U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket/Report No.
50-277/95-27 License Nos. DPR-44
50-278/95-27 DPR-56

Licensee: PECO Energy Company
P. O. Box 195
Wayne, PA 19087-0195

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

Dates: November 26, 1995 - January 13, 1996

Inspectors: W. L. Schmidt, Senior Resident Inspector
F. P. Bonnett, Resident Inspector
R. K. Lorson, Resident Inspector
R. L. Nimitz, Senior Radiation Specialist

Approved By: W. J. Pasciak 1-30-96

W. J. Pasciak, Chief Date
Reactor Projects Branch 4
Division of Reactor Projects

EXECUTIVE SUMMARY
Peach Bottom Atomic Power Station
Inspection Report 95-11

Overall Assurance of Quality:

The inspector questioned whether operating the standby gas treatment system in an equipment cell exhaust mode, during reactor water cleanup filter media regeneration was an analyzed condition since it did not appear to be discussed in the updated final safety analysis (Section 6.0). Based on this question PECO and the inspector subsequently found that system operating procedures allowed the system to be run in modes that, along with a single failure, could have prevented the design basis function. The inspectors considered this issue unresolved pending resolution of several details dealing with the effects that operating in such a condition would have on the secondary containment function and possible offsite and onsite dose following an accident. It is requested that PECO respond, in writing, to the questions outlined in the inspection report so that the NRC can fully assess the safety impact of this condition. **(UNRESOLVED ITEM 95-27-02)**.

Plant Operations:

Operators responded well to a Unit 2 planned outage and a Unit 3 automatic reactor scram due to a turbine trip. The inspectors did note one instance where the configuration control afforded by general plant procedures did not ensure that the reactor vessel level backfill system was inservice prior to vessel pressurization. An auxiliary operator did an excellent job in identification of a possible condition that potentially indicated inoperability of the high pressure coolant injection system. Station management responded in a clear and well developed manner to this issue, proving that the system had not been inoperable.

PORC and NRB meeting continued to be focused on safety topics.

Maintenance and Surveillance:

The maintenance and modification outage on the E1 and E3 EDG were conducted well. The inspector noted one minor, non-safety significant, issue dealing with the control of wiring installation information. Maintenance personnel responded well when the inspector identified that the oil in the two Unit 2 standby liquid control pumps was not visually the same. The oil used in one pump was not as specified by procedure, but following identification met the viscosity requirements specified by the pump manufacturer.

Surveillance testing properly identified that the Unit 3 LPCI injection valve closed stroke time had exceeded its IST limits.

During surveillance testing on the B SBGT system the inspector identified that system dampers were operated to establish flow without their operation being specified in the test procedure or referenced operation procedure. The inspector subsequently found that because the dampers were operated outside of procedure they were not returned to their system checkoff list position

following the test. The safety significance of the issue appeared minor since the dampers would have automatically repositioned to the safety position in the event of a SBGT automatic start.

The inspector found that a condition where a SBGT fan started but tripped shortly thereafter may be of safety significance since it was caused by a faulty fan circuit breaker, not identified during surveillance testing. This was considered unresolved pending review of PECO corrective actions **(UNRESOLVED ITEM 95-27-03)**.

Engineering and Technical Support:

System engineers responded well to several plant issues during the period these included: the Unit 3 reactor scram where they performed a diligent investigation and identified a very difficult cause, the testing of the Unit 3 high pressure coolant injection system steam drain line level valve was well conducted, and the review and correction of excessive drywell make up was well handled.

A system modification to the HPSW flow instrumentation corrected a surveillance testing work around.

Plant Support:

Through the normal leakage monitoring report PECO radwaste has tracked the ground water intrusion issues at both plants. To address these issues PECO has grouted the areas and repainted the floor. This has not always been successful. PECO also plans to review the use of retired in place yard drains to reduce in-leakage.

PECO Energy, overall, implemented an effective radioactive waste processing, handling, storage, and transportation program. Maintenance of radioactive waste processing systems was generally good. However, material condition concerns were identified in the waste collector/floor drain collector tank room. The inspector found that PECO's program to reduce the solid radioactive waste stream, "green is clean", appeared to be effective. Apparent weaknesses were identified in the establishment and implementation of a program to train and qualify applicable personnel as required by 49 CFR 172, Subpart H. The adequacy of this latter matter is considered unresolved. **(UNRESOLVED ITEM 95-27-01)**

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1.0 PLANT ACTIVITIES REVIEW

1.1 PECO Energy Company Activities

The PECO Energy Company (PECO) safely conducted normal operating and shutdown activities at Peach Bottom Atomic Power Station (PBAPS) Unit 2 (Unit 2) and Unit 3 (Unit 3) over the period.

Unit 2 began the inspection period operating at 95% power due to excessive reactor feed pump (RFP) vibration. PECO operators shutdown the unit on December 1 to perform a planned maintenance outage (Section 2.1). PECO completed the outage on December 6 and returned the unit to 100% power on December 10. The unit operated at essentially 100% power for the remainder of the inspection period.

Unit 3 began the inspection period operating at 100% power. The unit automatically scrammed, as designed, on December 2 after a turbine generator trip due to a circuit ground in the electro-hydraulic control system (Section 2.2). PECO restarted the unit on December 4, reached 100% power on December 8, and remained at this power level for essentially the remainder of the inspection period.

1.2 NRC Activities

The resident and region based inspectors conducted routine and reactive inspection activities in several areas including: operations (Section 2.0); surveillance and maintenance (Section 3.0); engineering and technical support (Section 4.0); and plant support (Section 5.0). The plant support area includes the routine inspection of the radioactive waste area. (Section 5.3).

The inspector conducted a detailed review of the standby gas treatment (SBGT) system due to several issues with possible unanalyzed system operation, configuration control during testing, and a failure of a fan to start on a demand (Section 6.0).

Plant housekeeping was good at both sites, except for several issues of minor safety significance identified during the rad waste inspection. (Section 5.3)

2.0 PLANT OPERATIONS REVIEW (71707, 92901, 93702)

The inspectors observed that operators conducted routine Unit 2 activities well, including control of the unit during the shutdown on December 1 to perform a planned maintenance outage (Section 2.1). The Unit 3 control room operators also performed well following a turbine generator trip and automatic reactor scram (Section 2.2).

The operations crews made correct determinations of safety system operability and reportability of identified conditions. The crews adequately tracked and controlled entry into and exit from TS LCOs. The inspectors routinely verified the operability of safety systems required to support plant conditions at both units and did not identify any concerns.

2.1 Unit 2 Planned Outage and Start-up

PECO shutdown Unit 2 on December 1 to perform a planned maintenance outage. The operators performed the shutdown activities well. The reactor operator promptly recognized a minor problem involving excessive control rod speed. PECO determined that an improper blocking clearance had been applied in support of control rod drive (CRD) system hydraulic control unit (HCU) maintenance. This clearance increased the differential pressure between the CRD system drive and exhaust headers and caused the abnormal control rods speeds. PECO corrected the clearance problem and continued the shutdown. The inspector noted that the clearance problem would not have adversely affected the control rod scram performance and concluded that the blocking problem was not safety significant.

The major Unit 2 outage activities included: overhaul of the 2A reactor feed pump (RFP), repair of packing leaks from three main steam pressure averaging manifold valves (discussed in NRC Inspection Report 95-22), repair of a 5B feedwater heater tube leak, and replacement of a safety relief valve with a leaking pilot bellows (SRV-71C). The inspectors noted that the outage work activities were performed and coordinated well.

PECO completed the outage and restarted the unit on December 6, and reached full power on December 10. The inspector noted a minor configuration control deficiency when PECO did not maintain the reactor vessel water level backfill (RVWLB) system in-service prior to pressurizing the reactor vessel as required by PECO general procedure GP-2, "Normal Plant Start-Up." The inspector reviewed GP-2, which requires step verification signatures, and noted that the RVWLB system had been documented as in-service on December 3. The inspector concluded that the RVWLB system had been subsequently removed from service and not properly tracked to ensure system restoration prior to start-up. This event was not safety significant since the RVWLB system is designed to prevent the buildup of non-condensable gasses in the reactor vessel water level instrument reference legs, which occurs over time during reactor operation. PECO placed the RVWLB system in-service promptly after reaching rated pressure conditions. The inspector discussed this issue the senior manager-operations who initiated a performance enhancement process (PEP) evaluation to investigate the event. The inspector will review the results of PECO's investigation when complete.

2.2 Unit 3 Scram and Forced Outage

Control room operators responded well to a main turbine generator trip and reactor scram from 100% power on December 2, 1995. The operators immediately responded to the trip and scram, entering the appropriate scram and reactor control procedures to stabilize the plant, resetting the scram after eight minutes. All control rods fully inserted following the scram. All automatic and safety systems functioned as designed. As a result of the turbine trip reactor pressure increased to 1113 psig causing actuation of alternate rod insertion, as designed. Reactor water level dropped to -20 inches and was restored to the normal operating band using the feedwater system. No emergency core cooling systems were required to actuate. PECO initiated a PEP evaluation and notified the NRC.

The plant computer sequence of events alarm log indicated that a "turbine overspeed" as the initiating event. The turbine overspeed alarm indicates that the turbine mechanical trip solenoid (MTS) became energized and tripped the machine. This alarm is normally accompanied an additional computer alarm indicating the reason for MTS actuation and a control room alarm for the particular parameter exceeded. In this event, no other pre-event turbine computer or control room alarms were received to indicate what caused the turbine trip.

Electrical system mangers performed a diligent troubleshooting effort to investigate and identify the cause of the turbine trip. PECO's investigation found that a simultaneous occurrence of two independent intermittent DC grounds on the negative and positive buses of the 3C battery momentarily energized the MTS, resulting in the turbine trip. A crack on a terminal strip associated with the MTS caused the negative ground to a mounting screw. This ground was not detected during the refueling outage due to its intermittent nature. Technicians inadvertently caused the positive ground when they installed an instrument test recorder at the E-3 emergency diesel generator (EDG) for a post-maintenance functional test.

The inspectors independently reviewed the electrical schematics and alarms generated during this event and concurred with the conclusions. The inspector did independently note that the control room log indicated the control room annunciator for the 3A-3C Battery Ground (Alarm 320 F-1) alarmed several times prior to the event. In each occurrence, however, the equipment operator reported back to the control room that the ground had cleared. The inspector determined that PECO could not have foreseen or taken actions to prevent the event without discovering the cause for these alarms. The inspector concluded that the safety significance of the event was low.

PECO sent the terminal block to the corporate laboratory for failure evaluation, to determine the need for additional corrective actions. Further, PECO was evaluating the risks associated with the location and installation of test equipment. The inspector was satisfied with PECO's activities.

2.3 High Pressure Coolant Injection System Inoperable - Unit 3

PECO responded well to a water/steam leak from a test cap connected to the high pressure coolant injection (HPCI) steamline drain pot level instrument piping. A plant equipment operator performed well by identifying the leak to shift management. The presence of water at the test cap indicted that the HPCI suction line may have been filled with water. PECO declared the system inoperable and made the required 4 hour non-emergency event notification per 10 CFR 50.72.

Normally, a steamline drain trap removes condensate from the HPCI steam supply line. An air-operated bypass valve, controlled by the drain pot level switch, provides additional condensate removal capability. The level switch also actuates alarms to alert the operators to a possible high water level condition in the steam supply piping. PECO performed and the inspector observed troubleshooting that demonstrated the proper function of the steam drain trap and air operated valve, and the steam drain pot level switch

alarms. Based on the testing PECO concluded that the steam line had not been filled with water and that the HPCI system had not been inoperable. PECO subsequently retracted the event notification report.

2.4 Oversight Review Committees

The inspectors attended numerous plant operations review committee (PORC) meetings and the January nuclear review board (NRB) meeting at the site, finding them focused on safety. PORC meeting activities included discussions of safety evaluations in support of improved technical specification implementation and plant modifications. The NRB meeting appropriately discussed broad plant operations and station personnel presented numerous topics.

2.5 Licensee Event Report Update

The inspectors reviewed the following Licensee Event Reports (LERs), finding them factual and that PECO had identified the root causes, implemented appropriate corrective actions, and made the required notifications.

LER No.	LER Date	LER Title
3-95-005	11/08/95	Main Steam Relief Valve Setpoint Drift
3-95-007	12/02/95	Main Turbine Trip Caused Full Reactor Scram

3.0 MAINTENANCE AND SURVEILLANCE TESTING (61726, 62703, 92902)

The inspectors routinely observed the conduct of maintenance and surveillance tests (STs) on safety related equipment. This involves the review of ongoing activities to ensure: the proper use of approved procedures and skills of the craft, the calibration of testing instrumentation, the qualification of personnel, and the implemented administrative controls including blocking permits, fire watches, ignition sources, and radiological controls.

In the maintenance area the inspectors reviewed maintenance procedures, action requests (AR), work orders (WO), and radiation work permits (RWP). During observation of maintenance work, the inspectors verified appropriate Quality Verification (QV) involvement, plant conditions, TS LCOs, equipment alignment and turnover, post-maintenance testing and reportability review.

In the surveillance area the inspector reviewed test procedures and completed tests to verify the adequate demonstration of safety functions. During surveillance observations, the inspectors verified that tests were properly scheduled and approved by shift supervision prior to performance; control room operators were knowledgeable about testing in progress, and that redundant systems or components were available for service, as required. The inspectors routinely verified adequate performance of daily STs including instrument channel checks and the jet pump and control rod operability tests.

3.1 Emergency Diesel Generator Outages

During the period PECO removed the E3 and E1 EDG from service to support maintenance and modification outages. The inspectors found that the planning and control of these outages was generally very good. The conduct of the maintenance outage was observed in numerous occasions and was found to be excellent. The inspectors observed very good maintenance department oversight and control of work using procedures and properly documented work orders. In one instance, the inspector observed that craft personnel installing electrical modifications did not have the appropriate wiring pull sheet identified and in use during wiring installation. This issue was not significant since the job supervision knew where the proper pull sheet was and provided additional guidance to the craft personnel. It did however indicate a minor lapse in good electrical wiring practices. The inspector made PECO aware of this issue and they took appropriate corrective actions.

Restoration and testing of the E3 EDG went very well. During the testing of the E1 EDG PECO identified that the voltage regulator was not functioning properly. PECO engineering did a very good job identifying the cause of the voltage control problems as a faulty potentiometer, which was appropriately removed from the circuit.

3.2 Standby Liquid Control Pump Oil - Unit 2

PECO responded well to a question regarding the lubrication oil used in the standby liquid control (SLC) pump crankcase. The inspector noted a slight difference in color between the lubricating oil contained in the 2A and 2B SLC pump oil reservoir sightglasses. PECO sampled the oil from each pump and determined that the 2B SLC pump oil was a different type of oil (Harmony 46) than specified by the maintenance procedure (Harmony 68). PECO determined that the Harmony 46 oil would not adversely affect the 2B SLC pump performance. The inspector reviewed the SLC pump vendor manual and noted that the oil contained in both pumps was within the required oil viscosity limits and independently confirmed PECO's conclusion regarding operability of the 2B SLC pump. PECO initiated a PEP investigation to review the event.

3.3 Low Pressure Coolant Injection System Injection Valve - Unit 3

PECO responded well on November 25 when the 3A low pressure coolant injection system outboard injection valve (MO-25A) exceeded its inservice testing (IST) allowed closure stroke time (24.03 seconds versus 24 seconds). The operators promptly declared the 3A LPCI loop inoperable and initiated an action request to troubleshoot the valve. PECO identified that the valve stroke time had been set near the 24 second limit following maintenance performed during the October 1995 refueling outage (discussed in NRC Inspection Report 95-22).

PECO adjusted the open limit switch to limit the closed stroke time to approximately 22 seconds (i.e., the valve does not open as far). Nonconformance report (NCR 95-05275) justified this action based on a previous engineering evaluation which allowed reducing the valve open stroke time to 20 seconds, with no adverse effect on system flow. PECO performed the stroke time adjustment, repaired a packing leak, successfully tested the valve, and

declared it operable. Additionally, PECO initiated a PEP to review the station practices regarding the setting of motor operated valve limit switches. The inspector concluded that this event was not safety significant and that PECO took appropriate actions.

4.0 ENGINEERING AND TECHNICAL SUPPORT ACTIVITIES (92903, 37551)

The inspectors routinely monitor and assess licensee support staff activities. During this inspection period, the inspectors focused on the activities discussed below.

4.1 Engineering Control of Non-conformance Items

PECO managed the open nonconformance (NCR) items well using an integrated station engineering work task database. Nonconforming items include equipment or document deficiencies that could prevent a component or system from being able to perform its intended safety function. PECO identifies, evaluates, and resolves NCRs in accordance with procedure A-C-901, "Control of Nonconformances."

PECO has steadily reduced the number of open NCRs from about 275 items in November 1994 to 106 current items. The inspector reviewed the summary description for each open NCR and the detailed dispositions of eleven selected NCRs and did not identify any system operability concerns. The inspector reviewed the NCR dispositions and noted that the dispositions and operability determinations were adequately supported. The inspector concluded based on the good performance in reducing open issues and strong dispositions that PECO managed the NCR program well.

4.2 Environmental Qualification of Electrical Connectors

PECO properly evaluated and documented the use of quick-disconnect electrical connectors (Grayboot) for safety-related applications. These connectors are used in lieu of electrical splices to minimize time and dose during repetitive maintenance tasks. The inspector reviewed the PECO engineering change request (ECR 93-01507), which addressed the appropriate design considerations such as seismic and environmental qualification and provided specific guidance to maintenance personnel for the control of these connectors.

The inspector independently verified the applicability of the design criteria to applications of these connectors inside the drywell. Grayboot connector service life inside the drywell was limited to seventeen years, based on a vendor technical report, which lists the qualified service life based on the ambient temperature conditions, and the drywell temperature data. The inspector also reviewed the PECO database, which tracked the Grayboot connectors currently installed, and noted that all of the drywell connectors have been installed for less than three years. The inspector concluded that PECO controlled and tracked the use of the Grayboot connectors well.

4.3 Excessive Primary Containment Nitrogen Make-Up - Unit 3

PECO responded well on December 15 after the reactor operator identified an excessive nitrogen make-up rate to the Unit 3 primary containment (drywell). Operators monitor the frequency of nitrogen make-up to the primary containment per surveillance test (ST)-O-007-550-3, "Containment Gross Leak Rate Detection" to detect gross primary containment leakage. System managers performed troubleshooting and determined that the nitrogen leak path was from the torus air space, through the HPCI turbine exhaust vacuum breaker line, and out the HPCI gland seal condenser. The ST specifically states that this may be the flow path causing excessive leakage, since this is not an unroutine occurrence.

Normally a water seal is maintained in the gland seal condenser to minimize this leak path. As an interim action, PECO manually established the water seal at the proper level in the HPCI gland seal condenser. Additionally, PECO is developing an engineering solution to improve maintenance of the water seal.

4.4 High Pressure Service Water Instrumentation Modification

PECO engineering and maintenance took good action to correct an IST work around issue dealing with the determination of high pressure service water (HPSW) flow. The installation of new digital instrumentation provides enhanced capability when establishing pump flow reference values during IST, eliminating the need to take differential pressure instrument voltage readings at local panels.

An engineering change request (ECR) and a maintenance department work order provided sufficient controls and instructions to complete the installation. The ECR and the associated safety evaluation properly addressed the modification in accordance with 10 CFR 50.59. Further, the work order packages properly required instrument pre-installation calibration and post-installation calibration of the instrument loop. The post-maintenance testing included running one of the associated HPSW pumps and verifying that stable instrument readings could be achieved in the range of normal IST system flows. The inspector found that PECO planned to handle the change from the current method of determining flow by taking voltage readings, to using the newly installed meter properly with respect to establishing new reference values of flow.

5.0 PLANT SUPPORT (71750, 92904)

5.1 Radiological Controls

The inspectors examined work in progress in both units to verify proper implementation of health physics (HP) procedures and controls. The inspectors monitored the ALARA (As Low As Reasonably Achievable) program implementation, dosimetry and badging, protective clothing use, radiation surveys, radiation protection instrument use, handling of potentially contaminated equipment and materials, and compliance with RWP requirements. The inspectors observed that

personnel working in the radiologically controlled areas met applicable requirements and were frisking in accordance with HP procedures. During routine tours of the units, the inspectors verified that a sampling of high radiation area doors were locked, as required. All activities monitored by the inspectors were found to be acceptable.

5.2 Physical Security

The inspectors monitored security activities for compliance with the accepted Security Plan and associated implementing procedures. The inspectors observed security staffing, operation of the Central and Secondary Access Systems, and licensee checks of vehicles, detection and assessment aids, and vital area access to verify proper control. On each shift, the inspectors observed protected area access control and badging procedures. In addition, the inspectors routinely inspected protected and vital area barriers, compensatory measures, and escort procedures. The inspectors found PECO's activities to be acceptable.

5.3. Ground Water Intrusion

The inspectors and PECO remain concerned over ground water intrusion in to the lower levels of most buildings onsite. In contaminated area this water leads to the spread of contamination and if large enough can become a source of floor drain leakage and a subsequent burden on the radwaste processing systems. In the past PECO took actions to clean and seal using pressure grouting the floors in specific areas, including the HPCI, SBGT, RHR, RCIC room. This pressure grouting has not always been successful. The manager - radwaste maintains a list of the water intrusion areas as part of the pant leakage monitoring program. The list currently contains greater than 20 examples in the reactor, radwaste, and turbine buildings. PECO continues to pursue action to seal the leaks via a pressurized grouting process or other means.

The inspectors attended a PORC meeting where PECO discussed the possibility of using in-place retired yard drains to limit the ground water pressure on the west side of the plant. The Radwaste Manager indicated that the issue was receiving management attention and that it was anticipated that engineering personnel would have the results of their review of the ground water in-leakage concern in early 1996.

The inspectors questioned the quantity of leakage entering the liquid radwaste floor drain collector system. The Radwaste Manager was not able to quantify the magnitude of in-leakage to the floor drain collector system but indicated it was a source of input to the floor drain system.

The inspector noted during the plant tours that several rooms exhibited ground water intrusion including the Unit 3 condensate backwash receiver tank room. Previous leakage through the ceiling and onto piping, causing apparent rusting, was noted in the waste sludge tank room. Ground water intrusion was also observed outside the Unit 2 backwash receiver tank room. Ground water

intrusion under the A SBGT system appeared to be causing minor non-safety significant rusting of system support legs. PECO planned action to paint the supports (as appropriate).

The inspector concluded that the leaks appeared to have no significant impact on safety related equipment; and the concern had been brought to the attention of both design and plant engineering management.

5.4 Radioactive Waste Processing, Handling, Storage, and Transportation

5.4.1 Radwaste System and Area Material Conditions

The inspector visually inspected various radwaste system components and areas throughout the station (both operational and abandoned). Components/areas reviewed included: floor drain/waste collector tanks and rooms, the spent resin storage tank (abandoned) and room , the waste sludge tank and room, the floor drain demineralizer, the laundry drain tanks, the chemical waste tank and room, the condensate backwash receiver tanks and phase separators, the drum fill and capping areas (not used), and the centrifuge and hopper equipment (both abandoned) and rooms.

The inspector noted that some rooms exhibited elevated levels of contamination but overall material condition and housekeeping appeared good and areas were generally clean and orderly. Abandoned equipment did not contain any stored residual radioactive material. The licensee was using one room with abandoned equipment (centrifuge room) to store radioactive sources. The storage was reviewed, approved, and controlled by procedures. Abandoned equipment was isolated as appropriate. The inspector noted good efforts by the licensee to periodically inspect radwaste tanks including draining and cleaning.

Although overall conditions were good, the inspector made a number of observations associated with the material condition of equipment and rooms. These issues did not affect safety-related equipment and were of no specific safety significance. PECO initiated PEPs where appropriate and took good actions to resolve these issues.

- PECO did not have an apparent inspection/preventive maintenance (PM) program in place to review material conditions of the tank rooms. Material condition of the waste collector/floor drain collector tank room (91' 6" elevation radwaste building) was considered poor relative to other areas. The inspector observed extensive flaking rust and apparent corrosion on overhead piping, pipe supports, and the metal ceiling, also one tank support exhibited limited rusting. The tanks were open top tanks and the room exhibited high humidity. The licensee evaluated the conditions and found rust to be flaking with no apparent significant degradation (e.g., pitting) identified. Further, visual inspections of the material condition of the clean-up backwash phase separator tanks or rooms did not appear to have been conducted.

  On December 7, 1995, the licensee issued a preventive maintenance request and approval change form to provide for periodic inspection of material conditions of tank rooms.

- A small quantity of spilled radioactive spent resin in the posted contaminated area of the Unit 2 condensate backwash receiver tank room was observed. The licensee believed the resin was from an overflow associated with the Unit 3 backwash receiver tank overflow vent to floor drain.

- Leaks (oil and/or water) from the condensate decant pump, the condensate sludge discharge mixing pumps, and the A and B waste sample pumps were noted. The licensee has been replacing leaking radwaste system pumps with sealed pumps. To date, the licensee has replaced nine pumps with sealed pumps with three additional replacements planned for 1996.

The inspector also noted an apparent configuration control issue with the overflow lines for the waste surge/floor surge tanks. The inspector identified blank flanges in the lines which were apparently not consistent with system design. It was not apparent what impact the blank flanges would have on expected system performance, particularly if the overflow lines were a required design feature for the tanks. The licensee initiated an investigation of this matter.

5.4.2 Organization and Staffing

The inspector reviewed the current radioactive waste processing, handling, and transportation organization (including staffing, responsibilities, and authorities) against criteria contained in applicable station procedures and position descriptions TS 6.2, "Organization." The inspector evaluated the licensee's performance in this area by discussion with cognizant personnel and review of documents including applicable position descriptions.

The inspector's review indicated that there were no significant changes in the organization or its responsibilities and authorities since the previous inspection in this area (NRC Combined Inspection Nos. 50-277/94-18; 50-278/94-18, dated September 26, 1994). The inspector did note that a new Housekeeping Coordinator was selected. The licensee's Radwaste Manager informed the inspector that the individual was appropriately qualified in accordance with applicable administrative procedures.

The inspector noted that PECO continued to maintain the radwaste system engineer program with specific individuals assigned system engineer responsibilities for assigned radwaste systems. The system engineers were qualified in accordance with a system engineer qualification guide. The licensee's radwaste system engineer program was considered a very good initiative.

5.4.3 Radioactive Waste Procedure and Program Changes

The inspector discussed changes in radioactive waste processing, handling, storage, and shipment procedures and programs since the previous inspection in this area (NRC Combined Inspection Nos. 50-277/94-18; 50-278/94-18, dated September 26, 1994).

The inspector noted there were limited changes in this program area from the previous inspection. The changes included resumption of shipment (July 1995) of radioactive waste for disposal concurrent with the reopening of the Barnwell, South Carolina radioactive waste disposal site and implementation of a contracted resin compression dewatering system (January 1995). The licensee performed a 10 CFR 50.59 review of this system. The system achieved a volume reduction of about 1.45. The system was operated in accordance with approved procedures. The licensee also performed a 10 CFR 50.59 review for storage of dry active waste (DAW) in the interim radwaste storage facility. A previous inspection (NRC Combined Inspection Nos. 50-277/94-18; 50-278/94-18, dated September 26, 1994), identified the need for such an evaluation to support planned storage in the facility.

5.4.4 Solid Radioactive Waste Reduction "Green is Clean"

PECO implemented a "green is clean" program (January 1995) to provide for disposal of monitored trash to clean landfills in order to reduce the amount of waste shipped to licensed radioactive material disposal facilities. The inspector performed a limited review of the program during the on-site portion of the inspection and performed additional technical review of the bases for the program in the NRC Region I office. The "green is clean" program provides for collection and monitoring of waste from special "green is clean" receptacles located throughout the radiological controlled areas of the station. The program reduces radwaste by allowing personnel to place material that has not been in a contaminated area or material that has been surveyed in to the containers located in non-contaminated areas. The bagged "green is clean" waste is monitored with a bag monitor equipped with large area plastic scintillation detectors. If the bag passes the detector it is considered clean and allowed to pass from the plant to the normal non-radioactive trash landfill. As of November 1995, the licensee had released about 29,000 pounds of "green is clean" waste.

The alarm was set at 30,000 disintegrations per minute (dpm). PECO stated that the alarm set point takes into consideration an average background for "clean trash" (previously determined by the licensee) of 15,000 dpm. Thus the alarm setpoint was effectively 15,000 dpm greater than the background of clean trash monitored by the bag monitor. The monitor provides for background subtraction due to accumulated counts attributable to ambient radiation levels in the area of the monitor. A discussion of the alarm setpoints is contained in the licensee's technical information documentation (dated January 24, 1995) for the bag monitor.

PECO trained workers on the "green is clean" program and implemented periodic inspection/monitoring of bagged waste (after monitoring by the bag monitor) to check the effectiveness of the "green is clean" program. The licensee had also developed and provided special training for personnel that collect and monitor the "green is clean" waste. In addition, the monitored trash was sorted prior to placing it into clean disposal containers to ensure no unacceptable material would enter the clean waste stream (e.g., aerosol cans, clean protective clothing or labels from the radiological controlled areas of the station).

Current NRC guidance on the surveys and monitoring of wastes before disposal is contained in NRC IE Circular 81-07, NRC Information Notice No. 85-92, and NRC Health Physics Position Nos. 072 and 073 (contained in NRC NUREG/CR-5569). The documents provide licensees guidance . The inspector noted that the guidance indicates that licensee's should have the capability, when monitoring waste for disposal, to detect 5,000 dpm/100 centimeters squared and 1000 dpm/100 centimeters squared total and removable, respectively, of beta/gamma contamination. The documentation also indicates that segregated monitored wastes, with large total surface areas, being released as clean waste, should receive a final measurement on each package of aggregate waste.

The inspector reviewed PECO's alarm setpoints and the adequacy of the quality assurance program to ensure that detectable radioactive contamination was not released from the station. The inspector indicated that the NRC has not established release limits for monitored trash and that no detectable radioactive material may be released from the station. To clarify these issues the inspector held telephone conversations with PECO personnel on December 14, 21 and 27.

Setpoint Review:

The inspector reviewed the justification for the 30,000 dpm setpoint. Initially suitability of the setpoint was not apparent since it was above the previously discussed detection capabilities.

The PECO technical justification for the alarm setpoints indicated the setpoints were "limits." The technical justification did not indicate whether the monitor setpoint was a preset limit (30,000 dpm) or a radioactive material detection capability. Also, out of an estimated 1800 bags of monitored waste, the licensee experienced only two apparent alarms. This was considered a relatively low false alarm rate.

The licensee acknowledged these observations and initiated revisions to the justification to clearly indicate detection capabilities and minimum detectable activities. The licensee also initiated enhanced quality controls for bagged waste and reevaluated the minimum detectable activity (MDA) assuming a 95% confidence level (for false alarm) versus a 99% confidence level (for false alarms). The licensee indicated the MDA was reduced from 14,980 dpm to 12,987 dpm using a 95% confidence level for false alarms. The inspector noted that the licensee continued to use a 95% confidence level for counting.

The licensee indicated that prior to the use of the bag monitor to monitor waste independently, the confidence level for false alarms will be reduced to 95%. The licensee also indicated the MDA of the bag monitor will be reevaluated during the enhanced quality control efforts. The licensee also indicated that the limited backlog of bagged "green is clean" waste would be hand frisked as part of the enhanced quality control program to obtain quality control data for the "green is clean" program. The licensee also indicated that sources would be used to verify detection capabilities. The licensee

expected to tentatively complete the evaluation and update of the technical justification for the "green is clean" monitoring program by the end of January 1996.

The inspector was informed that the adequacy of the "green is clean" program was evaluated and the licensee had concluded that because the material was collected from a normally non-contaminated area within the radiological controlled area (RCA) and no unmonitored potentially contaminated material would be placed in the containers (since all material removed from a contaminated area was to be monitored), the likelihood of any "green is clean" material being contaminated was remote.

PECO indicated as a measure of the sensitivity of the monitor, that it alarmed due to clean (based on hand frisking with a GM tube) large area smears placed in the bags. The licensee terminated the practice of discarding the large area smears in the "green is clean" waste.

The inspector noted that the licensee was expecting to commence feedwater hydrogen injection in the near future, which will increase average gamma radiation backgrounds at the bag monitor location. The licensee was evaluating this matter and the need to move the monitor to provide for effective monitoring of waste.

Quality Control:

The inspector reviewed the adequacy of the quality control program to preclude the removal of "green is clean" waste with detectable levels of radioactive contamination from the radiological controlled areas (RCAs). It was not initially apparent that routine monitoring of individual portions of the waste occurred before it was monitored in an aggregate fashion (final monitoring) by the bag monitor. While PECO had conducted periodic inspection/monitoring of bagged waste (after monitoring by the bag monitor) this procedure was not formalized (not documented) and no routine frequency of checks was established.

PECO stated that they had not conducted check of the input and output of the waste stream. On average, the checks were performed once per quarter on monitored waste (i.e., bags were opened and all of its contents checked). Also, upon initial start-up and about three months into the program checks were performed of monitored bagged waste to evaluate the presence of unacceptable items. The inspector calculated that, assuming an average 16 pound bag of monitored waste, and a total weight of "green is clean" material, removed from the RCA of about 29,000 pounds, about 1800 bags of waste was monitored and removed from the RCA. The licensee's technical staff indicated less than 10 of the bags were checked completely for detectable levels of contamination following monitoring with the bag monitor. The licensee's staff stated that they identified no instances of contaminated material, in monitored "green is clean" bagged waste, being removed from the station.

The licensee's technical and radwaste staff acknowledged the lack of formalization of the quality control program and indicated that monthly checks would be implemented for incoming and outgoing waste to verify the adequacy of

implementation. The licensee's staff also indicated that quality control checks (on a sample of bagged waste) would be based on statistical sampling methods (as appropriate) and that this sampling program would consider the higher expected throughput during outages. The Radwaste Manager indicated enhanced quality control would be implemented by the end of 1995.

Conclusion:

The inspector concluded that, notwithstanding the lack of the apparent lowest practicable MDA and a well defined quality control program, PECO monitoring of trash had provided reasonable assurance that no material with detectable contamination would be released from the RCA. The inspector noted that use of a well defined quality control program in conjunction with use of the lowest practicable bag monitor MDA will provide improved assurance that material with detectable radioactive material will not be removed the RCA.

5.4.5 Radioactive Waste Sources, Volumes and Processing Systems, Radionuclide Scaling Factors, Waste Classification, and Volume Reduction Efforts

The inspector reviewed and discussed sources of radioactive waste at the station, volumes of waste generated, the processing (as appropriate) of the waste, the development of scaling factors for difficult-to-detect radionuclides, the classification of the radioactive waste, and waste volume reduction efforts. The review was against criteria contained in 10 CFR 20, 61, 71, the Updated Final Safety Analysis Report, and applicable NRC Branch Technical Positions.

The licensee routinely sampled various waste streams (as appropriate) and developed radionuclide scaling factors for each waste stream. The inspector made independent calculations to verify the scaling factors and did not identify any concerns. The inspector's review of selected waste streams, including review of selected radioactive waste shipment documentation packages, indicated that radioactive waste shipped for disposal was properly classified.

The licensee, with industry support, performed comprehensive reviews of its dry active waste (DAW) and liquid waste streams for cost and volume reduction purposes. The licensee developed action plans to track the review recommendations and developed and implemented plans and programs to reduce radioactive waste volumes to a minimum. The licensee implemented Procedure RW-C-130, "Waste Minimization." Goals for volume reduction efforts were established which included contaminated surface area goals and a goal for the number of leaks at the station. As of the time of this inspection, the station exhibited 4.76 % contaminated accessible area and less than 50 leaks total (including ground water intrusion leaks). The licensee's radwaste management was closely monitoring the station goals. In addition to these initiatives, the inspector noted the following additional PECO initiatives.

- A program to upgrade radwaste filtering system shut-off valves to improve maintenance and reliability.

- A leak report and performance indicators which are included in weekly plant staff meetings and senior management monthly update meetings.

- Significantly reduced use of protective clothing and implemented actions to eliminate, where possible, disposable protective clothing.

- Major improvements to the reactor water clean-up system to improve performance including backwashing and precoating.

- Major upgrade effort on the condensate demineralizer system to improve performance including minimum precoat filters, upgrading of batch and flow controls, and replacement of hold pumps and motors.

The inspector noted that the licensee's DAW generation rate was above industry median values but implementation of plans and programs have resulted in decrease in radioactive waste generated. To further reduce waste volumes, the licensee has contracted with a vendor to provide treatment (reverse osmosis) of floor drain liquid waste to minimize costs and volumes of spent resins generated. This system is expected to be placed in service in approximately March 1996. The licensee indicated appropriate safety evaluations, to support system installation, and training of personnel would be provided.

Overall, the inspector concluded that the licensee implemented effective programs in the areas of radioactive waste source evaluation and waste processing, radionuclide scaling factors determination, waste classification, and volume reduction efforts. The inspector noted that the licensee established a comprehensive radwaste system design basis document for future reference.

The inspector noted that Updated Final Safety Evaluation Report (UFSAR) Figure 9.2.1A indicates that dewatering of resin waste is accomplished by centrifuges. The inspector noted this was not the case, rather a contracted dewatering system was performing this task. The licensee's radwaste staff indicated changes to the flow paths for radwaste processing had been submitted to the licensee's licensing group for UFSAR update purposes.

5.4.6 Program Audits

The inspector reviewed audits, assessments, and surveillances of the radioactive waste handling, processing, and storage programs as well as audits of the Process Control Program. The inspector also reviewed audits of the training program for radwaste processing, handling, packaging, and shipping personnel. The review was against criteria contained in 10 CFR 71, applicable NRC Quality Assurance Program Approvals for Radioactive Material Packages, and Procedure A-C-930, "Radwaste and Radioactive Material QA Program."

The inspector's review indicated that appropriately qualified auditors were used to perform audits, surveillances, and assessments and that QA activities for radwaste processing, packaging, handing, storage and shipment were generally performance based. The licensee increased surveillance of the radwaste area following re-opening of the Barnwell, South Carolina disposal site in July 1995.

The inspector concluded that overall, the licensee performed generally effective performance based audits of the radioactive waste processing, handling, storage, and shipping programs. The following observation was brought to the licensee's attention for review and evaluation as appropriate.

- The inspector noted that Nuclear Quality Assurance (NQA) Audit No. A0900753, dated May 1995, indicated that NQA concludes that the Health Physics and Radwaste Training programs are adequate and are effectively implemented. However, the inspector was not able to identify, through review of audits and discussions with quality assurance personnel, any audits or surveillances of the adequacy or implementation of training required by 49 CFR 172, Subpart H. Subpart H prescribes requirements for training hazardous materials employees. Radwaste personnel are involved with such materials.

  The manager of nuclear quality assurance (NQA) indicated that Subpart H training was not safety related and did not come under the 10 CFR Part 50 QA program. However, he indicated surveillance of the Subpart H training of personnel involved in the processing, handling, storage, and shipment of radioactive material would be performed within the second calendar quarter of 1996.

5.4.7 Training

The inspector reviewed the training provided personnel involved in radioactive waste generation, processing, handling, storing, packaging, and shipping activities. The review was against criteria contained in IE Bulletin 79-19 and 49 CFR 172, Subpart H, "Training." The inspector also discussed NRC Information Notice No. 92-72, "Employee Training and Shipper Registration Requirements for Transporting Radioactive Material." The inspector reviewed training records, lesson plans, and discussed training with cognizant licensee personnel. The inspector also reviewed licensee actions on training program weaknesses outlined in NRC Combined Inspection Report Nos. 50-277/94-18; 50-278/94-18, dated September 26, 1994, including the implementation of licensee commitments outlined in its November 10, 1994, letter sent to the NRC in response to the NRC identified concerns.

The inspector's review indicated that the licensee implemented the commitments outlined in its November 10, 1994, letter. The licensee provided specialized training to radwaste engineers and also provided training to quality assurance personnel involved in oversight of radwaste activities, including shipping. The training provided to the radwaste staff was consistent with IE Bulletin 79-19 and provided via a training program plan.

<u>49 CFR 172 Radioactive Hazardous Material Training:</u>

The inspector could not fully verify that the radioactive hazardous material training provided radwaste personnel met the requirement of 49 CFR 172, Subpart H. Specifically, there was an apparent lack of: a training program plan, function specific training of selected individuals, and certification sign-off.

The inspector noted in one case that a contractor dewatering individual's training was not readily apparent. PECO subsequently contacted the vendor and determined that the dewatering technician had received hazmat training. The licensee also subsequently reviewed the training provided by the vendor and certified that it met the requirements of Subpart H.

Based on telephone discussion with the PECO industrial risk manager on December 14 and 27, PECO took the following actions: Developed a task list and a list of affected employee groups who should receive hazmat training. Verified that general employee training provided an appropriate level of radiological hazard training in the area of general awareness/familiarization/safety. However, PECO was still reviewing the requirements to provide function specific training to employees who package radioactive material for shipping. PECO stated that a training program would be implemented, including proper certification of completion, within the first quarter of 1996. In the interim, oversight of personnel involved with radwaste shipments who did not have the required training would be provide by a properly trained individual. The inspector considered this an unresolved item pending review of the training program. **UNRESOLVED ITEM 95-27-01.**

5.4.8 Radioactive Waste Shipping Activities

The inspector selectively reviewed radioactive waste shipping records for shipments made since the previous inspection and subsequent to re-opening of the Barnwell, South Carolina disposal site. The review was against criteria contained in 10 CFR 20, 61, and 71; 49 CFR 100-199; the Barnwell, South Carolina disposal facility license; and applicable certificates of compliance for various shipping casks.

Overall, the inspector concluded, based on selective review, that the licensee implemented an effective radioactive waste shipping program. Packages were appropriately classified, described, packaged, marked, and labeled and were in proper condition for transport. The inspector noted that the individuals involved in shipping activities were knowledgeable of applicable requirements. The licensee has contracted with CHEMTREC to provide 24 hour emergency response notification to meet the requirements of 49 CFR 172, Subpart G, "Emergency Response Information." The licensee provided applicable waste descriptions to CHEMTREC.

5.4.9 Hot Shop Effluent Monitoring

During a previous inspection (See NRC Combined Inspection Report Nos. 50-277/95-23; 50-278/95-23, dated October 20, 1995), the inspector questioned the adequacy of the monitoring of potential radioactive effluents from the licensee's Hot Shop. The Hot Shop is located on the ground floor of the old administration building and is used as a location to decontaminate articles and equipment. Two separate ventilation trains, equipped with high efficiency particulate air (HEPA) filters, take suction on the shop and various hoods and decontamination devices in the shop and discharge the effluent to the building roof area. The sampling of the effluents was being accomplished via periodic grab sampling of the shop's general area atmosphere. The sampling met specific sampling criteria within the Technical Specifications.

The licensee subsequently evaluated the potential offsite population doses attributable to effluents from the room. The calculations were based, in part, on an estimated deposition of radioactivity on the HEPA filters obtained from radiation survey measurements of the HEPA filters. The licensee's calculations determined no significant offsite doses occurred. However, the licensee's Chemistry Manager, indicated a decision was made to install a continuous sampler on each train. Recent licensee analyses of filters collected from the continuous samplers located down-stream of the HEPA filters indicated no releases of airborne radioactivity occurred.

The inspector noted that no apparent record for the replacement of HEPA filters for the system could be located. Also, there was no apparent preventative maintenance program for the HEPA filters located in the Hot Shop exhaust ventilation system. The licensee indicated this matter would be reviewed.

6.0 STANDBY GAS TREATMENT SYSTEM ISSUES:

Over the period the inspectors developed several issues dealing with the operation and testing of the standby gas treatment (SBGT) system. These issues dealt with: a previously unidentified single failure concern during routine non-design basis operation of the system, configuration control issues during system testing, and the failure of a fan to operate following a valid start signal. A discussion of the SBGT system design function and operation and the specifics of each issue are provided below.

The SBGT is an engineered safety feature, designed to limit the offsite dose rates following a designed basis accident (DBA). The DBAs of concern are a loss of coolant accident (LOCA) or a refueling accident, both of which could result in fission products being released to the secondary containment (refuel floor and reactor building). The two units share the system, venting the secondary containment through a charcoal absorption bed and HEPA filter to the plant stack in an elevated release. The system consists of two redundant charcoal absorption and filter trains (A and B), with downstream fans (A, B, and C) and the associated redundant dampers for each unit that would allow flow. Control dampers and instrumentation maintain the designed -0.25 inches of water differential pressure between the secondary containment and the outside atmosphere following a DBA. One fan and filter train provides sufficient volumetric flow to establish and maintain the negative pressure.

An inlet air-operated vortex (throttling) damper limits the flow through a single fan to 10,500 cfm, the secondary containment in-leakage design specification. The damper for each fan is controlled by a common air pressure regulating station on the local panel. To provide fan protection on low flow an air-operated bypass dampers connects the fan outlet and inlet plenum. This damper is controlled from the local panel using a pressure regulator. The vortex dampers are designed to fail to the closed position (to the mechanical stop) and the bypass damper fails closed on a SBGT start signal.

The SBGT system starts automatically on a GROUP III isolation signal (LOCA signal, high reactor building or refuel floor exhaust radiation signals or high plant stack radiation signal). This is arranged in a two division, one-out-of-two-taken-twice logic arrangement. One division, for each unit, starts one fan (A for Unit 2 and C for Unit 3), trips closed the inboard normal reactor building ventilation (RBVS) supply and exhaust valves, and opens one redundant reactor building and refuel floor suction valve and the A filter train isolation dampers. The other division on both units, starts the B fan start, trips closed the outboard RBVS dampers, and opens the other redundant reactor building and refuel floor suction dampers and the B filter train isolation dampers. The reactor building and refuel floor differential pressure is sensed by instrumentation and automatically controlled by air operated throttling dampers.

TSs require that each unit have two SBGT subsystems operable. For Unit 2 this would be the A and B fans and the A and B filter trains, for Unit 3 it would be the B and C fans and the A and B filter trains. With one subsystem inoperable, the TS allow 7 days followed by a unit shutdown. This would mean that if the B fan or the A or B filter trains was inoperable each unit would be in the 7 day LCO. With the A or C fans out of service, Unit 2 or Unit 3, respectively, would be in a 7 day LCO. If both subsystems were inoperable then both units would be in a 24 hour shutdown LCO.

During normal operation PECO system operating procedures (SOs) allow the operation of SBGT to provide several non-design basis functions. In order of system flow demand (highest to lowest), these are:

1. An alternate method of reactor building ventilation if the normal system is undergoing maintenance activities

2. A filtered release path from the reactor building equipment cell exhaust during the regeneration of reactor water cleanup (RWCU) resins.

3. A filtered release path from the gland exhauster condenser during HPCI operations.

6.1 Single Failure Vulnerability:

The inspector found that SOs allowed the operation of the SBGT system in fan configurations where the system could not meet single failure criteria. Following observation of system operation during RWCU resin regeneration and review of the updated final safety analysis report (UFSAR), the inspectors questioned whether this mode of operation was analyzed or if it was covered by an existing 10 CFR 50.59 safety evaluation. Subsequently, PECO and the inspectors determined that neither the UFSAR nor a 10 CFR 50.59 evaluation addressed this mode of operation.

During the development of the 50.59 evaluation for this operation, PECO identified that the SOs allowed fan operation such that a single failure could prevent the ability of the system to respond as designed to a DBA. As an example, if the dedicated Unit 2 fan (A) was operating for a Unit 3 RWCU operation and a LOCA occurred at Unit 2, with a single failure affecting the

non-running B fan or the running A fan: the Unit 2 reactor building would isolate and the Unit 2 SBGT system dampers automatically open, the Unit 3 dampers would not automatically shut and the one operating fan would be left trying to drawdown Unit 2 while still taking a suction on Unit 3. The increased flowrate could prevent the drawdown of Unit 2 to -0.25 inches of water negative pressure.

After discussions with the inspectors, PECO reviewed the operating history and determined that they had actually operated the system in the single failure vulnerable mode (B fan in operation) in the past. Prior PECO review of SOs did not identify the concern. Further, all SBGT SOs for non-design basis operation allowed fan configurations, that, with a postulated single failure, could have prevented SBGT system from performing its design basis function.

PECO corrected the problem by changing the SOs to reflect the need for the use of only the A or C fans on Unit 2 and 3 respectively and by not allowing the use of the B fan for normal non-safety operations. The inspector attended the PORC meeting where this change and the associated safely evaluation were presented. The system manager did an excellent job preparing and presenting the information. The operations department also hung a caution tag on the control room switch for the B fan stating that it should not be run due to single failure concerns. The PORC discussed how this condition had existed for so long and determined that this operation was in effect since initial plant startup, but had not been recognized as a design problem to that point. Based on this discussion, PORC opened an item to review other system operations for similar conditions.

The inspectors found these corrective action taken by PECO adequate to address the concerns over subsequent SBGT operations. However, several concerns remained with the previously unidentified single failure vulnerability. The NRC needs responses to these concerns to fully assess the safety significance of the previous situation, specifically:

1. What would be the overall effect on reactor building negative pressure if the postulated single failure occurred?

2. How would operators respond to the postulated single failure condition and in what time frame?

3. Based on the answers to questions 1 and 2, what would be the overall effect on offsite/onsite doses and operability of the SBGT filters?

The inspector considered this issue unresolved pending review of PECO's response to these questions. **UNRESOLVED ITEM 95-27-02**

6.2 Configuration Control During Testing:

Overall, technicians conducted filter efficiency testing on the B SBGT train well. However, the inspector observed that non-operations personnel, while establishing system flow, operated dampers that were not specifically called out in the ST or SO in use. Further, the dampers were left in a position not

specified by the system checkoff list (COL) following the test. The inspector also found that the fan bypass damper was in a position not specified on the system drawing but in a position specified in the system COL.

The ST specified starting the system using a normal SO and establishing and verifying a set flowrate. The inspector observed a technician operating the fan vortex dampers from the local control panel. Following establishment of the flowrate the conduct of the test appeared proper. The inspector reviewed the procedure and the SOs used to establish the system flowrate, neither specified the operation of any damper controls. The inspector became concerned about the configuration of the vortex dampers following the test, finding that the damper control station had been left in a partially open position with the dampers positioned further open than their mechanical stops. The system COL specified that the damper be shut to their mechanical stops and that the damper control station be in the closed position. During this review the inspector also determined that the position of the bypass damper was open as stated in the system COL, however, the system piping and instrument control diagram showed the bypass damper was normally closed.

The inspector discussed theses instances with the control room supervisor and subsequently with the system manager. The operations department repositioned the vortex damper control to closed and the inspector verified that the dampers were at their mechanical stops. The system manager also was reviewing the normal position of the bypass damper. These conditions were not safety significant since the inspector verified that the vortex and bypass dampers are designed and functional tested to fail to the mechanical stops and closed, respectively. The inspector remained concerned, however, since configuration control was not maintained and since equipment was operated when not specifically controlled by an ST or SO. This appeared to be a continuing problem with the expectations for procedure use when establishing or verifying conditions in an ST or SO.

6.3 Fan Motor Trip:

On December 25, during a routine transfer of the Unit 3 'A' RPS bus from the alternate to the normal power supply, the C fan failed to start on a valid demand. The transfer, as designed, caused a momentary bus de-energization which initiated the one division of the Group III isolation. The RBVS and SBGT dampers functioned as design automatically, however, the fan tripped on magnetic overloads as it tried to start. The control room operators declared the fan inoperable and initiated a PEP.

Electrical maintenance replaced the breaker and sent it to the corporate laboratories for disassembly and testing. PECO determined that a phase current imbalance caused the fan motor trip. Onsite troubleshooting confirmed that the breakers magnetic overload had functioned properly and were within the acceptable tolerance range and that the motor had not been damaged. During disassembly of the Westinghouse molded-case breaker, PECO found that the movable contact arm in the 'A' phase exhibited excessive friction and did not move freely when operated. PECO's preliminary conclusion was that the contact arm made sufficient contact with the stationary contact to supply

power to the breaker control circuit, but presented a high resistance connection during the fan start. This caused the phase imbalance which was sensed by the magnetic overloads.

The inspector determined that the event has some safety significance because the fan failed to operate on-demand, not during a surveillance test The inspector discussed the event with the system manager, concerned about what changes may have taken place at the circuit breaker since the last successful surveillance test or successful fan operation. The inspectors considered this issue unresolved pending NRC review of PECO's final report of the breaker malfunction and review of the fan's maintenance history. **UNRESOLVED ITEM 95-27-03**

7.0 MANAGEMENT MEETINGS (71707)

The resident inspectors and the inspector who conducted the radwaste inspection provided a verbal summary of preliminary findings to the station management at the conclusion of the inspection. During the inspection, the inspectors verbally notified PECO management concerning preliminary findings. The inspectors did not provide any written inspection material to the licensee during the inspection. The licensee did not express any disagreement with the inspection findings. This report does not contain proprietary information.