

May 22, 2003

Mr. John L. Skolds  
Chief Operating Officer  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC TRIENNIAL FIRE  
PROTECTION INSPECTION REPORT 50-277/03-009, 50-278/03-009

Dear Mr. Skolds:

On April 25, 2003, the NRC completed a triennial fire team inspection at your Peach Bottom Atomic Power Station, Units 2 and 3. The enclosed report documents the inspection findings which were discussed on April 25, 2003, with Messrs. Rusty West, John Stone, and other members of the Exelon Generation Company, LLC staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The purpose of the inspection was to evaluate your post-fire safe shutdown capability and fire protection program. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the NRC identified one finding of very low safety significance (Green) that was a violation of NRC requirements. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Peach Bottom Atomic Power Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room).

Mr. John L. Skolds

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If you have any questions please contact me at 610-337-5129.

Sincerely,

**/RA/**

James C. Linville, Chief  
Electrical Branch  
Division of Reactor Safety

Docket Nos. 50-277, 50-278  
License Nos.: DPR-44, DPR-56

Enclosure: Inspection Report No. 50-277/03-009 and 50-278/03-009

cc w/encl:

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REGION I

Enclosure

Mr. John L. Skolds

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Docket Nos.: 50-277, 50-278

License Nos: DPR-44, DPR-56

Report Nos: 50-277/03-009, 50-278/03-009

Licensee: Exelon Generation Company, LLC  
Correspondence Control Desk  
200 Exelon Way, KSA 1-N-1  
Kennett Square, PA 19348

Facility: Peach Bottom Atomic Power Station Units 2 and 3

Location: 1848 Lay Road  
Delta, Pennsylvania

Inspection Period: April 7, 2003 through April 25, 2003

Inspectors: A. Della Greca, Sr. Reactor Inspector, Division of Reactor Safety  
C. Cahill, Sr. Reactor Inspector, Division of Reactor Safety  
K. Young, Reactor Inspector, Division of Reactor Safety

Approved By: James C. Linville, Chief  
Electrical Branch  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000277/02-009, IR 05000278/02-009; 04/07/2003-04/25/2003; Peach Bottom Atomic Power Station Units, 2 and 3; Fire Protection.

The inspection was conducted by a team composed of regional specialists. The inspection identified one Green non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by a severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

### A. NRC-Identified Findings

#### Cornerstone: Mitigating Systems

- Green. The team identified a non-cited violation of 10 CFR Part 50, Appendix R, Section III.G.2. Exelon included manual actions in Table A-1 of Specification NE-00296, Post-Fire Safe Shutdown Program Requirements, November 23, 1999, to operate equipment necessary for achieving and maintaining hot shutdown. Several of these manual actions did not meet the requirements of Appendix R, section III.G.2 and the NRC had not granted exemptions to allow these actions.

In accordance with the guidance provided in inspection procedure 71111.05, "Fire Protection," (revision dated 3/6/03) this finding is greater than minor. The finding is of very low safety significance because the manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2 of inspection procedure 71111.05. (Section 1R05.8).

## Report Details

### Background

This report presents the results of a triennial fire protection team inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, "Fire Protection." The objective of the inspection was to assess whether Exelon had implemented an adequate fire protection program for the Peach Bottom Atomic Power Station (PBAPS) and whether the PBAPS post-fire safe shutdown capabilities had been established and were being properly maintained. The following fire areas were selected for detailed review based on risk insights from the PBAPS, Units 2 and 3, Individual Plant Examination of External Events (IPEEE):

- Fire Area 4, Unit 2 Recirculation Pump M-G Set Room (Elevation 135'-0")
- Fire Area 25, Cable Spreading Room (Elevation 150'-0")
- Fire Area 32, Emergency Switchgear Room 261 (Elevation 135'-0")
- Fire Area 34, Emergency Switchgear Room 265 (Elevation 135'-0")

This Inspection was conducted in accordance with the March 6, 2003, revision to inspection procedure (IP) 7111.05, "Fire Protection." This revision of the IP included guidance for inspecting manual actions in conjunction with licensee commitments to 10 CFR 50, Appendix R, Section III.G.2. In accordance with the procedure, issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuit of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

### **1. REACTOR SAFETY** **Cornerstones: Initiating Events, Mitigating Systems**

#### 1R05 Fire Protection (71111.05)

#### .1 Programmatic Controls

##### a. Inspection Scope

During tours of the PBAPS facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. This was accomplished to verify that Exelon was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with their fire protection program.

##### b. Findings

No findings of significance were identified.

Enclosure

## .2 Passive Fire Barriers

### a. Inspection Scope

During tours of the selected fire areas, the team evaluated the design adequacy and material condition of fire area boundaries, including fire walls, fire doors, fire dampers and fire barrier penetration seals, to ensure that Exelon was maintaining the passive features of the fire areas in a state of readiness.

The team randomly selected three fire barrier penetration seals and a fire damper for detailed inspection to verify proper installation and qualification. The team reviewed associated design drawings, test reports, and engineering analyses. The team compared the observed in-situ seal configurations to the design drawings and tested configurations. Additionally, the team compared the penetration seal and fire damper ratings with the ratings of the barriers in which they were installed. This was accomplished to verify that Exelon had installed the selected penetration seals and fire damper in accordance with their design and licensing bases.

### b. Findings

No findings of significance were identified.

## .3 Fire Detection System

### a. Inspection Scope

The team reviewed the adequacy of the fire detection systems in the selected plant fire areas. This included a walkdown of the detection systems and a review of the type and locations of installed detectors to verify their conformance to the plant design and installation drawings. In addition, the team reviewed completed surveillance procedures to verify the adequacy and frequency of fire detection component testing. This review was performed to ensure that the fire detection systems for the selected fire areas met their design and licensing bases.

### b. Findings

No findings of significance were identified.

## .4 Fixed Fire Suppression Systems and Equipment

### a. Inspection Scope

The team evaluated the adequacy of the automatic total flooding carbon dioxide (CO<sub>2</sub>) system in the cable spreading room (CSR), and the pre-action sprinkler systems in the recirculation pump motor-generator (MG) room and in emergency switchgear rooms 261 and 265. The evaluation included walkdown of the systems and reviews of installation

drawings and functional testing. These reviews were accomplished to verify that the selected fixed suppression systems met their design and licensing bases.

The automatic function of the CO<sub>2</sub> system at PBAPS was disabled in June 2002, due to an inadvertent CO<sub>2</sub> discharge in the E-3 diesel generator room. With the automatic function disabled, the CO<sub>2</sub> system is available for manual initiation by the fire brigade. Regarding the CO<sub>2</sub> system in the CSR, the team reviewed the initial CO<sub>2</sub> discharge testing, the revised pre-fire strategy plan (which contained guidance for initiating the CO<sub>2</sub> system manually), the fire brigade training documents and the CO<sub>2</sub> system flow calculations. These reviews were performed to confirm that the CO<sub>2</sub> concentration achieved in the CSR during pre-operational testing was acceptable and to ensure that the compensatory measures taken by PBAPS following the disabling of the CO<sub>2</sub> system automatic function were appropriate.

b. Findings

No findings of significance were identified.

.5 Manual Fire Suppression Capability

a. Inspection Scope

The team conducted physical inspection of selected stand pipe systems, hose reels and portable fire extinguishers to determine the material condition of manual fire fighting systems and to verify that equipment locations were in conformance with those specified in the firefighting strategies (pre-fire plans) and fire protection program documents. The team reviewed diesel fire pump flow and pressure tests to ensure that the pumps met their design requirements. The team also reviewed the fire main loop flow testing to ensure that no degradation of the piping had occurred and that the flow distribution circuits were able to meet the design requirements. A review of the pre-fire strategy plans for the target fire areas was conducted to verify the accuracy of the plans versus the installed fire protection features and to ensure that appropriate information had been provided to the fire brigade members and plant operators to identify safe shutdown equipment and instruments.

The team inspected the fire brigades's protective ensembles, self-contained breathing apparatus (SCBA), portable communications equipment and various other fire brigade equipment to determine material condition and operational readiness of equipment for fire fighting. The team also reviewed the qualifications of several fire brigade members to ensure that they had met and maintained the requirements for fire brigade membership.



b. Findings

No findings of significance were identified.

.6 Safe Shutdown Capability

a. Inspection Scope

The team reviewed the PBAPS Specification for Post-Fire Safe Shutdown Requirements, NE-00296, and associated Safe Shutdown Analysis, MDE-86-0786, to confirm that the licensee had identified the methods and the structures, systems, and components (SSCs) necessary to achieve hot shutdown and cold shutdown, following postulated fires in the selected risk significant fire areas. The team further reviewed applicable flow diagrams, instrument drawings and the safe shutdown components list. This review was conducted to identify the components required for establishing the specified flow paths and for isolating the flow diversion paths.

The team verified that the applicable requirements of 10 CFR 50, Appendix R, Sections III.G and III.L for achieving and maintaining safe shutdown were properly addressed. The team verified that systems necessary to assure the safe shutdown functions of reactivity control, reactor coolant makeup, reactor heat removal, and process monitoring were protected within or independent of the selected fire zones. Where deviations from Appendix R requirements were identified, the team verified that the deviations had been approved and that conditions required by the deviations were implemented and being maintained.

b. Findings

No findings of significance were identified.

.7 Operational Implementation of Post-Fire Safe Shutdown Capability

a. Inspection Scope

The team reviewed the fire response procedures and emergency operating procedures (EOPs) for the selected fire areas to evaluate the methods and equipment used to achieve hot shutdown following a fire in those areas. The team reviewed piping and instrumentation drawings and confirmed that the required components had been evaluated and included in the safe shutdown equipment list. The review included an evaluation of selected alternate shutdown components and their control circuits to ensure that, in the event of a fire in the CSR and control room complex, alternate shutdown capability had been provided and proper isolation had been included. Field walkdowns were conducted to evaluate the protection of the equipment from the effects of fires.

Post-fire shutdown procedures for the selected areas were also reviewed to determine if appropriate information was provided to plant operators to identify protected equipment

and instrumentation and if the recovery actions specified in the post-fire shutdown procedures considered area accessibility and manpower needs for performing restorations. The team reviewed training lesson plans, including those for the alternative shutdown procedures. In addition, the team discussed training with operators, reviewed selected alternate shutdown equipment tests, inventoried manual action tool packages, reviewed the adequacy of shift manning, and evaluated the accessibility of the alternative shutdown operating stations and required manual action locations. Specific procedures reviewed included PBAPS Special Event Procedure, SE-10, "Alternate Shut Down," Revision 13, SE-10 "Plant Shutdown from the Alternate Shutdown Panels - Bases," Revision 14, and SE-10.1 "Alternate Shutdown Restoration," Revision 11.

A procedure walkdown was performed for procedure SE-10, "Alternate Shut Down," Revision 13. The walkdown was performed by an operator and focused primarily on the portion of the procedure associated with achieving stable hot shutdown conditions. The plant operator was accompanied by NRC team members during the walkdown and the approximate time for critical steps, such as isolating and transferring safety relief valve (SRV) controls, was noted and evaluated to assess the ability of the operators to maintain plant parameters within procedural limits.

b. Findings

No findings of significance were identified.

.8 Safe Shutdown Circuit Analyses

a. Inspection Scope

The team reviewed applicable system flow diagrams, electrical one line diagrams, control panel layouts, control circuit schematic diagrams, instrument loop diagrams, cable tray designations, fire zone/area arrangements drawings, panel and rack wiring diagrams, operating procedures, circuit breaker coordination curves, calculations, modifications, vendor information and the electrical cable and raceway information system to verify that the conclusions of selected sections of the safe shutdown analysis were correct and that the procedures, equipment, fire barriers, and systems provided were sufficient to assure post-fire safe shut down of the plant.

For the selected areas, the team also reviewed the PBAPS's safe shutdown analysis (SSA) report to ensure that at least one post-fire safe shutdown success path, free of fire damage, was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and to make the necessary repairs to reach cold shut down within 72 hours. The team sampled sections of operating procedures and walked down required manual actions taking into consideration such factors as timing, accessibility of the equipment, and availability of procedures. The team used the guidance of IP 71111.05, Enclosure 2, to confirm the availability of selected components and feasibility of the manual actions.

Due to the issuance of Change Notice 00-020 against Inspection Procedure 71111.05, "Fire Protection," the team did not review associated circuit issues during this inspection. This change notice has suspended this review pending completion of an industry initiative in this area.

b. Findings

Introduction. The team identified a Green non-cited violation (NCV) because Exelon used manual actions to operate equipment necessary for achieving and maintaining hot shutdown in lieu of providing protection for the cables associated with that equipment, as required by 10 CFR Part 50, Appendix R, Section III.G.2.

Description. In a Safety Evaluation dated September 16, 1993, the NRC evaluated and accepted manual actions performed outside the control room to achieve post-fire safe shutdown following fires in certain fire areas of PBAPS. Table A-4 of the PBAPS Fire Protection Program, revision 4, January 1991, described the manual actions and the fire areas that required manual actions. The actions included fuse pulling and manual operation of motor-operated valves from motor control centers.

During this inspection, the team reviewed Table A-1 of Specification NE-00296, Post-Fire Safe Shutdown Program Requirements, revision 0, November 23, 1999, and identified that the Table included multiple manual actions that had been credited for and incorporated in the post-fire safe shutdown procedures. These additional manual actions did not meet the requirements of Appendix R, section III.G.2 and the NRC had not granted exemptions to allow these actions. Exelon had incorporated the additional manual actions to address Thermo-lag related changes and analysis refinements. The manual actions that were identified in Specification NE-00296 but not approved by the NRC included fuse pulling, tripping circuit breakers and operating switches to restore power.

Analysis. Inspection procedure 71111.05 (revision date March 6, 2003) states that, "If the inspectors determine that manual actions are reasonable and are expected to meet the criteria outlined in Enclosure 2, then the inspection report will identify this issue as a green finding pending the Commission's acceptance of the proposed staff initiative to incorporate the use of manual actions into section III.G.2 of the code. (The green finding is an indicator that while compensatory measures in the form of manual actions have been implemented and are acceptable, the licensee continues to be in violation of the code requirements). If the inspectors determine that the manual actions are not reasonably accomplishable and, therefore, implementation may not lead to a safe plant condition, the preliminary finding will be identified as potentially greater than green and entered into the [significance determination process] SDP."

The team determined that, (1) adequate diagnostic instrumentation was provided to detect spurious actuation of equipment and accomplishment of manual actions; (2) the environmental conditions potentially encountered by the operator(s) while accessing and performing the manual actions were reasonable; (3) staffing was sufficient and training adequate; (4) procedures were available for performing the planned manual action; (5)

communication means had been provided; (6) when necessary, special tools had been dedicated and made available for use; (7) the equipment requiring manipulation was accessible; and (8) the Exelon fire protection team had confirmed their ability to perform the required manual actions within the specified time. Therefore, the team concluded that the manual actions were reasonable and were expected to meet the criteria of Enclosure 2.

Enforcement. Title 10 of the Code of Federal Regulations (CFR), Part 50.48, "Fire Protection," and 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," establish specific fire protection features required to satisfy 10 CFR Part 50, Appendix A, General Design Criterion 3, "Fire Protection." Appendix R applies to licensed nuclear power stations that were operating prior to January 1, 1979, which includes PBAPS. Section III.G.2 of Appendix R to 10 CFR Part 50 requires that, "where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:

- a. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;
- b. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or
- c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

Contrary to the above, the team found that, at PBAPS, Exelon included manual actions in Table A-1 of Specification NE-00296, November 23, 1999, to operate equipment necessary for achieving and maintaining hot shutdown. Several of these manual actions did not meet the requirements of Appendix R, section III.G.2 and the NRC had not granted exemptions to allow these actions. This issue was determined to be of very low safety significance because PBAPS application of manual actions met the criteria established in IP 71111.05, Enclosure 2, and was entered into the PBAPS corrective action program (CR 00-155529). This violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-277&278/03-009-01, Failure to Provide Protection in Accordance with 10 CFR Part 50, Appendix R, Section III.G.2.

.9 Electrical Raceway Fire Barrier Systems (ERFBS)

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition of the electrical raceway fire barrier systems. Additionally, the team selected the Thermo-Lag installation in the CSR for detailed review. The review included design and installation drawings, qualifications testing documents and engineering analyses for selected configurations. The NRC safety evaluations of fire protection features for PBAPS were also reviewed by the team. This was accomplished to verify that the selected portions of the fire barrier system met their design and licensing bases.

b. Findings

No findings of significance were identified.

.10 Post-Fire Safe Shutdown Emergency Lighting and Communications

a. Inspection Scope

The team observed the placement and aiming of eight-hour emergency lighting units (ELUs) throughout the selected fire zones to evaluate their adequacy for illuminating access and egress pathways and equipment requiring local operation for post-fire safe shutdown. In addition, during the alternate shutdown procedure walk through documented in Section 1R05.7, "Operational Implementation of Post-Fire Safe Shutdown Capability," the team verified that emergency lights were provided where needed.

The team reviewed surveillance and preventive maintenance procedures to ensure operational readiness of the ELUs. Additionally, the team reviewed Exelon's ELU action plan to determine what actions were planned to improve ELU performance.

The team reviewed radio repeater location and power sources to ensure that the fire brigade and operators could maintain communications for fire fighting in the selected areas and in the event of shutdown from outside of the control room.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA2 Identification and Resolution of Problems

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the fire impairments log, fire protection system health reports, open corrective maintenance backlog for fire protection and safe shutdown equipment, selected condition reports (CRs) for fire protection and safe shutdown issues to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. The team also reviewed recent quality assurance (QA) audits, fire protection self-assessments of the fire protection program and recent field observations to determine if PBAPS personnel were identifying fire protection program and equipment deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

The team presented their preliminary inspection results to Mr. Rusty West and Mr. John Stone and other members of the Exelon staff at an exit meeting on April 25, 2003. Exelon acknowledged the conclusions and observations presented.

The team asked Exelon if any of the information provided during the inspection was proprietary. Proprietary information was identified and returned to Exelon prior to leaving the site. No proprietary information was included in this inspection report.

## SUPPLEMENTAL INFORMATION

### KEY POINT OF CONTACT

#### PPL Susquehanna LLC

Mike Alfonso	Work Management
Steve Beck	Reg. Assurance
Chuck Behrend	Senior Manager – Plant Engineering
Russ Bleeker	Engineering
Paul Davison	Maintenance
Dan Duane	Operations
C. Howell	Designer (Penetration Seals)
K. Kauffman	DC System Manager (ELUs)
Chris Kerr	Engineering
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Jim Kovalchick	Operations
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M. McCrea	System Manager (Communications)
Albert Piha	Engineering
Tom Powell	NOS
Chris Pragman	Exelon Corporate
Paul Rau	Engineering
Cliff Sinopoli	Engineering
Garey Stathes	Engineering Director
John Stone	Plant Manager
Frank Sturniolo	Engineering
Rusty West	Site Vice President

#### Nuclear Regulatory Commission

J. Linville	Chief, Electrical Branch, DRS
A. McMurtray	Senior Resident Inspector, Peach bottom Atomic Power Station
M. Buckley	Resident Inspector, Peach Bottom Atomic Power Station

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

50-277 & 278/03-009-01	NCV	Failure to Provide Cable Protection in Accordance with 10 CFR Part 50, Appendix R, Section III.G.2.
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## LIST OF ACRONYMS USED

ASD	Alternative Shutdown
BOP	Balance of Plant
CAP	Corrective Action Program
CARDOX	Carbon Dioxide
CFR	Code of Federal Regulations
CO <sub>2</sub>	Carbon Dioxide
CR	Condition Report
CRD	Control Rod Drive
CSR	Cable Spreading Room
ECR	Engineering Change Request
ELU	Emergency Lighting Unit
EOP	Emergency Operating Procedures
ERFBS	Electrical Raceway Fire Barrier System
ESW	Emergency Service Water
HPCI	High Pressure Coolant Injection
HPSW	High Pressure Service Water
INDMS	Integrated Nuclear Data Management System
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
MG	Motor Generator
MOD	Modification
NCV	Non-Cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
P&ID	Piping and Instrument Diagram
PBAPS	Peach Bottom Atomic Power Station
PCC	Primary Containment Control
PECO	Philadelphia Electric Company
QA	Quality Assurance
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RPV	Reactor Pressure Vessel
RT	Routine Test
SCBA	Self Contained Breathing Apparatus
SCC	Secondary Containment Control
SDP	Significance Determination Process
SSA	Safe Shutdown Analysis
SSC	Structures, Systems, Components
SRV	Safety Relief Valve
ST	Surveillance Test



## LIST OF DOCUMENTS REVIEWED

### Fire Protection Program Documents

FF-01	Fire Fighting Plan, Rev. 7
FPP	Fire Protection Program, Rev 13, April, 2001
FPP	Fire Protection Program, Table A-4, Rev 4, January 1991
NE-00296	Post-Fire Safe Shutdown Program Specification, Rev 0, November 23, 1999
NE-00256	Design Criteria for Electrical Separation, Rev 0
PF-0016-004	Fire Area 04 - Fire Safe Shutdown Analysis, Rev 0
PF-0016-025	Fire Area 25 - Fire Safe Shutdown Analysis, Rev 0
PF-0016-032	Fire Area 32 - Fire Safe Shutdown Analysis, Rev 0
PF-0016-034	Fire Area 34 - Fire Safe Shutdown Analysis, Rev 0
PF-108	Control Room, Rev 2
PF-108A	Fan Room, Rev 2
PF-117	Unit 3 Emergency Battery and Switchgear Rooms, Rev 3
PF-127	Unit 2 Emergency Battery and Switchgear Rooms, Rev 3
PF-78H	CSR and Computer Room, Rev 2
PF-4C	Unit 2 Rx Recirc. Pump MG Set Room, Rev 3
RT-S-037-709-2	Accessible Safe Shutdown Emergency Lighting Battery Pack Inspection
RT-S-037-710-2	Complete Safe Shutdown Emergency Lighting Battery Pack Inspection, Rev. 5
RT-S-037-719-2	Emergency Lighting Inspection (Alternate Shutdown Control Station Access/Egress Lights), Rev. 3

### Calculations and Engineering Evaluations

A1373246 00 01	Fire Protection System Impairment Evaluation, Cable Spreading Room and Computer Room CARDOX, June 14, 2002
PE-0182	Perform 125 V DC Voltage Analysis
	Automatic vs. Manual Initiation of CO <sub>2</sub> in The Cable Spreading Room, April 22, 2003
	CARDOX, Low Pressure Carbon Dioxide Flow Calculations For PBAPS CSR, January 31, 1991
	CARDOX, Initial Discharge Testing Data, July 6, 1973

### Drawings

A-12,	Architectural Floor Plan, EL. 135'-0", Rev. 35
A-13,	Architectural Floor Plan, EL. 165'-0", Rev. 30
A-486,	Barrier Plans EL. 135'-0"
E1	Single Line Diagram Station, Rev 40
E5	Single Line Meter & Relay Diagram, 13.8KV Aux. Power System, Unit 2, Rev 12
E-5-7, (Sh 6 & 17)	Electrical Schematic Diagram – Standby Diesel Engine Generators
E7	Single Line Meter & Relay Diagram, 13.8KV Aux. Power System, Unit 3, Rev 14
E8	Single Line Meter and Relay Diagram Standby Diesel Gens & 4160 Volt Emer. Power System, Unit 2, Sh 1 & 2
E12	Single Line Meter and Relay Diagram Standby Diesel Gens & 4160 Volt Emer. Power System, Unit 3, Sh. 1 & 2

E-17-219, (Sh 1 & 2)	Transmitter Loop Diagram – Wiring Diagram
E-17-222,(Sh 1 & 2)	Transmitter Loop Diagram – Wiring Diagram
E26	Single Line Diagram, 125/250 VDC System, Unit 2, Sh. 1-3
E27	Single Line Diagram, 125/250 VDC System, Unit 3, Sh. 1-3
E28	Single Line Diagram, Instrumentation & Uninterruptible AC System, Unit 2 & Common, Sh. 1 & 2
E28	Single Line Diagram, Instrumentation & Uninterruptible AC System, Unit 3, Sh. 1 & 2
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