the areas of fuel issues and chemistry as well as in basic root cause analysis.

- Nuclear Quality Assurance Audits and Assessments

The inspectors reviewed surveillance reports and assessment reports generated by NQA during 1996 and early 1997, and found them generally well written with a broad range of topics.

The inspectors observed that PECO has, consistent with industry trends, transferred responsibility for many QA activities to the responsible line organizations over the past few years. The inspectors reviewed the efforts of the NQA organization to monitor the adequate performance of QA functions by the line organizations. One example of this was the resolution of conditions adverse to quality (CAQs) which are identified by the NQA organization.

CAQs identified by NQA are classified as corrective action requests (CARS) or deviations and are tracked by the line organization through the PEP process. Closeout of corrective actions for CARs formerly required the concurrence of the NQA organization. As part of the organizational changes made in conjunction with the NEEDs process, closeout of CAR related corrective actions was transferred to the line organization responsible for the issue. A transition monitoring plan was implemented by NQA to review the line organization closeout of CARS. The transition plan included a review of 100% of CAR corrective actions by NQA after the line organization had indicated the corrective actions was closed. During the transition phase, if NQA determines that the closure of the corrective action would have been rejected by NQA, the line organization is contacted and requested to address the closeout deficiencies identified by NQA. NQA has determined that the reject rate for CAR corrective action closure remains at approximately the same level as it did prior to transfer of closeout responsibility to the line organization, indicating that line organization closure was no less thorough than would have been the case prior to the transition. NQA is evaluating discontinuation of the transition monitoring program.

In Surveillance Report PSR-96-086, NQA documented a review of the corrective action effectiveness review provisions of the PEP process. LR-C-10 requires that the affected organization perform a determination of the probability that completed corrective actions will prevent the recurrence of an issue. Such determination is required for all level 1 and 2 PEPs and all CARs. NQA reviewed 24 PEP issues and determined that the corrective action effectiveness review criteria and closure documentation were generally adequate with a few discrepancies noted. NQA indicated that it will continue to monitor this aspect of the PEP process.

The inspectors reviewed meeting minutes of the NQA Engineering Oversight Activity. This activity was an initiative by which representatives from the Chesterbrook, Limerick and Peach Bottom NQA organizations coordinate activities with regard to oversight of PECO's engineering activities. The inspectors reviewed minutes of periodic meetings of the NQA working leads in which NQA working leads identify emerging issues and areas for future NQA focus. Finally, the inspectors reviewed guidance from the manager of the Peach Bottom Quality Division which identified NQA overall focus areas in 1996. Among areas listed for NQA focus were modification process implementation and maintenance rule implementation.

- Assessment AO967118, conducted in October and November of 1996, identified a number of weaknesses in modification installation activities. The inspectors concluded that NQA initiatives with regard to modification issues have been consistent with the problems identified in this area over the past few years and that assessment and review activities in this area have been focussed and provided a contribution to the improvement of quality in this area.

- With respect to the maintenance rule implementation, the inspectors determined that NQA had participated in a line organization assessment of the Peach Bottom maintenance rule and NQA conducted a surveillance of maintenance rule maintenance preventable functional failures in 1995, NQA did not conduct an independent assessment of the maintenance rule program prior to July 1996 implementation. Subsequently, the NRC issued a Severity Level III violation to Peach Bottom for maintenance rule implementation weaknesses in 1996.

The inspectors concluded that NQA identification of and focus on programmatic focus areas was good overall although additional evaluation of maintenance rule implementation could potentially have identified the weaknesses in this area prior to the NRC inspection.

c. Conclusions:

- PEP Process

The Peach Bottom station corrective action and root cause analysis programs contributed to improved plant operation and have had a positive impact on the reduction of plant challenges. The improvements were related to the following indicators: an increased number of self identified problems; improved plant capacity factor; reduced equipment outage times; and initiatives such as "experience assessment PEP mentoring," critiques, and "just in time experience feedback" programs.

The inspectors concluded that the PEP program was effective in identifying and resolving problems. The inspectors found that the station identified and documented problems at a low threshold, and management supported the identification of problems. The screening of PEP issues was generally performed according to station guidance. Documentation of PEP reviews and investigations were typically very detailed and complete, and PEP corrective actions were completed in a timely manner.

The inspector noted two areas for PEP program improvement.

- PECO missed opportunities to identify or correct issues before they became significant.

- Although some flexibility existed in assigning the initial PEP significance level, the justification for the lower significance level was not always documented. The procedure inconsistencies reflected a minor degree of informality in adhering to the written program guidance.

Station management had properly identified opportunities for improvement in the PEP process and had undertaken some good enhancement initiatives. The inspectors concluded that these efforts reflected a strong, self-critical approach toward the improvement of the PEP process.

- Plant Material Condition

The plant material condition was excellent. The continued plant preservation and good housekeeping activities reflected on management's and workers' commitments to maintain the high standards throughout the plant. Equipment problems were identified and addressed in a timely manner. Examples of the housekeeping high standards were particularly noticeable in the maintenance shop and control room areas.

- Operating Experience

PBAPS's programs for reviewing and incorporating operating experience feedback into the station processes were excellent and supported strongly at the daily management meetings. Industry information from various sources was forwarded to a wide distribution of plant personnel to maximize the ability learn about generic problems and minimize the occurrence at Peach Bottom.

- Self-Assessment

PBAPS management has maintained a strong self-assessment culture throughout the station. Continued improved plant performance was noted as a result of the strong commitment to perform and monitor the meaningful self assessment evaluations.

- Safety Review Committees and Nuclear Quality Assurance

The inspectors concluded that ISEG was performing effective and independent assessment of station activities and the nuclear review board contributes significantly to the self-assessment and corrective action process. The Peach Bottom Quality Assurance Division fulfills the program requirements described in Appendix D of the Peach Bottom UFSAR. Assessment activities, including identification of specific and programmatic deficiencies and tracking of these deficiencies was considered good. Initiatives such as the transition monitoring of CAR closeout and the engineering oversight activity were positive.

O8 Miscellaneous Operations and Issues

O8.1 (CLOSED) Unresolved Item 96-04-02; Verification of Primary Containment Valves and Blank Flanges in the Drywell

This item related to PECO Energy's use of administrative controls to satisfy SR 3.6.1.3.5 when entering Mode 3 from Mode 4 with the containment de-inerted. SR 3.6.1.3.5 concerns position verification of manual primary containment isolation valves and blind flanges inside primary containment. On June 24, 1996, PECO performed ST-O-007-340-3 to satisfy SR 3.6.1.3.5 prior to entering mode 3 from mode 4 with the containment de-inerted, using clearance CLR 95006238 as a basis for completion. The clearance prevented drywell access during power operations since December 4, 1995. PECO believed that since there was no entry into the drywell since December 4, 1995, the position of the valves and blind flanges could not have changed. Use of this logic and type of administrative control can satisfy the administrative control permitted in SR 3.6.1.3.5. However, June 24, 1996 was the first time that SR 3.6.1.3.5 was performed following the implementation of the Improved Technical Specifications. The surveillance procedure did not document that all the valves and blind flanges were known to be in the required position in December 1995. Subsequent to the performance of the ST-O-007-340-3, PECO verified, using check-off lists and other clearance work, that all of the required valves and blind flanges were known to be in the proper position following the Unit 3 outage in October 1995. In addition, following the forced outage in March 9, 1997, PECO personnel performed ST-O-007-340-3 by actual position verification of all required valves and blind flanges, noting no discrepancies.

The inspector concluded that the linking of known valve positions in December 1995 to the administrative controls for drywell access in the surveillance procedure was weak. However, since no specific administrative controls were defined in the technical specification and all the required valves were in the correct position, a violation of technical specification SR 3.6.1.3.5 did not exist. This item was closed.

II MAINTENANCE AND SURVEILLANCE

M1 Conduct of Maintenance and Surveillance

M1.1 Conduct of Maintenance

The inspectors observed the conduct of portions of the following maintenance work, and identified no negative issues:

WO C0176136, Repair Leaking HPSW Pipe Below RO-3789B (Unit 3)

M1.2 High Pressure Coolant Injection System Modification Work - Unit 3

a. Scope (62707)

The inspectors observed portions of maintenance work on the Unit 3 high pressure coolant injection (HPCI) system associated with a modification to reduce steam line vibration.

b. Observations and Findings

The inspectors observed maintenance work performed under work order C0172662, which modified hangers and replaced some small bore piping on the HPCI steam supply piping. The modification was part of a program to reduce the excessive vibration observed on this piping **(URI-95-018-01)**. The program to reduce the vibration is also discussed in section **E2.1** of this report.

The inspectors noted appropriate use of procedures and good work controls. Maintenance personnel were familiar with the job scope and task requirements. The inspectors identified no negative issues.

Following HPCI system restoration, the inspectors observed that the magnitude of the piping vibration had been reduced. Some minor vibrations still exists, and the licensee plans to install vibration measurement devices to help determine the future corrective actions.

M1.3 Surveillance Activities

The inspectors observed the conduct of portions of the following surveillance tests (STs), identifying no negative issues:

- Residual heat removal (RHR) Heat Exchanger Performance test
- RHR Heat Exchanger Performance Calculation test
- E3 EDG Load Run test
- Calibration Check of reactor core isolation cooling (RCIC) Steam Line High test
- Average power range monitoring (APRM) System Calibration During Two Loop Operation test
- Core spray (CS) Loop B Pump, Valve, Flow, and Cooler Functional and Inservice test

M1.4 Conclusions - Conduct of Maintenance and Surveillance

The inspectors concluded that PECO performed the HPCI steam line modification work effectively, in accordance with approved procedures. This modification reduced the magnitude of the steam line vibration.

PECO personnel conducted the observed STs well demonstrating good communications and plant system knowledge.

However, as noted in sections E1.1, E2.2, E2.3 and E2.5, the inspectors identified several instances where either the basis for surveillance testing was not full understood and documented or where the surveillance test specified to meet TS requirements did not fully verify operability.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Scaffolding Installation and Control (OPEN) Violation 97-02-02: Scaffolding Erected Causing Unanalyzed Conditions

Scope:

During a plant tour on March 21, the inspectors noted scaffolding installed in contact with or in very close proximity (less than an inch) to safety-related equipment in the Unit 3 A and C RHR pump rooms. A review of the design and procedural requirements for scaffolds followed to verify the adequacy of this temporary construction with potential impact on safety-related systems and components.

b. Observations and Findings:

During the walk down, the inspectors identified a concern with scaffolding constructed in contact with or in close proximity (within 1 inch) to safety-related components. The inspectors related these concerns during a meeting with PECO management. The items of concern, which had not been reviewed by PECO engineering to assess the possible effects on safety-related equipment, were as follows:

- MO-3-10-089A limitorque operator
- "A" RHR room cooler emergency service water (ESW) piping and flow indicator
- Vent line to RHR heat exchanger with HV-3-10-165A
- Seismic support to MO-3-10-089C
- Electric supply cable to "A" RHR cooler fan
- RHR CLG coil 3A out throttle VV DP
- MO-3-10-15C motor
- RHR heat exchanger discharge sample line

On March 24, PECO engineering discussed the conditions of scaffolds in the "A" and "C" RHR pump rooms and concluded that a close inspection should be done. During this inspection, engineering identified unreviewed deficiencies between the installation and the scaffold specification M-C-700-335, "Scaffold Request; Erection; and Disassembly" in the RHR pump room and at Unit 3 HPCI. PECO, through M-C-700-335, set standards for the control of deviations from quality standards for design of scaffolds. PECO engineering concluded that no operability concerns were associated with the scaffolding erected in the Unit 3 "A" and "C" RHR pump rooms, but PECO chose to correct scaffold deviations immediately in lieu of rigorous evaluations to determine the resultant effects on safety-related components.

On March 26, the inspectors found other deviations while touring the D HPSW pump bay, including scaffolding up against the electrical connector box to the Unit 2 D HPSW pump motor, and other concerns as follows:

- Scaffolding touching the conduit from PS-02380B HPSW 2B/D pumps discharge header pressure switch
- Proximity to the oil line from the Unit 2 D HPSW pump

PECO performed a stand-down of the scaffold team craft, planners, and supervisors. A walkdown of all scaffolds in safety-related areas performed by the licensee revealed a total of 38 items that deviated from the standard, without prior engineering approval. These items have been evaluated as not affecting the safety function, or have been corrected.

c. Conclusions:

PECO established the procedure M-C-700-335, "Scaffold Request; Erection; and Disassembly" to provide measures to ensure that appropriate quality standards were specified and included in design documents, and that deviations from such standard were controlled.

The failure of scaffolding personnel to follow M-C-700-335, as described above and the failure of PECO to self-identify this issue, resulted in failure to maintain safety- related components in an evaluated condition. The scaffolding amounted to an unanalyzed temporary modification to the plant. The inspectors considered this a violation of 10CFR50 Appendix B, Criterion III, DESIGN CONTROL, which requires PECO to evaluate changes in the plants design prior to implementation. **(Violation 50-277,50-278/97-02-02)**.

M3 Maintenance Procedures and Documentation

M3.1 Inservice Testing Program Review

a. Scope (73756):

The inspectors reviewed selected aspects of the Peach Bottom inservice testing (IST) program.

b. Observations and Findings:

The inspectors conducted a review of IST program requirements for selected components in the RHR, RCIC, CS, high pressure coolant injection (HPCI), and high pressure service water (HPSW) systems. The selection of these systems was based, in part, on their risk significance in the Peach Bottom Probabilistic Safety Analysis (PSA). The inspectors verified that PECO performed these tests according to code test methods and frequencies, reviewed administrative controls for tracking tests, and reviewed test acceptance criteria and results. The inspectors also assessed the program using guidance in NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants.

PECO adequately documented the IST program in specification M-710, Revision 6, dated December 15, 1995. The inspectors noted that the program was in the process of being revised based on the guidance issued in NUREG-1452, dated April 1995.

The inspectors found that the licensee was performing a design bases review in conjunction with developing and reviewing an IST bases document as recommended in NUREG-1452. The inspectors observed that the IST coordinator was resolving some potential non-conforming conditions as part of this review. These items were being addressed on an individual basis, which was inconsistent with the recommendations in

Section 7.2 of NUREG-1452. Specifically, the NRC recommended that, before commencing the design bases review, the licensee develop a document to address the non-conformances on a programmatic basis.

The inspectors reviewed the IST program and test results for selected pumps and valves and found that testing was generally being performed consistent with requirements and NRC guidance. The inspectors noted and discussed a few discrepancies between the draft IST bases document and the IST program with the IST coordinator, who stated that they were being addressed as potential non-conformances. The inspector also found a notable discrepancy with the IST acceptance value for the core spray (CS) pump minimum flow check valves, as discussed in Section E2.5 of this report.

c. Conclusions:

The inspectors concluded that PECO conducted IST on selected safety-related components according to code requirements and NRC guidance. The licensee had initiated some IST program enhancements consistent with NUREG-1482 guidelines.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 Use of Overtime During Unplanned Maintenance

a. Scope:

During the repair of the E1 EDG in February 1997, PECO used overtime to complete governor replacement and tuning. The inspectors reviewed documentation to verify that the licensee satisfied TS 5.2.2 requirements for use of overtime.

b. Observations and Findings:

During troubleshooting, governor replacement, and post-maintenance testing on February 4 through February 10, 1997 to restore the E1 EDG, the NRC inspector noted individuals with a significant number of overtime hours. TS and administrative procedures limit the number of hours that individuals can work on safety-related tasks without PECO management's prior approval. Overtime is not to be used on a routine or continuous basis, unless during an outage. A subsequent review of the daily time worked record/sheets and working hours limitation deviation form, showed workers had exceeded the limit of 24 hours worked over a 48 hour period without prior approval. Documentation showed that three individuals had worked 41.5, 29.75, and 26.0 hours within a 48 hour period without prior PECO management approval.

c. Conclusions:

The failure by PECO to provide management's documented prior approval for individuals to work greater than 24 hours in any 48 hour period on the restoration of the E1 EDG is a violation of TS 5.2.2. The inspector found that this issue was of low safety consequence and determined that it met the conditions for a non-cited violation in accordance with Section IV of the NRC Enforcement Policy.

III ENGINEERING

E1 General Engineering Comments

E1.1 Station Blackout Line Testing (OPEN) Unresolved Item 97-02-03; Station Blackout Line Load Testing Acceptance Criteria and Basis Documentation

a. Scope:

The inspector reviewed the testing conducted on the station blackout (SBO) line during the week of April 28. PECO conducted this testing to meet a commitment made in its August 1992 submittal to the NRC and in the subsequent NRC safety evaluation. The inspector specifically reviewed the basis for the magnitude of the KW loading during the test.

b. Findings & Observations:

The inspector found:

- PECO put the SBO line in a proper configuration to allow the testing using portable resistive load banks. The plant configuration was properly controlled using the ST and associated SOs procedures.

- Inconsistencies between the surveillance test loading/acceptance criteria and the PECO calculated design line load. The PECO ST stated that the line would be tested at greater than 7,000 KW. This was consistent with the PECO submittal and the NRC safety evaluation which stated that 7,000 KW would be the design load to get both units to safe shutdown. The inspector found that, per calculation PE-0154, including a revision made in July 1996, the design KW load from the Conowingo transformer was 8,350 KW, which, due to impedance and resistance loss, would supply the designed 7,210 kw to the safety-related emergency busses. During the actual test, PECO reached a load at the load banks of 7,600 KW.

- The SBO design and testing requirements were not clearly discussed in the UFSAR or the TRM basis. Neither document gave specifics as to the design loading and testing requirements.

The inspector discussed these issues with PECO engineering. PECO stated that they would review these issues.

c. Conclusions:

PECO conducted the SBO line testing well. However, the test acceptance criteria could not be clearly justified or be specifically linked to the design load as specified in the PECO calculations. Further, the UFSAR and TRM contained no detail on line loading or test acceptance criteria. The inspector considered this issue unresolved pending review of PECO actions to address these issues. **(Unresolved Item 97-02-03).**

E1.2 Battery Cell Rupture

a. Scope (37550):

The inspector reviewed PBAPS engineering performance following the rupture of 3A Station Battery Cells 49/50 on April 14, 1996 while on a single cell charge of 2.5 Volts.

b. Observations and Findings:

The inspector found that PBAPS engineering staff conducted an extensive investigation into the root cause of the battery rupture and provided for specific corrective action to preclude similar failures in the future. The investigation included review of battery inspection procedure, electrolyte specific gravity measurements, probability of ignition of explosion from external or internal spark, and anomalies in the battery design.

In conducting the investigation, the licensee utilized the collective expertise from within PECO Energy (including examination by the PECO Energy Valley Forge Materials Laboratory), battery manufacturers, battery consultants, and a comparison with a recent similar incident at Perry Nuclear Power Station (PNPS).

The inspector found the battery maintenance/testing procedures to correctly follow the recommendations of IEEE 450, and the battery charging was within acceptable voltage levels. Reported specific gravity measurements of the electrolyte were found to be low, but subsequent checks of the measurement technique found incorrect use of a digital hydrometer by test personnel. Comparative analysis of this incident with a similar failure at the Perry Station provided no clue to the root cause of the PBAPS failure. There were mixed professional opinions as to whether the explosion ignition was from external or internal sources.

Corrective action taken by the licensee included changes in the battery inspection procedure, training in the correct use of the digital hydrometer, and careful observation of the quality of the battery internals.

c. Conclusions:

PBAPS engineering comprehensively pursued the resolution of the battery rupture issue. Although the reason for the explosion was not determined, the licensee provided a corrective action program that it believed would preclude future battery explosions.

E1.3 Improper Documentation of E42 Bus Modification Finding

a. Scope (37550):

The inspector reviewed the engineering performance related to the inadvertent simultaneous closure of bus breakers E242 and E342, paralleling two offsite power sources.

b. Observations and Findings:

The inspector found that during a licensee walkdown of bus breaker modification P00262 E42, it was annotated in an Engineering Change Request (ECR) that an undocumented jumper was left installed by modification personnel (contractors). The ECR did not give instructions nor did the design drawings note the disposition of the undocumented jumper. Consequently, problems occurred with the proper functioning of the breaker E342 during testing. However, the testing continued without determining the root cause of the E342 malfunction, and further maloperation occurred.

The engineering director emphasized the importance of stopping further testing until troubleshooting the problem is completed. The corrective actions implemented by the licensee included the responsibility of ECR reviewers to be aware of the findings documented in the walkdown report. Discrepancies identified are to be documented for evaluation of plant impact. Since the modification was performed by an outside firm, they will be trained in the expectations of verification signoffs. Lessons learned from this event will be distributed to plant engineering and engineering branch heads.

c. Conclusions:

The inspector determined that the engineering oversight and training of modification contractors was weak in this instance, but that PECO had taken adequate corrective actions.

E2 Engineering Support of Facilities and Equipment

E2.1 (UPDATE) Unresolved Item 95-18-01; High Pressure Coolant Injection Steam Line Vibration

a. Scope (37550):

The inspector reviewed the status of the program to determine the root cause of the excessive HPCI steam supply pipe vibration, and the action taken to reduce the level of this vibration.

b. Observations and Findings:

The inspector found the welding of Unit 3 HPCI system steam line piping supports is near completion, and the program is proceeding on schedule to install the necessary vibration and flow characterization instrumentation on/in the HPCI and MSL steam lines. The licensee reported that reductions in steam line vibration have already been noted as a result of changes in the numbers and locations of pipe supports completed to date. In reviewing generic information, the licensee found that improving support of the HPCI piping system has reduced pipe vibration at other plants. The licensee also found that reductions of steam pressure were noted in other plants with vibrating HPCI steam lines. Reduction in steam pressure of similar levels in the Unit 3 HPCI steam line was also noted, however, the relationship between the reduced steam pressure and vibration has not been determined.

c. Conclusions:

The inspector found that the program to determine the root cause of the excessive HPCI/MSL pipe vibration and corrective action to reduce the level of vibration in this steam line continues on schedule. Some success was achieved in reducing the vibration. URI-95-018-01 will remain open, pending successful completion of the program.

E2.2 (OPEN) Violation 97-02-04; Inoperable Reactor Feed Pump High Reactor Level Trip (OPEN) Unresolved Item 97-02-05; Review of Instruments that Require Electrical Power to Perform a Technical Specification Function

a. Scope:

PECO entered a two hour TS action (TSA) on April 14 for loss of the C reactor feed pump (RFP) high water level trip capability on Unit 3 due to the discovery of a blown fuse. The blown fuse made the trip function, required by TS 3.3.2, inoperable. After fuse replacement, PECO exited the TSA. The inspector reviewed the sequence of events leading to identification of the blown fuse.

b. Findings and Observations:

The inspector found:

- On April 4, the RO noted that the "C" RFP turbine reset indicating light was not properly lit. PECO wrote Action Request (AR) A1083198 for this issue and changed the bulb; however, the light was still not lit after the bulb replacement. The AR noted no operability concern.

  At that point, operators were unaware that this normally lit red light also indicated availability of power to the RFP trip circuit, including the high reactor vessel level trip.

- On April 11, the system manager identified that the light being out could indicate loss of power to the high level trip and informed engineering management of the possible two hour required action in TS. The system manager recommended that the fuse be checked. The system manager noted this on AR #A1083198.

- The fuse identified by the system manager went unchecked until April 14. After replacement of the light socket during troubleshooting of a battery ground and trying to get the light relighted, the FIN team discovered the blown fuse UU F11. This resulted in PECO entering an LCO from 9:50 a.m. to 10:18 a.m. during the fuse replacement. The inspector noted the entry in AR# A1083198 and brought it to the control room operators' attention.

- Following identification by the inspector on April 14 that PECO should have taken actions to correct the condition earlier, on April 15 PECO initiated a PEP to investigate the issue. Further, PECO confirmed that the fuse for the high water level trip capability on the C RFP had been inoperable since April 4, longer than the

two hour limit in TS Section 3.3.2.2. PECO found that this condition was reportable and submitted a licensee event report.

During review of this issue the inspector identified that the surveillance test specified by PECO to meet the daily channel function check of the high level trip instrument was not complete, since it did not verify power to the feed pump trip logic. PECO agreed with this finding and was reviewing other instrumentation to determine if similar conditions existed elsewhere.

c. Conclusions:

Engineering follow-up of the C RFP high water reactor vessel level trip function circuit fuse issue was poor. The trip function circuitry was incapable of operating from April 4 to April 14. This exceeded the TS limit of two hours to restore the high water level trip capability and, therefore, a violation of the TS Section 3.3.2.2 occurred. **(Violation 97-02-04)**

The surveillance test specified for the high reactor vessel level trip channel check was inadequate in that it did not verify that the power was available to the feed pump trip logic. The inspector considered this an unresolved item pending review of PECO's actions to identify other circuits that need power to operate. **(Unresolved Item 97-02-05)**

E2.3 Emergency Diesel Generator Ventilation Review (OPEN) Unresolved Item 97-02-06: Operability Testing of the Emergency Diesel Generator Ventilation Systems

a. Scope:

The inspectors walked down the EDG ventilation system, reviewed the design basis, and reviewed the criteria for system and component operability against design basis assumptions. The inspector also performed a review of testing, maintenance, and operation of the compartment ventilation to assure PECO's actions verified this support system's ability to support EDG capability.

b. Finding and Observations:

Tours of each EDG ventilation system showed that the louvers of each system were in various configurations. The inspector reviewed system operating procedures and piping and instrument drawings and discussed the operation with the system manager. The inspector found that these louvers are positioned based on the internal temperature of the EDG compartments. However, it was unclear why some dampers were closed and some half open, when, by design, they all should have been in the same position.

Review of the EDG surveillance procedures indicated a lack of verification of the proper operation of the EDG ventilation system fans and louvers during the monthly test runs. The operations services manager agreed that some change to these procedure would be appropriate but believed that the EDG had remained operable. Because the EDGs have operated satisfactorily during the test run for short periods of time (i.e. 1 hour under load), the confidence that the EDGs are and have been operable is reasonable.
The inspector reviewed calculation PM-498, "Emergency Diesel Generator Building Cooling

Load and Ventilation Requirements," and determined that PECO has established that at the design basis maximum outside temperature of 95°F the diesel room temperature would be 107.7°F. This temperature is above the alarm setpoint of 107°F for the compartment maximum temperature, but below the 110°F maximum compartment temperature for 3250KW rated load for the EDG. The calculation also indicated the need for only the supply fan operability when the outside temperature remained below 80°F. Above 80°F, both supply and supplemental fans are required for the proper functioning of the EDG.

The design basis outside temperature for the EDG to be rated at 3250 KW is 95°F. This criterion was used to size the equipment in the EDG compartments for ventilation. This would maintain the temperature less than the maximum temperature at this rating of 110F. The maximum room temperature for the EDG to maintain 3100 Kw is 122°F, which corresponds to a temperature of 107°F max outside temperature. A summary of these parameters is provided below:

Outside Max Temp	Compartment Max Temp	Fans Required	Rating
<80°F	110°F	Supply Fan Only	3250KW
>80°F	110°F	Both Fans Operable	3250KW
<95°F	110°F	Both Fans Operable	3250KW
<107°F	122°F	Both Fans Operable	2600KW
>107°F	122°F	Both Fans Operable	<2600KW

When outside temperature is above 107°F, the EDGs are inoperable, but could carry some indeterminate amount of load.

c. Conclusions:

The EDGs have criteria to carry the design load for an hour during testing which gives reasonable assurance that the EDGs have been operable. To ensure full capability, the support systems for the EDG must also be verified operable. The operability of the EDG is dependent on the operability of the ventilation system and, therefore, operability verification of the ventilation system is required. This issue remains unresolved pending review of PECO's actions on the verification and documentation of assurance of the compartment ventilation systems' to support EDG safety function capability. **(Unresolved Item 97-02-06)**.

E2.4 High Pressure Service Water System Piping Leak

a. Scope (37551):

The inspector reviewed PECO's actions following the discovery of a through-wall leak in the Unit 3 high pressure service water (HPSW) system.

b. Observations and Findings:

On April 15, a non-licensed operator discovered a minor through-wall leak in the Unit 3 HPSW system, downstream of the B residual heat removal (RHR) heat exchanger. The size of the hole was estimated to be about 2 mm in diameter, and the leak rate was less than 1 gallon per minute. The hole was in the vicinity of a weld near a flow orifice.

Engineering and operations took prompt actions to evaluate the leak per NRC guidance in Generic Letter (GL) 90-05 and to perform an operability determination. Initial investigation determined that the leak was within the capability of the room sump pumping capacity, and its location did not have the potential to impact the heat removal capability of the RHR heat exchanger. PECO performed initial ultrasonic (UT) measurements of the pipe wall in the vicinity of the leak on April 15. These UT results showed that there were other flaws below the minimum wall thickness. Engineering performed calculations that demonstrated that the piping structural integrity was maintained and the system was determined to be operable. Operations covered the affected area with rubber for housekeeping purposes.

PECO performed more accurate UT measurements on April 17, which revealed thinner wall thicknesses, in specific locations, than the original results. However, engineering revised the original calculations and verified that structural integrity was still maintained. The licensee found minor weaknesses in the methodology for the original UT measurements and initiated corrective actions.

The inspectors reviewed the licensee's calculations and operability determination and identified no concerns. Station management discussed the plans for repair of the HPSW piping and for additional inspection of piping as specified in GL 90-05. The inspectors were concerned about engineering's initial plans to delay the additional inspections of the piping until the cause of the leak was determined. After further review, engineering concluded that additional inspection prior to detailed evaluation of the cause was a more appropriate and conservative approach.

Repair of the HPSW piping was accomplished in early May by replacing the affected section of piping with a flanged spoolpiece. The faulty section of pipe was sent for laboratory analysis, to determine the mode of failure.

The licensee performed inspections of five additional locations in the Unit 3 HPSW system and found all to be within code allowable thickness requirements. As further generic corrective action, engineering added 32 welds to the HPSW preventive maintenance weld inspection program. The inspectors considered these actions to be good.

c. Conclusions:

The inspectors concluded that overall engineering performance in response to the minor leak in the Unit 3 HPSW system was very good. Engineering staff followed GL 90-05 guidance for assessing the structural integrity of the affected piping and made plans for code repairs, both of which were performed in a prompt, thorough manner. However, initial plans for delaying the augmented piping inspections discussed in GL 90-05 were

judged to be non-conservative. Other planned and completed corrective actions were considered very good.

E2.5 Core Spray System Minimum Flow Rate

a. Scope (37551):

The inspectors compared selected IST acceptance criteria with the design and licensing bases for the CS.

b. Observations and Findings:

During a review of valve IST requirements for CS, the inspectors noted a discrepancy between the minimum flow line flow rate for the pumps, as specified in IST/surveillance test procedures, and the corresponding required flow rate listed in design and licensing basis documents.

The minimum flow line is designed to allow for a minimum amount of flow in the system to prevent pump damage due to overheating when operating at or near shut-off head conditions. The CS Design Basis Document P-S-44, states that the minimum flow rate is 312.5 gpm, or 10% of rated system flow. This safety related parameter was also documented in PECO's response to NRC Bulletin No. 88-04, dated June 30, 1988. Further, the updated final safety analysis report (UFSAR) Figure 6.4.2, Core Spray System Process Diagram, lists the design flow rate as 312.5 gpm. Additionally, the Peach Bottom IST basis data sheets for the core spray minimum flow check valves, which were in draft form at the time of the inspection, indicated the same design flow rate.

Contrary to this design basis data, the IST/ST acceptance criteria for the minimum flow check valves was only 165 gpm. The inspectors brought this discrepancy to the attention of the back-up system manager. After review, the system manager and his supervisor indicated that engineering had made a change to the minimum required flow rate from 10% of rated system flow, to 5% of rated system flow, or about 156 gpm. The change was based on a 1991 PECO memorandum that referenced a Boiling Water Reactor Owners Group interim response to NRC Bulletin 88-04. The system manager recognized that the memorandum was not adequate design change documentation and stated that he initiated an engineering change request to design engineering to provide the engineering basis for this change.

At the end of the inspection period, design engineering was still reviewing the adequacy of the IST/surveillance test acceptance criteria. Preliminary results of this review indicated that the 165 gpm IST criteria was acceptable, given the fact that the maximum period the pump would be expected to operate at the minimum flow rate would be 30 minutes during design basis accident conditions. However, this position was not currently documented. Engineering staff also stated that they considered the 312.5 gpm specification to be a nominal value, rather than a minimum value. Again, this was not reflected in design basis documents. The inspectors will review the final results of the design engineering review.

The licensee also reviewed the actual recorded surveillance test results for the core spray minimum flow rate and found they were consistently about 312.5 gpm. Thus, the test results reflected values close to the design basis flow rate. Based on this information, the inspectors concluded there was no operability concern and the safety impact of the issue was minimal.

The inspector observed that engineering had missed relatively recent opportunities to identify the flow rate discrepancy. These opportunities included: a) the development and review of the core spray system Design Basis Document in December 1993, b) Peach Bottom's UFSAR review project begun in the summer of 1996, and c) the development of the IST basis documents, which were still in progress.

c. Conclusions:

The inspectors concluded that the issue regarding a discrepancy between the IST acceptance criteria and the design and licensing basis data for the core spray system minimum flow rate revealed weaknesses in both engineering documentation and performance. Further, engineering had missed opportunities to identify this discrepancy during recent design basis reviews.

E4 Engineering Staff Knowledge and Performance

E4.1 Walkdown of Plant Facilities with System Managers

a. Scope (37550):

The inspector conducted walkdowns of the Unit 2 and 3 EDG facilities, the Unit 3 HPCI pump piping, and the safety-related battery rooms to assess the overall cleanliness and orderliness of the facilities. To assess the capability of the respective system engineer, the inspector discussed with each engineer the management of the facility, significant events, the mode of training and utilization of back-up system managers.

b. Observations and Findings:

The inspector found good cleanliness and an orderly control of the working environment. The battery rooms and EDG facilities were in excellent condition. The Unit 3 HPCI pump and turbine room piping was under modification to support the vibration studies and modification of pipe supports. There was a reasonable degree of orderliness for a facility under modification.

The inspector discussed system operational issues with the systems managers during the walkdown, and the managers responsively reflected knowledge of operation and maintenance procedures, recent significant events, an ownership attitude for their respective facilities.

The inspector found that the system manager for the battery and HPCI facilities had a designated back-up responsible for management of that system should the need arise. The back-up position was also a training opportunity for system management position for that

facility. In the case of the EDG facility, there was no designated back-up, but the EDG system manager for Limerick was present during the walk-down and the system manager indicated his availability should the need arise.

c. Conclusions:

The inspector found the general appearance of facilities inspected to be clean and orderly. The system managers of the facilities were knowledgeable in the functioning and management of their respective systems.

E7 Quality Assurance in Engineering Activities

E7.1 Updated Final Safety Analysis Report Review Program (37550)

a. Scope (37550):

The inspector reviewed the PBAPS Updated Final Safety Analysis Report (UFSAR) verification program to identify discrepancies between the UFSAR and the facility.

b. Observations and Findings:

The inspector found that PECO targeted UFSAR sections for review on the basis of probabilistic safety assessment (PSA) significance and engineering judgement. The program was planned to be implemented in three phases. Initially, in Phase I, 30 sections of the UFSAR were examined by three person teams. Phase II provided for a more structured review, expending four man-years to complete a review of 20% of the UFSAR. At present, PBAPS was giving consideration to completion of the verification program in Phase III, but no definitive decision had been reached.

The inspector noted that the review team assignments were specific, with specific goals to be achieved at particular times. Results of findings were monitored in terms of discrepancy findings, changes implemented, and change document aging.

c. Conclusions:

The PBAPS UFSAR verification review to date has been a well managed program to provide documents with corrected errors, absence of ambiguity, and an accurate reflection of the structural and operating requirements of the plant.

E7.2 Design Basis Document Revision; (OPEN) Inspector Follow Item 97-02-07; Review of Design Basis Document Review and Approval Process

a. Scope (37550):

The inspector reviewed the performance of PBAPS engineering in review and correction of the design basis documents (DBDs) as part of an overall configuration management program.

b. Observations and Findings:

The inspector reviewed the DBD revision program. Review of three system documents RHR PS-09, EDG Auxiliaries PS-07, and HPCI PS-03 found them to clearly describe the system operation and reference sources. However, in document PS-07, the inspector noted that the review signatures were not complete. Several others had no review signatures, other than a typed acknowledgement that PECO NQA procedures had been followed. On notification of this finding by the inspector, PECO immediately reviewed all the completed DBDs and found many others incomplete. However, the licensee indicated that the reviews had been completed, but the signatures had not been included in the DBD documents.

c. Conclusions:

The quality of the rewritten DBDs was good. The absence of many review signatures in the documents is an inspection follow item, pending location of original review documents or completion of the review process. **(Inspector Follow Item 97-02-07)**.

E8 Miscellaneous Engineering Issues

E8.1 PBAPS Site Equipment and Material Focus Program

a. Scope (37550):

The inspector reviewed the PBAPS Site Equipment and Material Condition Focus Program.

b. Observations and Findings:

The inspector found that the program provided a list of key site issues recognizing potential challenges to plant operation, operational enhancements, and plant strategies in resolution of problems. PBAPS engineering documented a detailed description of the issues, assignment of responsible engineers, and a schedule for completion of problem resolution.

c. Conclusions:

The inspector found that PBAPS engineering continues to provide a well coordinated effort to identify, publicize, and resolve chronic plant issues.

IV PLANT SUPPORT

P1 Conduct of Emergency Preparedness Activities

P1.1 Effectiveness of Licensee Controls

a. Scope (82701):

The inspector reviewed the licensee's tracking systems used for tracking EP related action items. Also, the EP self assessment program was reviewed to determine the effectiveness

of licensee controls.

b. Observations and Findings:

PECO generated action items were from drill critiques, self assessment findings and training feedback. The inspector reviewed these items and found that they were appropriately prioritized and closed in a timely manner. PECO stated that it plans to begin performing a monthly trending analysis to identify the number of EP action items per emergency facility, as well as repeat items.

The licensee initiated an EP self-assessment program in late 1995. The inspector reviewed the self-assessment report for 1996. The report contained "strengths," "weaknesses," and "watch areas." The inspector noted that all corrected weaknesses were upgraded to a "watch area" for continual review and assessment. The inspector noted this to be a very good initiative because the licensee continued to review the previous weaknesses to ensure that corrective actions was appropriate.

The EP staff maintains an automated job task tracking system for routine work assignments to ensure Emergency Plan (E-Plan) commitments were met in a timely manner. For example, the system included quarterly verification of phone numbers, and monthly or quarterly surveillance tests, and equipment inventories. The inspector reviewed the job assignment list and determined that it served as an excellent tool for the EP staff in assuring that E-Plan and Emergency Response Procedure (ERP) commitments were met in a timely manner.

c. Conclusions:

PECO is very good at identifying, tracking, and resolving generated action items. The EP generating tracking system is an excellent tool for assuring EP assignments were completed. The self assessment process was good.

P2 Status of Facilities, Equipment and Resources

P2.1 Operational Readiness of Emergency Facilities

a. Scope (82701):

The inspector conducted an audit of emergency facilities and equipment kits in the operations support center (OSC), technical support center (TSC) and emergency operations facility (EOF). A tour of the local community hospital was also conducted (see section P8). The inspector reviewed facility equipment inventories and surveillance tests conducted during the past year for completeness, accuracy, and compliance.

b. Observations and Findings:

The equipment and inventory program for the emergency facilities is maintained by the EP Facilities Equipment Technical Assistant, and equipment and supply inventories were conducted on a quarterly basis. The inspector reviewed equipment and supply inventory

checklists for 1995 and 1996, respectively. The inspector determined that inventories were conducted in a timely manner and immediate corrective action was taken on identified deficiencies.

The inspector toured the emergency facilities and found them to be operationally ready. The TSC was recently upgraded and included a new state-of-the-art telephone system and the public announcement system was upgraded in the OSC due to several audio problems identified in past drills and exercises. The inspector checked several emergency equipment kits and emergency supply cabinets located in the emergency facilities and found them to be stocked in accordance with licensee procedures.

Prior to entering the TSC, ERO staff assigned to the TSC are required to acquire a thermoluminescent dosimeter (TLD) and a personal alarming dosimeter. The inspector performed operability checks on the 50 alarming dosimeters and found: 1) five alarming dosimeters out of calibration; 2) four alarming dosimeters with low batteries; and 3) ten alarming dosimeters that were inoperable. The inspector reviewed the methods for maintaining these instruments and found that the calibration period was 180 days, the instruments were calibrated and replaced on the same day, and were not required to be operability tested during the quarterly inventory checks. The inspector discussed this matter with the dosimetry specialist and the manager, EP who were unaware of the problems. The dosimetry specialist immediately replaced all the dosimeters and modified a station routine test procedure requiring calibration verification of the dosimeters on a monthly basis. The manager, EP, added to the quarterly inventory list routine operability checks to be performed during inventory checks. Although the licensee did not have these instruments available for some indeterminate period of time, the inspector determined that TSC personnel would have had their TLDs and additional alarming dosimeters could be obtained from onsite within approximately 20 minutes.

c. Conclusions:

With the exception of the problem with the alarming dosimeters at the TSC, the inspector concluded that the licensee maintained a very good inventory program and that the emergency facilities and equipment were operationally ready.

P3 Procedures and Documentation

a. Scope (82701):

The inspector reviewed the changes made to the common (Peach Bottom and Limerick) PECO Nuclear E-Plan and the Peach Bottom ERPs since the last inspection. The changes were reviewed in the NRC Region I office prior to arriving onsite and discussed with the licensee during this inspection. A list of the changes reviewed is included as Attachment 2 to this report.

b. Observations and Findings:

The inspector discussed with the licensee several deletions and changes recently made to its E-Plan. Most of the changes were insignificant; however, the inspector noted some

paragraphs were deleted that were initially determined by the inspector as decreasing the effectiveness of the plan. For example, paragraph 5.2.9, Revision 8 of the E-Plan, describing the direct communication tie lines between Peach Bottom and the Conowingo Dam in the event of a flood or failure at the dam was deleted. The licensee stated that this paragraph had been omitted due to communication upgrades; however, they still maintained the capability, but not as originally described in the E-Plan. The licensee recognized that a change should have been made rather than a deletion and immediately committed to adding a revised paragraph describing the changed process.

Other examples included: 1) the deletion of the services support position in the TSC in the ERO organization chart, (Exhibit 3-3), which wasn't deleted but redefined and moved under a different selection manager; 2) IRP 340 entitled, "Field Survey Group", where several paragraphs were deleted for describing responsibilities while doing field surveys. When questioned concerning these omissions, PECO stated that the reason for the omission was not entirely known but it would be pursued. In a previous NRC inspection (50-277,278/95-14), similar problems were identified. The licensee acknowledged that its quality control process for E-Plan and ERP changes still needs to be improved and has committed to review the inspector's comments, make the needed corrections, and continue to improve their E-Plan quality control process.

c. Conclusions:

Except for the minor problems noted by the inspector, which the licensee committed to correct, the inspector concluded that none of the changes reduced the emergency planning effectiveness and assessed this area as adequate. The licensee stated that it needs to improve the quality control process for changes and deletions to it's E-plan and ERPs and to ensure that they do not compromise the original intent of the approved plan.

P5 Staff Training and Qualification

a. Scope (82701):

The inspector reviewed EP training records, training procedures, status reports, ERPs and the licensee's E-Plan to evaluate the licensee's EP training program. Also, the inspector reviewed drill and exercise critiques, surveillance and pager test records to ensure the licensee was adhering to the commitments made in its E-Plan.

b. Observations and Findings:

The EP Drills/Training Analyst maintains the EP training records for ERO responders. The inspector reviewed the ERO training records and verified that the ERO responders were qualified to fill their assigned emergency response positions. Also, the inspector verified that new responders who had not completed ERO qualification training, were not on the weekly on-call responder list. Monthly, the licensee sent a training status report to all ERO Selection Managers (SM). This allowed the SM to ensure that ERO qualifications for their team members were met. If an individual's ERO qualifications expired, they were immediately removed from the ERO list and an action request letter was sent to the SM.

This required the SM to respond in writing and the SM was ultimately held responsible for ensuring that individuals on the teams were qualified or replaced.

The EP staff provided emergency response training for the ERO. In reviewing lesson plans, critiques and discussions with training attendees, the inspector found that the EP staff was very conscientious, thorough and dedicated to maintaining an excellent training program. For specialized classes, (chemistry or health physics), lesson materials were reviewed by managers with technical expertise and classes were conducted with the assistance of that manager. Also, the EP staff appeared to be very responsive to class critiques and made adjustments accordingly.

The inspector reviewed drill, exercise, pager and surveillance test records for 1995, 1996, and the first quarter of 1997. All required drills, exercises and tests were conducted. Particularly noteworthy is that the licensee ensured that all records were reviewed by management and the information was trended for identification of any long term problems.

The corporate training program was reviewed during the Limerick NRC program inspection conducted in October, 1996 and found to be excellent.

c. Conclusions:

The inspector determined that the ERO members were currently qualified and all required drills, exercises pager and surveillance tests were conducted. Training was effectively being conducted by the EP staff. Overall, the inspector assessed this area as very good.

P6 Organization and Administration

a. Scope (82701):

The inspector reviewed the licensee's EP group staffing, management and ERO personnel to determine if changes that had occurred since the last Peach Bottom program inspection (July 1995) had any adverse effect on the EP program. Also, the inspector interviewed the EP management to assess the adequacy of EP management involvement and control.

b. Observations and Findings:

The licensee continues to maintain strong management support for the EP program. The inspector interviewed the director, site support services, manager, EP/nuclear security and the corporate nuclear security/EP manager separately regarding the EP program, program initiatives and significant issues. All responses were consistent; therefore, the inspector concluded that good communications exist with the EP group.

In the previous program inspection, the licensee had eliminated the site EP supervisor position, one technical EP staff member and acquired the emergency response training program. In March 1996, the site EP Manager/Security was reassigned to Corporate Nuclear Security/EP program and the Corporate EP Manager was reassigned to the onsite EP program. During this inspection, the inspector was informed that in May 1997, the licensee will be switching the managers to the positions they held previously. The

inspector discussed this matter with both the Corporate and onsite managers and they indicated that their one-year rotational assignments were positive experiences and believed the program has improved. The inspector reviewed these changes, interviewed the EP staff and in accordance to the findings of this inspection, and determined that these changes had no adverse effect on the EP program. The inspector determined that a contributing factor to the success of the rotation was the experience and knowledge of the individual EP staff members.

c. Conclusions:

Overall, the management and organizational changes to the EP Program appeared to have no adverse effect on the EP program.

P7 Quality Assurance in Emergency Preparedness Activities

a. Scope (82701):

The inspector reviewed Audit Reports No. A0956203 and A0967117, of the PECO Nuclear EP Program, conducted in 1995 and 1996, respectively. The inspector also reviewed audit plans, checklists procedures and interviewed personnel from the Nuclear Quality Assurance (NQA) Department regarding the process for conducting a program audit.

b. Observations and Findings:

The NQA staff conducted a combined annual audit of the EP Program at Limerick, Peach Bottom and Corporate Headquarters over a three week period in 1995 and 1996. Audits were conducted using six person team members from all three sites and the team utilized an audit plan and detailed checklist. The 1996 audit included an individual outside of the NQA Department and the 1997 audit is scheduled to include an independent EP technical specialist from another utility. The inspector noted that this was a good practice because it provides an independent perspective. Also, the licensee conducted several NQA surveillance throughout the year to determine if the training program and the drills and exercises were sufficient.

The 1996 audit report contained recommendations and deficiencies and the reports met the requirements specified in 10 CFR 50.54(t). However, the inspector noted that the reports did not contain the level of detail expected for describing the activities of the audit team and their observations for supporting their audit findings.

c. Conclusions:

The audit reports met the requirements of 10 CFR 50.54(t); however, the audit reports lacked detail. The inspector assessed this area as good.

P8 Miscellaneous Issues

P8.1 Updated Final Safety Analysis Report Inconsistencies

A recent discovery of a licensee operating its facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR description. Since the UFSAR does not specifically include EP requirements, the inspector compared licensee activities to the E-Plan, which is the applicable document. The following was reviewed as part of the UFSAR review and was found to satisfactorily meet the E-Plan commitments.

- The inspector reviewed chemistry procedure CHE-110 describing the operation of the Post Accident Sampling System (PASS). The procedure was comprehensive and detailed and the inspector verified that the PASS was tested by chemistry technicians on a quarterly basis. The licensee conducted the required PASS drills for 1995 and 1996. Under emergency conditions, the licensee is required by its E-Plan to request, acquire, analyze, and provide PASS sample results within a three hour time limit. The inspector noted during drills and exercises, the licensee had simulated the taking of a PASS sample that never demonstrated if the time requirement would be met. Discussions with the Chemistry Manager believed that they would meet the three hour requirements, however, the licensee has committed to add this demonstration to its objectives for an upcoming drill that will be conducted in 1997 to ensure this requirement is met.

- The inspector toured the Harford Community Hospital and interviewed the administrative coordinator to determine the adequacy of the licensee's medical drills, radiological training and the facility for decontaminating patients. The hospital has a dedicated facility for patient radiological decontamination that was fully equipped and operationally ready. The administrative coordinator was very enthusiastic about the program and indicated that training conducted by the EP staff was very good. Also, the licensee was commended by the administrative coordinator for being very responsive to training and drill critique comments. The inspector determined that the licensee had an excellent rapport with this offsite agency and maintained a very good medical radiological training program.

- The licensee conducted surveillance tests on the main control room (Train A and B) and the TSC emergency ventilation system for filter train leakage of particulate and halides. Also, the surveillance tests were conducted to verify sufficient radioactive methyl iodide adsorption of charcoal filters and sufficient filter train flow to satisfy requirements of the licensee's technical specifications 4.11.A.2.(a)(b)(c).

- The licensee had a contractor perform the annual surveillance test and to analyze the cartridges to determine the absorption collection efficiency of the charcoal beds. The inspector reviewed the 1995 and 1996 surveillance test procedures and a contractor report for 1996 to verify the results of the ventilation tests. The surveillance test procedure was very thorough and detailed and the contractor report confirmed that the licensee had adequately met its technical specification requirements.

P8.2 IFI 50-277,278/95-14-03, Adequacy of the EP Program After Management and Organizational Changes

The inspector concluded through interviews and this program inspection that the management and organization changes did not appear to have an adverse effect on the EP Program (see section P6). This item is considered closed.

S1 Conduct of Security and Safeguards Activities

a. Scope:

The inspector reviewed the security program during the period of April 8 through April 11, 1997. Areas inspected included: effectiveness of management controls; management support; protected area (PA) detection equipment; alarm stations and communications; testing, maintenance and compensatory measures; training and qualification; and control of vehicles. The purpose of this inspection was to determine whether the licensee's security program, as implemented, met the licensee's commitments in the NRC-approved security plan (the Plan) and NRC regulatory requirements.

b. Observations and Findings:

Management support was evident by the upgrades to the security communications system, upgrading and strengthening the process for handling safeguards information, and upgrades in the alarm station consoles to facilitate data input.

Alarm station operators were knowledgeable of their duties and responsibilities and security training was being performed in accordance with the NRC-approved training and qualification (T&Q) plan. Management controls for identifying, resolving, and preventing programmatic problems were generally effective.

The PA detection equipment satisfied the Plan commitments and security equipment testing was being performed as required by the Plan. Maintenance of security equipment was being performed in a timely manner as evidenced by minimal compensatory posting associated with non-functioning security equipment.

c. Conclusions:

The inspector determined that the licensee was conducting its security and safeguards activities in a manner that protected public health and safety.

S2 Status of Security Facilities and Equipment

S2.1 Protected Area Detection Aids

a. Scope:

Conduct a physical inspection of the PA intrusion detection systems (IDSs) to verify that the systems are functional, effective, and meet the Plan commitments.

b. Observations and Findings:

On April 9 the inspector determined by observation of selected testing that the IDSs were functional and effective, and were installed and maintained as described in the Plan.

c. Conclusions:

The PA IDSs met the Plan commitments and NRC requirements.

S2.2 Alarm Stations and Communications

a. Scope:

Determine whether the central alarm station (CAS) and secondary alarm station (SAS) are: 1) equipped with appropriate alarm, surveillance and communication capability, 2) continuously manned by operators, and that 3) the systems are independent and diverse so that no single act can remove the capability of detecting a threat and calling for assistance, or otherwise responding to the threat, as required by NRC regulations.

b. Observations and Findings:

Observations of CAS and SAS operations verified that the alarm stations were equipped with the appropriate alarm, surveillance and communications capabilities, as described in the Plan.

Interviews with CAS and SAS operators found them knowledgeable of their duties and responsibilities. The inspector also verified through observations and interviews that the CAS and SAS operators were not required to engage in activities that would interfere with their assessment and response functions, and that the licensee had exercised communications methods with the local law enforcement agencies as committed to in the Plan.

c. Conclusions

The alarm stations and communications met the Plan commitments and NRC requirements.

S2.3 Testing, Maintenance and Compensatory Measures

a. Scope:

Determine whether programs are implemented that will ensure the reliability of security-related equipment, including proper installation, testing and maintenance to replace defective or marginally effective equipment. Additionally, determine that when security related equipment fails, the compensatory measures put in place are comparable to the effectiveness of the security system that existed prior to the failure.

b. Observations and Findings:

Review of testing and maintenance records for security-related equipment confirmed that the records were on file, and that the licensee was testing and maintaining systems and equipment as committed to in the Plan. A priority status was assigned to each work request and repairs were normally being completed in a timely manner for all work necessitating compensatory measures.

c. Conclusions:

Security equipment repairs were timely. The use of compensatory measures was found to be appropriate and minimal. The maintenance and testing being implemented were reasonable to ensure equipment reliability.

S5 Security and Safeguards Staff Training and Qualification

a. Scope:

Determine whether members of the security organization are trained and qualified to perform each assigned security-related job task or duty in accordance with the T&Q plan.

b. Observations and Findings:

On April 10, 1997, the inspector met with the security training staff and discussed the training requalification program and its effectiveness. Additionally, the inspector interviewed a number of supervisors and officers to determine if they possessed the requisite knowledge and ability to carry out their assigned duties and reviewed the initial training records for two new officers hired since the last inspection.

c. Conclusions:

The inspector determined that training had been conducted in accordance with the T&Q plan. Based on the supervisors' and officers' responses to the inspector's questions, the training provided by the security training staff was considered effective.

S6 Security Organization and Administration

a. Scope:

Conduct a review of the level of management support for the licensee's physical security program.

b. Observations and Findings:

The inspector reviewed various program enhancements made since the last program inspection, which was conducted in February 1996, and discussed them with security management. These enhancements included: upgrades to the security communication system, e.g., installation of a new distributed antenna system to eliminate areas of

marginal radio coverage; upgrade of the offsite communication system to enhance reliability and decrease system maintenance costs; installation of new alarm station console software to facilitate data inputting; and upgrades to strengthen the program for the control of Safeguards Information.

c. Conclusions:

Management Support for the physical security program was determined to be very good.

S7 Quality Assurance in Security and Safeguards Activities

S7.1 Effectiveness of Management Controls

a. Scope:

Conduct a review to determine if the licensee has controls for identifying, resolving and preventing programmatic problems.

b. Observations and Findings:

The inspector reviewed the licensee's controls for identifying, resolving and preventing security program problems. These controls included the performance of the required annual quality assurance (QA) audits, an ongoing self-assessment program and ongoing security shift supervisor oversight. The licensee was also using industry data, such as violations of regulatory requirements identified by the NRC at other facilities, as a criterion for self-assessment.

c. Conclusions:

A review of the licensee controls, including results, indicated that performance errors were being minimized and that controls were effectively implemented to identify and resolve potential weaknesses.

S8.1 Review of Updated Final Safety Analysis Report

A recent discovery of a licensee operating its facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures, and parameters to the UFSAR description. Since the UFSAR does not specifically include security program requirements, the inspector compared licensee activities to the NRC-approved physical security plan, which is the applicable document. While performing the inspection discussed in this report, the inspector reviewed Section 3.2.2 of the Plan titled, "Vehicle and Cargo Access Portals and Posts." Based on direct observations, discussions with security supervision and procedural reviews, the inspector determined that all vehicles were being properly searched prior to entry into the PA and controlled while in the PA, as described in the Plan and applicable procedures.

S8.2 (CLOSED) Violation 96-11-01/EA 96-144, 243; "Failure to Properly Control Safeguards Information"

This violation concerned instances where safeguards information was not properly controlled. The follow-up investigations by the licensee were comprehensive and in-depth. Corrective actions were prompt and comprehensive, and included: the safeguards information being properly controlled immediately; individuals involved with safeguards information were retrained; the quantity of Safeguards Information, the number of individuals who handle it, and the number of locations where it is stored were reduced; and appropriate procedures were revised to upgrade the expectations for handling safeguards information. Additionally, the licensee established the position of Safeguards Administrator who will be responsible for providing safeguards training, conducting periodic audits, performing self-assessments, and recommending any necessary programmatic changes.

The inspector reviewed the corrective actions associated with the violation, and concluded that the concerns were adequately addressed. This violation is closed.

V MANAGEMENT MEETINGS

X1 Management Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on May 14, 1997. The licensee acknowledged the findings presented.

LIST OF ACRONYMS USED

action request (AR)
action statement (AS)
administrative guideline (AG)
APRM gain adjust factor (AGAF)
as-low-as-reasonably-achievable (ALARA)
average power range monitors - neutron (APRMs)
Conowingo Generating Station (CGS)
control rod drives (CRDs)
control room deficiency list (CRDL)
control room emergency ventilation (CREV)
control valve (CV)
core operating limits report (COLR)
core power and flow log (CPFL)
core spray (CS)
core thermal power (CTP)
design basis document (DBD)
design input document (DID)
diaphragm alternative response test (DART)
electro-hydraulic control (EHC)
eleventh refueling outage (2R11)
emergency core cooling system (ECCS)
emergency diesel generators (EDG)
emergency preparedness (EP)
emergency service water (ESW)
end-of-cycle (EOC)
engineering change request (ECR)
engineered safety feature (ESF)
equipment operators (EOs)
equipment study list (ESL)
functional testing (FT)
general procedure (GP)
Generic Letter (GL)
health physics (HP)
high pressure coolant injection (HPCI)
high pressure service water (HPSW)
hydraulic control unit (HCU)
improved TS (ITS)
independent safety engineering group (ISEG)
inservice inspection (ISI)
inspector followup items (IFIs)
Institute of Electric and Electronics Engineers (IEEE)
instrument and control (I&C)
intermediate range monitor - neutron (IRM)
licensee event report (LER)
limited senior reactor operators (LSROs)
limiting conditions for operation (LCO)
load tap changer (LTC)
local leak rate test (LLRT)

loss of coolant accident (LOCA)
loss of off-site power (LOOP)
low pressure coolant injection (LPCI)
lubricating oil (LO)
main steam line (MSL)
modification (MOD)
motor generator (MG)
nuclear maintenance division (NMD)
nuclear management resource council (NUMARC)
nuclear quality assurance (NQA)
nuclear review board (NRB)
offsite dose calculation manual (ODCM)
offsite power start-up source #2 (2SU)
offsite power start-up source #3 (3SU)
operating experience (OE)
PECO Energy (PECO)
performance enhancement program (PEP)
PEP issue review leaders (PIRLs)
plant equipment operator (PEO)
plant operations review committee (PORC)
post-maintenance testing (PMT)
primary containment (PC)
primary containment isolation system (PCIS)
primary containment isolation valve (PCIV)
probabilistic safety assessment (PSA)
protected area (PA)
quality assurance (QA)
radiologically controlled area (RCA)
rated thermal power (RTP)
reactor core isolation cooling (RCIC)
reactor engineer (RE)
reactor feed pump (RFP)
reactor operator (RO)
reactor protection system (RPS)
refueling outage (RFO)
reliability centered maintenance (ROM)
residual heat removal (RHR)
residual heat removal (RHR)
safety evaluation report (SER)
safety related structures, system and components (SSC)
safety relief valve (SRV)
scram solenoid pilot valve (SSPV)
secondary containment (SC)
senior reactor operator (SRO)
shift manager (SM)
shift supervisor (SS)
shift technical advisor (STA)
shift update notice (SUN)

source range monitor (SRM)
specific gravity (SG)
spent fuel pool (SFP)
standby gas treatment (SGTS)
standby liquid control (SLC)
station blackout (SBO)
station qualified reviewers (SQR)
structure, system and component (SSC)
surveillance requirement (SR)
surveillance test (ST)
systems approach to training (SAT)
technical requirements manual (TRM)
technical specification (TS)
temporary instructor (TI)
temporary plant alteration (TPA)
turbine bypass valve (BPV)
turbine control valve (TCV)
turbine stop valve (TSV)
undervoltage (UV)
unresolved item (URI)
updated final safety analysis report (UFSAR)

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering Observations
IP 40500: Effectiveness of Licensee Controls in identifying, Resolving,and Preventing Problems
IP 61726: Surveillance Observations
IP 62707: Maintenance Observation
IP 64704: Fire Protection Program
IP 71707: Plant Operations
IP 71750: Plant Support Observations
IP 83750: Occupational Exposure
IP 92700: Onsite Follow of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901: Operations Followup
IP 92902: Followup - Engineer
IP 92903: Followup - Maintenance
IP 92904: Plant Support Followup
IP 93702: Prompt Onsite Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened:

URI 97-02-01	Station Qualified Reviewer Use/Review of Open Changes to the Updated Final Safety Analysis Report
VIO 97-02-02	Scaffolding Erected Causing Unanalyzed Conditions
URI 97-02-03	Station Blackout Line Load Testing
VIO 97-02-04	Inoperable Reactor Feed Pump High Reactor Level Trip
URI 97-02-05	Review of Instruments that Require Electrical Power to Perform a Technical Specification Function
URI 97-02-06	Operability Testing of the Emergency Diesel Generator Ventilation Systems
IFI 97-02-07	Review of Design Basis Document Review and Approval Process

Closed:

URI 96-04-02	Verification of Primary Containment Valves and Blank Flanges in the Drywell
Vio 50-227,278/ EA 96-144,243	Failure To Properly Control Safeguards Information

Discussed:

URI 95-018-01	High Pressure Coolant Injection Steam Line Vibration

ATTACHMENT 1, SECTION 1

ADMINISTRATIVE PROCEDURES

A-3.2	Completing and Processing a Temporary Change, Rev 0
AA-C-5	Preparation and Control of Procedures/Guidelines, Rev 6
AA-C-5.2	Document Review Checklist, Rev 4
AA-C-7	Preparation and Control of Manuals, Rev 1
AG-CG-4	PORC Administration/SQR and Chesterbrook Review and Approval of Documents, Rev 4
AG-CG-4-4	Minor Non-Technical Revisions, Rev 0
A-C.4	Plant Operations Review Committee, Rev 1
A-C-4.2	Station Qualified and Quality Reviewer Program, Rev 3
A-C-43	Surveillance Test Program, Rev 0
A-C-79-2	Generic Procedure Usage/Level Designation, Rev 1
LR-C-1	Commitment Tracking Program, Rev 8
LR-C-1.1	Document Sources for Commitments/Corrective Actions, Rev 7
LR-C-01-4	Commitment Revision Evaluation, Rev 7
LR-C-8	Control of Changes to Facility Operating Licenses, Appendices and Technical Specification Bases, Rev 4
LR-C-9	Control of Changes to the Updated Final Safety Analysis Report, Rev 5
LR-C-13	10 CFR 50.59 Reviews, Rev 6
LR-CG-06	Guideline for the Control of Revisions Due to License Document Revisions, Rev 1
LR-CG-13	Performing 10 CFR 50.59 Reviews, Revision 0
MOD-C-9	Design Control and Processing of Engineering Change Requests (ECRs), Rev 8
OM-P-12.1	Operation Action Logs, Rev 5
OM-P-12.2	Safety Function Determination Program, Rev 1

ATTACHMENT 1, SECTION 2

RELOCATED ITEMS

ITS	CTS	DESCRIPTION OF RELOCATED ITEM	RELOCATION
3.3.1.1	Table 4.1.2 Notes 1 &2	Discussion/Specifics equipment required for the test	Deleted PORC Mtg 95-72
3.3.6.1	Table 3.2.B; Table 4.2.B Item 4	Requirement for a Low Pressure Function	TRM
3.3.6.1	Table 3.2.B	Setpoints for HPCI and RCIC isolation on low steamline pressure	Procedures
3.3.6.1	Table 3.2.A; Table 3.2.B; Table 3.2.D	Trip level settings	Deleted PORC Mtg 95-072
3.3.6.1	Table 3.2.A Note 9	Compensator actions associated with recovery of a loss of ventilation in the mainsteam line tunnel	TS Bases
3.3.6.1	3.2.A.2 Note 3; Table 3.2.A Item 11; Table 4.2.A Item 7	Reactor Cleanup System High Temperature Isolation Function	TRM
3.3.6.2	Table 3.2.D	Trip level settings	Deleted PORC Mtg 95-72
3.3.8.1	Table 3.2.B	Trip level settings	Deleted PORC Mtg 95-72
3.3.8.1	Table 3.2.B; Table 4.2.B	Details on the instruments	UFSAR
3.4.1	3.6.F.1	Requirements for recirculation pump start	Procedures
3.4.1	4.6.F.1	Obtain neutron flux noise data	Procedures
3.6.B.2	3/4.6.8.2	Reactor water chemistry control	TRM
3.6.1.1	4.7.A.2.f; Table 3.7.2; Table 3.7.3; Table 3.7.4; Table Notes 2,3,&9-22	List of containment penetrations	UFSAR
3.6.1.1	4.7.A.2.g	Requirement for a continuous leak rate monitor	Procedures
3.6.1.1	4.7.A.2.h; 4.7.A.4.c	Visual inspection of suppression chamber interior and vacuum breakers	Procedures
3.6.1.2	4.7.A.2.f; Table 3.7.2 Note 8	The value of Pa	TS Bases

ITS	CTS	DESCRIPTION OF RELOCATED ITEM	RELOCATION
3.6.1.3	Table 3.7.1	List of primary containment isolation valves	UFSAR
3.6.1.3	4.7.D.2.b	Post maintenance testing on primary containment isolation valves	Procedures
3.6.1.3	4.7.D.1.b.1	Details of surveillance testing	Procedures
3.6.1.3	4.7.D.1.b.2	Power level to perform MSIV testing	Procedures
3.6.1.3	4.7.D.1.c	MSIV testing method	Procedures
3.6.2.1	4.7.A.2	Suppression pool temperature monitoring	Procedures
3.6.2.3	4.5.8.1.d	Torus cooling MOV testing requirements	Procedures
3.6.4.1	4.7.C.1.c	Secondary containment capability testing prior to refueling	Procedures
3.6.4.1	4.7.C.1.d	Testing of standby gas treatment after violation of secondary containment	Procedures
3.6.4.1	3.7.C.1.d	Secondary containment integrity during fuel cask moves	Procedures
3.6.4.1	3.7.C.1.c	Details of the design	TS Bases
3.8.1	4.9.A.1.2.l	Emergency diesel generator accelerated testing requirements	Procedures
5.0	6.9.1.c	Requirements for reporting challenges to safety and relief valves.	Procedures
5.0	6.9.2.h.1; 6.18	Changes to the Radwaste Treatment System	ODCM

ATTACHMENT 1, SECTION 3

NEW SURVEILLANCE ITEMS

NEW SURVEILLANCE REQUIREMENT	DESCRIPTION OF NEW SURVEILLANCE
SR 3.3.6.1.1	HPCI Isolation Drywell Pressure Channel Check
SR 3.3.6.1.2	HPCI Isolation Drywell Pressure Channel Functional
SR.3.3.6.1.5	HPCI Isolation Drywell Pressure Channel Calibration
SR 3.3.6.1.7	HPCI Isolation Drywell Pressure Logic System Functional
SR 3.3.6.1.1	RCIC Isolation Drywell Pressure Channel Check
SR 3.3.6.1.2	RCIC Isolation Drywell Pressure Channel Functional
SR 3.3.6.1.7	RCIC Isolation Drywell Pressure Logic System Functional
SR 3.3.6.1.7	RWCU Isolation on SLC initiation Logic System Functional
SR 3.3.6.1.7	RWCU Isolation on low water Logic System Functional
SR 3.3.6.1.7	Shutdown cooling system isolation on low water level Logic System Functional
SR 3.3.6.1.7	Mainsteam line isolation on high radiation Logic System Functional
SR 3.3.6.1.2	Primary Containment Isolation reactor water level low isolation Channel Functional
SR 3.3.6.1.7	Primary Containment Isolation reactor water level low isolation Logic System Functional
SR 3.3.6.1.2	Primary Containment Isolation high drywell pressure isolation Channel Functional
SR 3.3.6.1.7	Primary Containment Isolation high drywell pressure isolation Logic System Functional
SR 3.3.6.1.7	Feedwater Recirculation Isolation on reactor pressure high Logic System Functional
SR 3.3.8.1.1	Loss of Power Channel Functional
SR 3.3.8.1.2	Loss of Power Channel Calibration
SR 3.3.8.1.4	Loss of Power Logic System Functional
SR 3.5.1.2	ECCS Spray/Injection Valve Test
SR 3.5.1.4	LPCI Cross Tie Valve Position Test
SR 3.5.1.5	Recirculation Pump Discharge Valve Operability Test
SR 3.6.4.1.2	Secondary Containment Access Doors
SR. 3.6.4.1.3	Standby Gas Treatment
SR 3.6.4.1.4	Standby Gas Treatment

ATTACHMENT 2

EMERGENCY RESPONSE PLAN AND IMPLEMENTING PROCEDURES REVIEWED

Document	Document Title	Revision No.
ERP-C-1000	EOF Activation/Deactivation	Rev. 3
ERP-C-1200	Emergency Response Manager	Rev. 6
ERP-C-1300	EOF Dose Assessment Team Leader	Rev. 6
ERP-C-1300-1	Dose Assessment Team Leader Initial Actions	Rev. 1
ERP-C-1300-6	Assessment Group Initial Actions	Rev. 0
ERP-C-1300-7	Obtaining EPDS MET/RAD Data	Rev. 0
ERP-C-1300-8	Use of Mode A/Mode B CDM	Rev. 0
ERP-C-1300-9	Obtaining Met Data from National Weather Svc.	Rev. 0
ERP-C-1320	EOF Field Survey Group Leader	Rev. 4
ERP-C-1320-1	Field Survey Group Leader Initial Actions	Rev. 1
ERP-C-1320-2	Field Survey Group Leader Turnover Sheet	Rev. 1
ERP-C-1400	Engineering Support Team	Rev. 3
ERP-C-1400-1	Engineering Support Team Checklist	Rev. 4
ERP-C-1500	Logistic Support Team	Rev. 2
ERP-C-1900	Recovery Phase Implementation	Rev. 2
ERP-C-1900-2	PBPS Recovery Acceptance Checklist	Rev. 1
ERP-C-1900-3	LGS Recovery Acceptance Checklist	Rev. 1
ERP-C-1900-4	Recovery Plan Outline	Rev. 1