March 9, 2006

Mr. Christopher M. Crane
President and CNO
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT NO. 05000277/2006006 AND 05000278/2006006

Dear Mr. Crane:

On February 10, 2006, the NRC completed a triennial fire protection team inspection at the Peach Bottom Atomic Power Station. The enclosed report documents the inspection findings which were discussed at an exit meeting on February 10, 2006, with Mr. J. Grimes and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection no findings of significance were identified.

In accordance with 10 CFR 2.390 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).

Sincerely,

/RA/

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

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

Enclosure: Inspection Report No. 05000277/2006006 and 05000278/2006006

cc w/encl:
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Plant Manager, Peach Bottom Atomic Power Station
Regulatory Assurance Manager - Peach Bottom
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	05000277, 05000278
License No.	DPR-44 and DPR-56
Report Nos.	05000277/2006006 and 05000278/2006006
Licensee:	Exelon Generation Company, LLC
Facility:	Peach Bottom Atomic Power Station (PBAPS), Units 1 and 2
Location:	1848 Lay Road Delta, PA 17314
Dates:	January 23-27 and February 6-10, 2006
Inspectors:	L. Scholl, Senior Reactor Inspector, DRS K. Young, Senior Reactor Inspector, DRS J. Lilliendahl, Reactor Inspector, DRS
Approved by:	John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000277/2006006, 05000278/2006006; 01/23/2006 - 02/10/2006, Peach Bottom Atomic Power Station; Triennial Fire Protection Team Inspection, Fire Protection.

This report covered a two-week triennial fire protection team inspection by three Region I inspectors. 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 and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None

REPORT DETAILS

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, “Fire Protection.” The objective of the inspection was to assess whether Exelon Generating Company, LLC has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Peach Bottom Atomic Power Station facility. The following fire areas (FAs)/fire zones (FZs) were selected for detailed review based on risk insights from the PBAPS Individual Plant Examination (IPE)/Individual Plant Examination of External Events (IPEEE):

- FA 36
- FA 43
- FA 57
- FZ 108

Section 71111.05-05 of the inspection procedure specifies a minimum sample size of three. Inspection of these four areas/zones fulfills the procedure completion criteria. The inspection team evaluated the licensee’s fire protection program (FPP) against applicable requirements which include plant Technical Specifications, Operating License Condition 2.C.(4), NRC Safety Evaluations, 10 CFR 50.48 and 10 CFR 50 Appendix R. The team also reviewed related documents that include the Fire Protection Program (FPP) and the Post-Fire Safe Shutdown Analysis.

Specific documents reviewed by the team are listed in the attachment.

1. **REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection

.01 Post-Fire Safe Shutdown From Outside Main Control Room (Alternative Shutdown) and Normal Shutdown

a. Inspection Scope

Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings (P&IDs), electrical drawings, the FPP and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that rely on shutdown from outside the control room. This review included verification that shutdown from outside the control room could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in

the safe shutdown and fire hazards analyses. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation and support systems functions. The team verified that the systems and components credited for use during this shutdown method would remain free from fire damage. The team verified that the transfer of control from the control room to the alternative shutdown location(s) would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Similarly, for fire areas that utilize shutdown from the control room, the team also verified that the shutdown methodology properly identified the components and systems necessary to achieve and maintain safe shutdown conditions.

Operational Implementation

The team verified that the training program for licensed and non-licensed operators included alternative shutdown capability. The team also verified that personnel required for safe shutdown using the normal or alternative shutdown systems and procedures are trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions which were verified included restoration of AC electrical power, establishing reactor coolant makeup and establishing decay heat removal.

Specific procedures reviewed for safe shutdown, including shutdown from outside the control room included the following:

- ON-114, Actual Fire Reported in the Power Block, Diesel Generator Room, Emergency Pump, Inner Screen or Emergency Cooling Tower, Rev. 11
- SE-10, Plant Shutdown from the Alternative Shutdown Panels, Rev. 14
- T-325-2/3, Area 25 Fire Guide, Rev. 0
- T-336-2/3, Area 36 Fire Guide, Rev. 0
- T-343-2/3, Area 43 Fire Guide, Rev. 0
- T-357-2/3, Area 57 Fire Guide, Rev. 1

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area. NRC inspection report 50-277; 50-278/2003-009 documented a non-cited violation for manual actions that had not received appropriate NRC approval. The scope of that NCV included manual actions in the fire areas inspected during the current inspection. The team verified that those actions met the criteria in Attachment 2 of

IP71111.05 and that condition report (CR) 00155529 remained open to track resolution of the manual action issues at the PBAPS.

The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests are adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

No findings of significance were identified.

.02 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the fire hazards analysis, safe shutdown analyses and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected. The team ensured that separation requirements of the FPP were maintained for the credited safe shutdown equipment and their supporting power, control and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

The team reviewed the licensee procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the FPP. A sample of hot work and transient combustible control permits were also reviewed. The team performed plant walkdowns to verify that protective features were being properly maintained and administrative controls were being implemented.

The team also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the fire protection program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries (including walls, fire doors and fire dampers), and electrical raceway fire barriers to ensure they were appropriate for the fire hazards in the area.

The team reviewed installation/repair and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design. The team also reviewed similar records for fire protection wraps to ensure the material was of an appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

b. Inspection Scope

The team reviewed the design, maintenance, testing and operation of the fire detection and suppression systems in the selected plant fire areas. This included verification that the manual and automatic detection and suppression systems were installed, tested and maintained in accordance with the NFPA code of record and that they would control and/or extinguish fires associated with the hazards in the selected areas. A review of the design capability of suppression agent delivery systems were verified to meet the code requirements for the fire hazards involved. The team also performed a walkdown of accessible portions of the detection and suppressions systems in the selected areas as well as a walkdown of major system support equipment in other areas (e.g., fire protection pumps, Halon and CO_2 storage tanks and supply system) as assess the material condition of the systems and components.

The team reviewed electric and diesel fire pump flow and pressure tests to ensure that the pumps were meeting their design requirements. The team also reviewed the fire main loop flow tests to ensure that the flow distribution circuits were able to meet the design requirements.

The team also assessed the fire brigade capabilities by reviewing training and qualification records and drill critique records. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact post-fire safe shutdown. In addition, the team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), and various fire brigade equipment (including smoke removal equipment) to determine operational readiness for fire fighting.

b. Findings

No findings of significance were identified.

.05 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed document reviews and plant walkdowns to verify that redundant trains of systems required for hot shutdown are not subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not directly, through production of smoke, heat or hot gases, cause activation of suppression systems that could potentially damage all redundant trains;
- A fire in one of the selected fire areas (or the inadvertent actuation or rupture of a fire suppression system) would not directly cause damage to all redundant trains (e.g., sprinkler caused flooding of other than the locally affected train).
- Adequate drainage is provided in areas protected by water suppression systems.

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

a. Inspection Scope

Alternative shutdown capability for the areas selected for inspection utilizes shutdown from outside the control room and is discussed in section 1R05.01 of this report.

.07 Circuit Analyses

a. Inspection Scope

The inspectors verified that the licensee performed a post-fire safe shutdown analysis for the selected fire areas and that the analysis appropriately identified the structures, systems and components important to achieving and maintaining safe shutdown. Additionally, the team verified that the licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground or other failures were identified, evaluated and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's review considered fire and cable attributes, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, multiple spurious actuations, actuations resulting in flow diversion or loss of coolant events.

The team also reviewed information in the Integrated Nuclear Data Management Systems (INDMS) for a sample of components, including a sample of instrumentation circuits, required for post-fire safe shutdown to verify that licensee's program appropriately evaluated documented and the adequacy of cable routing as described in the cable routing data base.

Cable failure modes were reviewed for the following components:

- MO2-10-017 RHR Shutdown Cooling Outboard Isolation Valve
- MO2-10-018 RHR Shutdown Cooling Inboard Isolation Valve
- PR3-6-96 Reactor Vessel Pressure Recorder
- RV3-02-071A Main Steam Line A Safety/Relief Valve

The team reviewed circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. The team confirmed that coordination studies had addressed multiple faults due to fire. Additionally, the team reviewed a sample of circuit breaker maintenance records to verify that circuit breakers for components required for post-fire safe shutdown were properly maintained in accordance with procedural requirements.

b. Findings

No findings of significance were identified.

.08 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the safe shutdown analysis and associated documents to verify an adequate method of communications would be available to plant operators following a fire. During this review the team considered the effects of ambient noise levels, clarity of reception, reliability and coverage patterns. The team also inspected the designated emergency storage lockers to verify the availability of portable radios for the fire brigade and for plant operators. The inspectors also verified that communications equipment such as repeaters, transmitters, etc. would not be affected by a fire.

b. Findings

No findings of significance were identified.

.09 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of eight-hour emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and

egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post-fire safe shutdown. The team also verified that the battery power supplies were rated for at least an 8-hour capacity. Preventive maintenance procedures and various documents, including the vendors manual and completed surveillance tests were reviewed to ensure adequate surveillance testing and periodic battery replacements were in place to ensure reliable operation of the eight-hour emergency lights and that the emergency lighting units were being maintained consistent with the manufacturer's recommendations and accepted industry practices.

b. Findings

No findings of significance were identified.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee had evaluated the need for any dedicated repair procedures, equipment, and materials to accomplish repairs of components required for cold shutdown which might be damaged by the fire to ensure cold shutdown could be achieved within the time frames specific in their design and licensing bases.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing safe shutdown functions or capabilities). The team also verified that the short term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.01 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team verified that the licensee was identifying fire protection and post-fire safe shutdown issues at an appropriate threshold and entering them into the corrective action program. The team also reviewed a sample of selected issues to verify that the licensee had taken or planned appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.01 (Closed) URI 05000277;05000278/2000-003-03 Multiple High Impedance Faults

This unresolved item was opened pending further review of the methodology used at PBAPS to address the potential adverse effects of multiple high impedance faults resulting from a plant fire. The issue remained open pending the results of an industry initiative to perform cable fire testing to further the understanding of fire-induced circuit failures. The adequacy of the methodology was questioned due to the wording in an NRC Safety Evaluation Report (SER) dated April 11, 1989. The information in the SER was based on a March 15, 1989, meeting at which licensee representatives met with the NRC staff to describe additional actions to be taken to address the MHIF issue.

The inspectors reviewed the licensee's methodology and related documentation that included the following:

- March 23, 1989, Letter from Philadelphia Electric Co. (PECO) to the NRC (Provided a written version of the March 15, 1989, presentation and handouts provided at that meeting.)
- NRC Inspection Report 50-277;50-278/89-15 dated May 24, 1989 (Documents NRC inspection of restoration procedures to be used to restore a power supply should it be lost as a result of MHIFs.)
- NRC Inspection Report 50-277;50-278/92-31 December 15, 1992 (Documents NRC review of the licensee's MHIF calculation.)
- September 16, 1993, Letter from NRC to PECO (Forwards an NRC SER that concludes the licensee's approach to MHIF concerns to be acceptable.)

Based on a review of these documents the team found that the April 11, 1989, SER approved the overall methodology being used by the licensee to address MHIFs but that a portion of the acceptance criteria in the analysis was not correctly reiterated in that

document. The inspectors found that the methodology used by the licensee is consistent with that contained in their March 23, 1989, followup letter to the NRC. Also, the followup inspection in 1992 (noted above) included a review of the licensee's MHIF analysis by a Region I electrical specialist and found the calculation to be acceptable. Additionally, the results of the industry cable fire testing did not provide information that would invalidate the methodology used by the licensee.

In summary, the licensee's approach to MHIF concerns involved an engineering analysis to determine the power sources that could be susceptible and the use of restorative procedures to address any vulnerabilities. The licensing and inspection documents noted above endorse that approach and verify the adequacy of the analysis and restorative procedures. No violations of NRC requirements were identified. This item is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented their preliminary inspection results to Mr. J. Grimes, Vice President PBAPS, and other members of the site staff at an exit meeting on February 10, 2006. No proprietary information was included in this inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Artus, Operations Training
N. Alexakos, Engineering
R. Bleeker, Fire Safe Shutdown
D. Duane, Fire Marshal
K. Hobbs, Licensing
C. Howell, Fire Barriers
K. Kauffman, Emergency Lighting
C. Pragman, Exelon Corporate
J. Rogenmuser, Communications
C. Sinopoli, Fire Protection Design
F. Sturniolo, Fire Protection Systems

NRC

M. Sykes, Chief, Engineering Branch 1, Division of Reactor Safety
F. Bower, Senior Resident Inspector, PBAPS
D. Schroeder, Resident Inspector, PBAPS

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000277/2003003-03 05000278/2003003-03	URI	Multiple High Impedance Faults

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing Documents

Peach Bottom Atomic Power Station Units 2 & 3, Fire Protection Program, Rev. 14
Peach Bottom Power Station, Units 2 & 3 - Issuance of Amendment RE: Fire Protection Program Changes, June 24, 2005
Technical Requirements Manual, PBAPS Unit 2, Rev. 10
NE-00296, Specification for Post-Fire Safe Shutdown Requirements, Rev. 1
P-S-51, Fire Protection System Design Basis Document, Rev. 9
P-T-10, Fire Safe Shutdown Design Basis Document, Rev. 9

Calculations/Engineering Evaluation Reports

0067-00104-TR-001, PBAPS Thermolag- Fire Endurance and Ampacity Derating Evaluation Report, Rev. 0
PM-1030, ECCS Pump Room Temperature Analysis - Fire Safe Shutdown, Rev. 0
PE-0193, Coordination Study For 480 V Load Centers and Motor Control Centers, Rev. 5
PE-0194, Coordination for 4.16 KV Class 1E Switchgear, Rev. 3
PEAF-0001, Flow Path Analysis For Development of INDMS Fire Safe Shutdown Database, Rev. 0
PEAF-0002, Startup Source Loading for Fire Safe Shutdown, Rev. 0
GE-NE-0000-0011-4483, SIL 636 Evaluation, Rev. 0
MDE-86-0786, Safe and Alternative Shutdown Analysis, Rev. 1
NE-163-3, Peach Bottom Power Rerate Thermo-hydraulic Analysis, Rev. 0
PB ECR 95-05708-000, Corrections to NE-163-3, dated 8/29/96
PF-0016-025, Fire Area 25 - Fire Safe Shutdown Analysis, Rev. 0
PF-0016-036, Fire Area 36 - Fire Safe Shutdown Analysis, Rev. 0
PF-0016-043, Fire Area 43 - Fire Safe Shutdown Analysis, Rev. 0
PF-0016-057, Fire Area 57 - Fire Safe Shutdown Analysis, Rev. 0
PM-1010, RHR Pump NPSH, Rev. 6

INDMS Program Reports

Component Location Report sorted by Fire Area/Room, dated January 10, 2006
Method Logics, dated January 10, 2006
System Logics, dated January 10, 2006
Equipment to Equipment Logics sorted by Main Equipment, dated January 10, 2006
Equipment to Equipment Logics sorted by Supporting Equipment, dated January 10, 2006
Cable Logics sorted by Equipment Designation, dated January 10, 2006
Safe and Alternative Shutdown Cable Location Report, dated January 23, 2006

Procedures

CC-AA-102, Design Input & Configuration Change Impact Screening, Rev. 11
CC-AA-103, Configuration Change Control, Rev. 10
CC-AA-209, Fire Protection Program Configuration Change Review, Rev. 1
CC-AA-211, Fire Protection Program, Rev. 2
CC-MA-209-1001, Fire Protection Program Configuration Change Review, Rev. 1
IC-11-0207, Preventive Maintenance For Model B-200 Emergency Lighting Units, Rev. 4
LS-AA-128, Regulatory Review of Proposed Changes to The Approved Fire Protection Program, Rev. 0
OP-AA-201-001, Fire Marshal Tours, Rev. 2
OP-AA-201-003, Fire Drill Performance, Rev. 6
OP-AA-201-005, Fire Brigade Qualification, Rev. 4
OP-AA-201-009, Control of Transient Combustibles, Rev. 4
OP-MA-201-004, Fire Prevention for Hot Work, Rev. 0
OP-MA-201-007, Fire Protection Impairment Control, Rev. 3
RT-O-037-710-2, Complete Safe Shutdown Emergency Lighting Battery Pack Inspection, Rev. 1

RT-O-037-719-2, Emergency Lighting Inspection (Alternate Shutdown Control Station Access/Egress Lights), Rev. 0
GP-4, Manual Reactor Scram, Rev. 4
ON-114 Bases, Actual Fire Reported in the Power Block, Diesel Generator Room, Emergency Pump, Inner Screen or Emergency Cooling Tower - Bases, Rev. 10
RRC 94.1-2, Reactor Operator Scram Actions, Rev. 0
SE-10 Bases, Plant Shutdown from the Alternative Shutdown Panels - Bases, Rev. 14
T-300, Fire Procedure, Rev. 1
T-300 BAS, Fire Procedure Bases, Rev. 1

Completed Tests/Surveillances

ST-O-037-310-2, Visual Walk Around Inspection of Fire Barriers, Rev. 4, Completed May 5, 2005
RT-O-22C-910-2, Alternative Shutdown Communication Functional Test, Rev. 2, Completed December 22, 2003 & May 2, 2005
RT-O-037-710-2, Complete Safe Shutdown Emergency Lighting Battery Pack Inspection, Rev. 1, Completed November 11, 2005
ST-I-037-223-2, Unit 2 4 KV Switchgear & Battery Room and Radwaste 135' Corridor Smoke Detectors Functional Test, Rev. 4, Completed January 17, 2003 & December 8, 2003
ST-I-037-244-2, E-4 Diesel Generator Heat Detectors Functional Test, Rev. 10, Completed January 21, 2005 & September 25, 2005
ST-I-037-291-2, Control Room Smoke Detectors Functional Test, Rev. 3, Completed May 23, 2003 & July 5, 2005
ST-I-37G-394-2, E-4 Diesel Generator CARDOX System Simulated Actuation and Air Flow Test, Rev. 4, Completed January 9, 2004 & December 9, 2005
ST-F-37B-317-2, Verification of Fire Hose Hydrostatic Testing, Rev. 4, Completed November 12, 2004
ST-M -037-310-2, Visual Walk Around Inspection of Fire Barriers, Rev. 4, Completed September 29, 2002, May 12, 2003, September 23, 2004 & May 5, 2005
ST-M -037-314-2, Visual Inspection of Encapsulated Electrical Raceways, Rev. 3, Completed May 25, 2005
ST-M -037-350-2, Safety Related Door Inspection, Rev. 0, Completed April 12, 2005
ST-M -037-399-2, Fire Damper Inspection, Rev. 6, Completed May 7, 2004
ST-O-37B-323-2, Unit 2 Battery Rooms, 4 KV Switchgear Rooms & Radwaste Corridor Area Sprinkler System Actuation, Rev. 3, July 28, 2003 & August 3, 2005
ST-O-37B-381-2, Underground Fire Main Flow Test, Rev. 5, Completed July 6, 2001 & November 8, 2004
ST-O -37C-330-2, Motor Driven Fire Pump Flow Rate Test, Rev. 6, Completed December 18, 2003 & February 17, 2005
ST-O -37D-340-2, Diesel Driven Fire Pump Flow Rate Test, Rev. 8, Completed December 9, 2005
RT-0-006-450-3, Feedwater Stop Valve MO-3-02-029A Alternative Control Test, Rev. 0, dated 9/16/03
RT-0-010-304-3, RHR/HPSW System Valves Alternative Control Testing, Rev. 8, dated 1/23/05
RT-0-010-310-3, RHR System Functional from the Alternative Control Panels, Rev. 7, dated 2/15/04

RT-0-010-750-3, MO-3-10-16A Power Supply Operation Check, Rev. 1, dated 11/12/03
RT-0-022C-910-3, Alternative Shutdown Communication Functional Test, Rev. 2, dated 5/1/04
RT-0-023-750-3, HPCI Functional Test from Alternative Control Panels, Rev. 12, dated 6/18/03
RT-0-023-760-3, HPCI Valve and Component Test From Alternative Control Panel, Rev. 10, dated 12/14/04
RT-0-023-770-3, E2 Alternative Control Panel Power Supplies and Logic Relay Check, Rev. 4, dated 12/20/03
RT-0-052-750-2, E2 Diesel Alternative Shutdown Control Function, Rev. 7, dated 3/4/04
RT-0-052-760-2, E4 Diesel and "A" ESW Pump Alternative Shutdown Control Function, Rev. 9, dated 2/3/04
RT-0-100-505-2, Emergency Operating Procedure Tool Inventory, Rev. 21
RT-0-100-950-2, Alternative Shutdown Key Accountability Verification, Rev. 4, dated 12/7/04
ST-0-010-306-2, "B" RHR Loop Pump, Valve, Flow, and Unit Cooler Functional and Inservice Test, Rev. 24
ST-0-032-301-3, HPSW Pump, Valve and Flow Functional and Inservice Test, Rev. 21

Fire Endurance Tests

BISCO Test #748-14, Metal Clad Fire Wall Penetration Barrier Fire Testing, May 21, 1979
BISCO Test #748-134, Utilizing BISCO SF-20 and BISCO SE-Foam, May 14, 1984
BISCO Test #748-217, 3 hour Fire Test of Various Electrical & Mechanical Seal Configurations, August 4, 1986
BISCO Test #748-237, ASTM E814-88 and IEEE 634-1978 Three-hour Fire Test of Multiple Penetrants Sealed with 12 in. Of SE Foam for Brand Industrial Services, Inc. And Public Services Electric & Gas Co., June 1990
Factory Mutual Research, Fire Endurance Test, Design FC-270, Silicone Foam Penetration Seal, December 14, 1978
1064-10, Fire Test Configuration for Silicon Foam Barriers, January 9,1979

Engineering Change Requests and Modifications

ECR PB 00-01805, Replace Existing Inverter/Charger/Battery 20D304 with New
ECR PB 04-00077, Convert/Upgrade Unit 2 HPCI CARDOX System to Manual System, Initiation Date, February 17, 2004
MOD 02079, HPCI MO-02-23-15 Redundant power feed, dated 2/11/87

Quality Assurance (QA) Audits and System Health Reports

NRC Fire Protection Triennial Inspection Prep. Plan and Pre-Inspection Self-Assessment Plan
4th Quarter 2005, Fire Protection/Fire Safe Shutdown Program Health Report
SHIP System Summary Report, December 2005
NOSA-PEA-04-09, Fire Protection Program Audit, dated 10/28/04

Drawings

A-168, Fire Detection & Suppression - Floor Plan at EL. 135'-0", Rev. 13
A-169, Fire Detection & Suppression - Floor Plan at EL. 165'-0", Rev. 9

A-172, Fire Detection & Suppression Emergency Cooling Towers, Recombiner & Diesel Generator Bldgs., Rev. 8
E-1053, Riser Diagram Lighting Panels - Unit No. 2, Rev. 14
E-1069, Lighting , Communications & Power Layout - Control Room, Rev. 17
E-1151, Raceway Layout - Turb. Bldg. Unit 2 H&V Fan Room EL. 195'-0", Rev. 19
E-1313, Lighting Symbol, Notes & Details, Rev. 1
E-5208, Radio Repeater System, Rev. 0
E-5214, Cable Block Diagram radio Equipment D.C. Power Distribution, Rec. 0

Piping and Instrumentation Drawings (P&IDs)

M-303, Main Steam, Bypass and Cross-around, Rev. 72
M-307, Condensate System, Rev. 60
M-308, Feedwater and Feed Pumps, Rev. 54
M-309, Condensate & Refueling Water Storage Transfer System, Rev. 62
M-315, Emergency Service Water and High Pressure Service Water Systems, Rev. 65
M-318, Fire Protection System, Sheets 1 - 9
M-351, Nuclear Boiler, Rev. 75
M-356, Control Rod Drive Hydraulic System Part A, Rev. 69
M-357, Control Rod Drive Hydraulic System Part B, Rev. 35
M-352, Nuclear Boiler Vessel Instrumentation, Rev. 60
M-353, Reactor Recirculation Pump System, Rev. 53
M-359, Reactor Core Isolation Cooling System, Rev. 49
M-360, RCIC Pump/Turbine Details Lube Oil & Control System, Rev. 54
M-361, Residual Heat Removal System, Rev. 79
M-362, Core Spray Cooling System, Rev. 61
M-365, High Pressure Coolant Injection System, Rev. 60
M-366, HPCI Pump/Turbine Details, Rev. 56

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E-1, Station Single Line Diagram, Rev. 41

E-1608, 480Vac Single Line Diagram – Unit 2, Rev. 19
E-1610, 480Vac Single Line Diagram – Unit 2, Rev. 41
E-1612, 480Vac Single Line Diagram – Unit 2, Rev. 66
E-1615, 480Vac Single Line Diagram – Unit 2, Rev. 72
E-1617, 480Vac Single Line Diagram – Unit 2, Rev. 58
E-1619, 480Vac Single Line Diagram – Unit 2, Rev. 21
E-1621, 480Vac Single Line Diagram – Unit 2, Rev. 60
E-1700, 480Vac Single Line Diagram – Unit 3, Rev. 38
E-1702, 480Vac Single Line Diagram – Unit 3, Rev. 37
E-1704, 480Vac Single Line Diagram – Unit 3, Rev. 31
E-1706, 480Vac Single Line Diagram – Unit 3, Rev. 48
E-1708, 480Vac Single Line Diagram – Unit 3, Rev. 24
E-1715, 480Vac Single Line Diagram – Unit 3, Rev. 67
E-1717, 480Vac Single Line Diagram – Unit 3, Rev. 56

Electrical Schematic Diagrams

M-1-S-23, Sh. 27, U2 Primary Containment Isolation System – RHR Reactor Shutdown Cooling Inboard Isolation Valve, MO-2-10-018, Rev. 101
M-1-S-23, Sh. 31, U2 Primary Containment Isolation System – RHR Reactor Shutdown Cooling Outboard Isolation Valve, MO-2-10-017, Rev. 100
M-1-S-25, Sh. 14, U3 Feedwater Control System – Reactor Pressure Recorder PR/LR-3-06-096, Rev. 57
M-1-S-25, Sh. 16, U3 Feedwater Control System – Reactor Pressure Recorder PR/LR-3-06-096, Rev. 54
M-1-S-36, Sh. 1 & 16-30, U3 – High Pressure Coolant Injection System
M-1-S-42, Sh. 1-18, U2 – Reactor Core Isolation Cooling System
M-1-S-52, Sh. 1, 9, 11 & 16, U3 – Automatic Blowdown System - safety relief valves RV-3-02-071A (B)(C)(D)
E-365, Sh. 1, Cable Block Diagram – Primary Containment Isolation System, Rev. 50
E-365, Sh. 2, Cable Block Diagram – Primary Containment Isolation System, Rev. 49
E-11-167, MCC bucket wiring for MO-2-10-017, Rev. 13
E-2893, "Alternative Shutdown Control Panel Layout," Rev. 12
E-2903, "Alternative Control Panel Instrumentation," Rev. 5
E-253, Sh. 2, "Main Control Room Annunciators – Reactor & Containment Cooling & Isolation – Unit 2," Rev. 55
E-238, Sh. 2, "Main Control Room Annunciators – Emergency Auxiliary Power System," Rev. 49
E-197, Sh. 1, "RCIC, HPCI & RHR Compartment & Core Spray Pump Room Coolers," Rev. 30

Barrier Raceway Installation Drawings

737-D-VC-24, Sh. 1-7, Thermo-Lag Upgrade Barrier 123-01, Rev. 0
E-2472, Sh. 58, Raceway Encapsulation Layout (ZC3D481), Rev. 26
E-2472, Sh. 76, Raceway Encapsulation Layout (ZC3D600), Rev. 28
ZC3D481, Unit 3, January 11, 2006
ZC3D482, Unit 3, January 11, 2006
ZC3D600, Unit 3, January 11, 2006

PD-7, Typical Penetration Seal Detail Cable Tray Wall Seal (SF-20), Rev. 1
PD-9, Typical Penetration Seal Detail Penetration Through Barrier Less Than Required Thickness, Rev. 0
PD-33, Typical Penetration Seal Detail Internal Conduit Seal (SE-Foam), Rev. 1
PS-226, Penetration Seal Locations Controlled Barriers - Room - No. 226 Unit 2, Rev. 1

Hot Work and Ignition Source Permits

C0209827 15 01
C0212627 01 01
C0212391 02 01
C0215025 01 01
R0956694 02 01

Transient Combustible Evaluations

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Fire Brigade Training

Fire Brigade Training, First Quarter 2006
Fire Brigade Training, 1st Quarter 2006, Lesson Plan & Slides
Fire Brigade Training, 4th Quarter 2005, Lesson Plan & Slides
Fire Brigade Training, 3rd Quarter 2005, Lesson Plan & Slides
Brigade Training & Offsite Fire Department Training
Fire Department Awareness Training for The PBAPS

Fire Drills and Critique

RT-F-101-922-2, Fire Drill Scenario & Critique
2003-02, 13 KV Bus Area, December 13, 2002
2003-03, 13 KV Bus Area, January 14, 2003
2005-01, Recirculation Pump Room, January 5, 2005
2005-07, Transformer Fire, March 31, 2005
2005-14, Battery Charger, July 27, 2005
2005-15, Battery Charger, August 4, 2005
2005-17, Oil Storage Room Turbine Building 110", November 9, 2005

Pre-Fire Plans

PF-108, Control Room Turbine Building 165' EL., Fire Zone 108, Rev. 2
PF-127, Unit 2 Emergency Battery/Switchgear Rooms & RW Corridor, TB-2-135, FZ-127, Rev. 4
PF-132, Diesel Generator Building, EL 127, Fire Zone 132, Rev. 3

Corrective Action Program Documents

00140118
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00251517
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00293313
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00368203
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00377388
00377509
00377577
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00377736
00377768
00382524
00383806
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00445335
00451417
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A1422849
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Miscellaneous Documents

Specification for Medium-Voltage Metal-Clad Switchgear and Associated Bus Duct For The Peach Bottom Atomic Power Station Units 2 & 3, August 13, 1971
Field Test Report No. 4, CARDOX, CO2 Initial Discharge Test for EDG Rooms, November 1971
Fire System Impairment Log, January 11, 2006
Peach Bottom Atomic Power Station Organization Charts, January 13, 2006
PEAF-0014, Penetration Seal Deviation Form, February 2, 2000
PS-239, Penetration Seal Locations Controlled Barriers - Room No. 239 Unit 2 & 3 Area 10 EL. 135'-0" Rev. 0
PSD #11, Penetration Seal Deviation Form, January 28, 1985
PSD #141, Penetration Seal Deviation Form, January 19, 2000
RW2-135-239-2002, 26" x 30" Blockout with 24" x 28" HVAC Duct W/2 1 ½ Hour Fire Dampers, July 12, 2000
RW2-135-239-2005, 24" x 48" Blockout with 16" x 32" Bus Duct Also Ten (10) Cables, July 12, 2000
Shift Attendance Briefing Sheet 1, Wednesday - January 25, 2006
PIMS Individual Fire Brigade Individual Qualification Report, January 25, 2006

Work Orders

C0188298
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R0496480
R0836289
R0860215
R0941959
R0947120
R0968956
R0996873
R1001069

Circuit Breaker Protective Devices Tests

R0815407, M-C-700-231, ITE (Brown Boveri) K-Line Static Circuit Breaker Calibration - Breaker E234 (1112)
R0815423, M-C-700-231, ITE (Brown Boveri) K-Line Static Circuit Breaker Calibration - Breaker E234 (1114)
R0875471, M-054-005, Magne-Blast Circuit Breaker Routine Preventive Maintenance - Breaker E23 (1605)
R0876622, M-054-005, Magne-Blast Circuit Breaker Routine Preventive Maintenance - Breaker E23 (1606)
R0819099, SI3M-54-E23-XXC4, Calibration Check and Functional Test of E23 Bus and E234 Bus Meters, Overcurrent Relays and Timers - Breaker E23 (1605)
R0654944, SI3M-54-E23-XXF8, Functional Trip Test of E23 and E234 Bus Overcurrent Relays - Breaker E23 (1605)

LIST OF ACRONYMS USED

BTP	Branch Technical Position
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CR	Condition Report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
FA	Fire Area
FPP	Fire Protection Program
FSAR	Final Safety Analysis Report
INDMS	Integrated Nuclear Data Management System
IP	Inspection Procedure
IR	Inspection Report
IPE	Individual Plant Examination

IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
NFPA	National Fire Protection Association
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PAR	Publicly Available Records
PBAPS	Peach Bottom Atomic Power Station
PECO	Philadelphia Electric Company
P&ID	Piping and Instrumentation Drawing
QA	Quality Assurance
RHR	Residual Heat Removal
RG	Regulatory Guide
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SER	Safety Evaluation Report
SRO	Senior Reactor Operator
TRM	Technical Requirements Manual