



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

May 13, 2011

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Rd.
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION – NRC TEMPORARY
INSTRUCTION 2515/183 INSPECTION REPORT 05000277/2011009 AND
05000278/2011009

Dear Mr. Pacilio:

On April 22, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Peach Bottom Atomic Power Station, using Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The enclosed inspection report documents the inspection results which were discussed on April 22, 2011, with Mr. Navin and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Peach Bottom Atomic Power Station to respond to extraordinary consequences similar to those that have recently occurred at the Japanese Fukushima Daiichi Nuclear Station. The results from this inspection, along with the results from this inspection performed at other operating commercial nuclear plants in the United States will be used to evaluate the U.S. nuclear industry's readiness to safely respond to similar events. These results will also help the NRC to determine if additional regulatory actions are warranted.

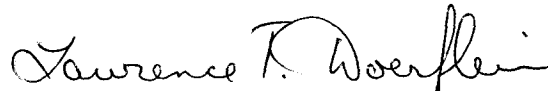
All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report. You are not required to respond to this letter.

M. Pacilio

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Sincerely,



Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report 05000277/2011009 and 05000278/2011009

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/RA/

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M. Pacilio

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 50-277, 50-278

License Nos: DPR-44, DPR-56

Report No: 05000277/2011009, 05000278/2011009

Licensee: Exelon Generation Company, LLC

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

Location: Delta, Pennsylvania

Dates: April 15 – April 22, 2011

Inspectors: C. Cahill, Senior Reactor Analyst, Division of Reactor Safety

Approved by: Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000277/2011009 and 05000278/2011009; 04/15/2011 – 04/22/2011; Peach Bottom Atomic Power Station Units 2 and 3; Temporary Instruction 2515/183 - Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event.

This report covers an announced Temporary Instruction (TI) inspection. The inspection was conducted by a region based inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

INSPECTION SCOPE

The intent of the TI is to provide a broad overview of the industry's preparedness for events that may exceed the current design basis for a plant. The focus of the TI was on (1) assessing the licensee's capability to mitigate consequences from large fires or explosions on site, (2) assessing the licensee's capability to mitigate station blackout (SBO) conditions, (3) assessing the licensee's capability to mitigate internal and external flooding events accounted for by the station's design, and (4) assessing the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. If necessary, a more specific followup inspection will be performed at a later date.

INSPECTION RESULTS

All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report.

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events, typically bounded by security threats, committed to as part of NRC Security Order Section B.5.b issued February 25, 2002, and severe accident management guidelines and as required by Title 10 of the Code of Federal Regulations (10 CFR) 50.54(hh). Use Inspection Procedure (IP) 71111.05T, "Fire Protection (Triennial)," Section 02.03 and 03.03 as a guideline. If IP 71111.05T was recently performed at the facility the inspector should review the inspection results and findings to identify any other potential areas of inspection. Particular emphasis should be placed on strategies related to the spent fuel pool. The inspection should include, but not be limited to, an assessment of any licensee actions to:

Licensee Action	Describe what the licensee did to test or inspect equipment.
<p>a. Verify through test or inspection that equipment is available and functional. Active equipment shall be tested and passive equipment shall be walked down and inspected. It is not expected that permanently installed equipment that is tested under an existing regulatory testing program be retested.</p>	<p>The licensee reviewed the B.5.b equipment inspection and testing preventative maintenance tasks to ensure that the tasks were up to date and the equipment was available and functional. In addition, the site conducted walkdowns to verify the adequacy of required inventories. Portable equipment such as pumps and generators were operated to verify readiness. B.5.b and severe accident management guidelines (SAMG) procedures were verified current and staged in the appropriate locations. To verify that equipment was available and functional, the licensee completed inventories of B.5.b and SAMG equipment under RT-O-100-505-2, "EOP Tool Inventory," RT-O-100-580-2, "B.5.b Tool and Material Inventory," and RT-O-037-376-2, "Outside Fire Brigade Equipment Inventory and Inspection." Additionally, the adequacy of emergency radios and dosimetry was verified. The licensee tested the portable pump under work order R1176714 and portable power supplies under work order R1094814.</p> <p>Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).</p>

<p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The inspector assessed the licensee's capabilities by conducting a review of the licensee's walkdown activities. In addition, the inspector independently walked down and inspected all major B.5.b contingency response equipment staged throughout the site. The inspector reviewed completed inventories and compared them with the results of field observations. Additionally, the resident inspector observed the testing of the portable pump under R1176714 on March 22, 2011.</p>
	<p>Discuss general results including corrective actions by licensee.</p>
	<p>The inspector concluded that equipment was available and functional. No significant deficiencies were identified. The licensee did identify several enhancements to improve the long term reliability of equipment, such as repairing the equipment trailer tarps and removing fuel out of standby generators. These were documented in AR 01192350 and AR 01189595 respectively. Additionally, the licensee identified several enhancements to increase the survivability of portable equipment in beyond-design basis type events. All equipment (active and passive) designated for B.5.b was verified by the licensee to be in applicable procedures. All passive equipment for both units was walked down and verified to be in place and ready for use. The licensee issued Action Request (AR) 01189595 to track the actions associated with this activity.</p>

Licensee Action	Describe the licensee's actions to verify that procedures are in place and can be executed (e.g. walkdowns, demonstrations, tests, etc.)
<p>b. Verify through walkdowns or demonstration that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) are in place and are executable. Licensees may choose not to connect or operate permanently installed equipment during this verification.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The licensee performed audits of all applicable procedures identified in AR 01189595 for procedures located in the Main Control Room, Shift Manager's office, Technical Support Center, and Offsite Support Center. In addition, Records Management also audited all special event (SE) procedures and all T-200-3 series procedures. These audits verified that all documents were current and in good condition. Licensee personnel walked down all applicable procedures to verify the ability of the procedures to be executed.</p>
	<p>Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.</p>
	<p>The inspector examined the station's established guidelines and implementing procedures for the B.5.b mitigation strategies. The inspector assessed how the licensee coordinated and documented the interface/transition between existing off-normal and Emergency Operating Procedures (EOPs) with the mitigation strategies. The inspector selected a number of mitigation strategies and conducted plant walk downs with responsible plant staff to assess: the adequacy and completeness of the procedures; familiarity of operators with the procedure objectives and specific guidance; staging and compatibility of equipment; and the practicality of the operator actions prescribed by the procedures, consistent with the postulated scenarios.</p>
	<p>Discuss general results including corrective actions by licensee.</p>

	<p>The inspector concluded that procedures to implement the strategies associated with B.5.b and 10CFR50.54(hh) were in place and were executable. The licensee reviewed SAMG strategies and did not identify any deficiencies. Procedures used for B.5.b were reviewed by the licensee and walkdowns were performed by operators to ensure actions taken in the field in response to a B.5.b event could be performed. Some minor procedural enhancements were identified by the licensee and entered into the corrective action program (CAP).</p>
<p>Licensee Action</p>	<p>Describe the licensee's actions and conclusions regarding training and qualifications of operators and support staff.</p>
<p>c. Verify the training and qualifications of operators and the support staff needed to implement the procedures and work instructions are current for activities related to Security Order Section B.5.b and severe accident management guidelines as required by 10 CFR 50.54 (hh).</p>	<p>The licensee conducted initial and continuing B.5.b training and verified that training was completed. Additionally, the licensee verified that all required operations personnel have received initial and continuing SAMG training. Both B.5.b and SAMG training is an annual training requirement in accordance with the Long Range Training Plan. The licensee reviewed training records and documentation to ensure that the training was up to date and verified that there was a sufficient number of personnel trained on-site and throughout Exelon to implement the severe accident mitigation guidelines.</p>
	<p>Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff.</p>
	<p>The inspector examined the introductory and periodic/refresher training provided to the Operations and Security Department staffs most likely to be tasked with the implementation of the B.5.b mitigation strategies. The inspector's review consisted of examination of training records, actions completed as documented in AR 01189595, and interviews with station personnel.</p>
	<p>Discuss general results including corrective actions by licensee.</p>

	<p>Based upon the inspector's review of training associated with AR 01189363, interviews, and observations of plant staff during the walk down of mitigating strategies in the field, the inspector concluded that overall B.5.b and severe accident management guideline training provided by the licensee was appropriate and consistent with regulatory and industry guidelines.</p>
<p>Licensee Action</p>	<p>Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.</p>
<p>d. Verify that any applicable agreements and contracts are in place and are capable of meeting the conditions needed to mitigate the consequences of these events.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The licensee verified that agreements from the municipal fire departments and other commitments for various pieces of support equipment required to implement the strategies were in place and active. The primary memorandum of understanding associated with this strategy is with the Delta, Pennsylvania Fire Department. The licensee renewed this agreement with the Delta Fire Company on February 1, 2011. As a result of this effort the licensee reaffirmed the conditions of this agreement with the Delta Fire Chief. The licensee documented this review in AR01189595. Additionally, the licensee reviewed current interface agreements for support, and contracts with suppliers and vendors to ensure that they were capable of meeting the conditions needed to mitigate the consequences of large fire or explosion type event.</p> <p>For a sample of mitigating strategies involving contracts or agreements with offsite entities, describe inspector actions to confirm agreements and contracts are in place and current (e.g., confirm that offsite fire assistance agreement is in place and current).</p> <p>The inspector verified that the licensee had in place a current memorandum of understanding (MOU) or a letter of agreement (LOA) with off-site agencies to provide assistance in mitigation strategies.</p> <p>Discuss general results including corrective actions by licensee.</p>

	<p>No deficiencies were identified. The inspector concluded that the agreement and contracts in place were appropriate for the strategies evaluated.</p>
<p>Licensee Action</p>	<p>Document the corrective action report number and briefly summarize problems noted by the licensee that have significant potential to prevent the success of any existing mitigating strategy.</p>
<p>e. Review any open corrective action documents to assess problems with mitigating strategy implementation identified by the licensee. Assess the impact of the problem on the mitigating capability and the remaining capability that is not impacted.</p>	<p>The licensee identified minor equipment and procedural issues and entered them into the CAP. A list of corrective actions is included in the documents reviewed listed in the Attachment to this report. The inspector sampled the identified corrective actions and determined that none of the issues identified were significant or would preclude the successful implementation of any existing mitigating strategy.</p>

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR 50.63, "Loss of All Alternating Current Power," and station design, is functional and valid. Refer to TI 2515/120, "Inspection of Implementation of Station Blackout Rule Multi-Plant Action Item A-22" as a guideline. It is not intended that TI 2515/120 be completely reinspected. The inspection should include, but not be limited to, an assessment of any licensee actions to:

Licensee Action	Describe the licensee's actions to verify the adequacy of equipment needed to mitigate an SBO event.
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.	The licensee conducted walkdowns of all onsite required SBO related equipment to ensure that it was adequate, properly staged, tested, and maintained. In addition, the licensee ensured that the off-site alternate AC power source was capable of being aligned to support the site in the required time. The licensee also conducted a review of open CAP items for potential SBO equipment impact.
	Describe inspector actions to verify equipment is available and useable.
	The inspector assessed the licensee's capability to mitigate SBO conditions by conducting a review of the licensee's walkdown activities, interviewing operators, and independently walking down on-site SBO equipment. Specifically, the inspector walked down all emergency diesel generators, station batteries, SBO switching batteries, and alternate AC power source switchgear. The inspector also reviewed a sample of SBO related maintenance and test activities to ensure that the equipment was properly, designed, tested, and maintained.
	Discuss general results including corrective actions by licensee.

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR 50.63, "Loss of All Alternating Current Power," and station design, is functional and valid. Refer to TI 2515/120, "Inspection of Implementation of Station Blackout Rule Multi-Plant Action Item A-22" as a guideline. It is not intended that TI 2515/120 be completely reinspected. The inspection should include, but not be limited to, an assessment of any licensee actions to:

Licensee Action	Describe the licensee's actions to verify the adequacy of equipment needed to mitigate an SBO event.
<p>a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee conducted walkdowns of all onsite required SBO related equipment to ensure that it was adequate, properly staged, tested, and maintained. In addition, the licensee ensured that the off-site alternate AC power source was capable of being aligned to support the site in the required time. The licensee also conducted a review of open CAP items for potential SBO equipment impact.</p>
	<p>Describe inspector actions to verify equipment is available and useable.</p>
	<p>The inspector assessed the licensee's capability to mitigate SBO conditions by conducting a review of the licensee's walkdown activities, interviewing operators, and independently walking down on-site SBO equipment. Specifically, the inspector walked down all emergency diesel generators, station batteries, SBO switching batteries, and alternate AC power source switchgear. The inspector also reviewed a sample of SBO related maintenance and test activities to ensure that the equipment was properly, designed, tested, and maintained.</p>
	<p>Discuss general results including corrective actions by licensee.</p>

	<p>No deficiencies were identified. The inspector concluded that the licensee's reviews verified the adequacy of the SBO equipment to respond to an event. During their reviews, the licensee identified potential enhancements in emergency lighting and documented these results in AR 01189595.</p>
<p>Licensee Action</p>	<p>Describe the licensee's actions to verify the capability to mitigate an SBO event.</p>
<p>b. Demonstrate through walkdowns that procedures for response to an SBO are executable.</p>	<p>The licensee conducted walkdowns to verify that the procedures for response to an SBO were executable. Additionally, the licensee performed audits of all applicable procedures located in the Main Control Room, Shift Manager's office, Technical Support Center, and Offsite Support Center. These audits verified that all documents were current and in good condition.</p>
	<p>Describe inspector actions to assess whether procedures were in place and could be used as intended.</p>
	<p>The inspector reviewed the licensee actions to demonstrate that procedures for response to an SBO are executable, as documented in their internal review report associated with the Fukushima Daiichi Nuclear Station Fuel Damage Event. The inspector also conducted a table-top exercise of the site SBO, including reviewing procedures used by the offsite organization for the operation of the alternate AC power supply (i.e., Conowingo Hydroelectric Station). The inspector independently walked down the station blackout procedure SE-11.1, in the field and on the simulator to verify its adequacy.</p>
	<p>Discuss general results including corrective actions by licensee.</p>
	<p>No deficiencies were identified. The inspector concluded that the licensee's reviews verified that SBO procedures were adequate and executable to respond to an SBO condition.</p>

03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design. Refer to IP 71111.01, "Adverse Weather Protection," Section 02.04, "Evaluate Readiness to Cope with External Flooding" as a guideline. The inspection should include, but not be limited to, an assessment of any licensee actions to verify through walkdowns and inspections that all required materials and equipment are adequate and properly staged. These walkdowns and inspections shall include verification that accessible doors, barriers, and penetration seals are functional.

Licensee Action	Describe the licensee's actions to verify the capability to mitigate existing design basis flooding events.
<p>a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee conducted walkdowns and inspections of all required materials and equipment necessary to mitigate an internal or external flood to ensure they were adequate and properly staged. As part of these walkdowns, the licensee considered the potential that the equipment's function could be lost during seismic events appropriate for the site. The licensee documented the area or structures, systems and components (SSC) inspected, procedures and surveillances/preventative maintenance activities reviewed, permanent or portable SSC inspected, and vulnerabilities identified.</p>
	<p>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</p>
	<p>The inspector independently walked down risk significant flood protection features and structures associated with the emergency diesel generators, emergency cooling tower, and emergency/high pressure service water. The inspector also walked down portions of the flooding procedure, SE-4, and reviewed the design qualification and installation of a selected sample of flood seals. The inspector also reviewed a sample of flood related corrective actions resulting from the licensee's review.</p>
	<p>Discuss general results including corrective actions by licensee.</p>

	<p>The inspector concluded that that all required materials were adequate and properly staged, tested, and maintained to mitigate a flooding event within the plant's design basis. While no operability or significant concerns were identified, the licensee identified several minor flood barrier and door discrepancies and procedural enhancements which were appropriately entered into the corrective action program. Beyond design basis vulnerabilities were identified and entered into the corrective action program for further evaluation. The inspector reviewed the associated action requests listed in the Attachment to this report, and determined the licensee's initial responses, including their assessment and prioritization, were appropriate.</p>
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03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. Assess the licensee's development of any new mitigating strategies for identified vulnerabilities (e.g., entered it in to the corrective action program and any immediate actions taken). As a minimum, the licensee should have performed walkdowns and inspections of important equipment (permanent and temporary) such as storage tanks, plant water intake structures, and fire and flood response equipment; and developed mitigating strategies to cope with the loss of that important function. Use IP 71111.21, "Component Design Basis Inspection," Appendix 3, "Component Walkdown Considerations," as a guideline to assess the thoroughness of the licensee's walkdowns and inspections.

<p>Licensee Action</p>	<p>Describe the licensee's actions to assess the potential impact of seismic events on the availability of equipment used in fire and flooding mitigation strategies.</p>
<p>a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee utilized industry guidance to assess the potential impact of seismic events on the availability of equipment used in fire and flooding mitigation strategies. These industry guidelines were used to govern the conduct of walkdowns and inspections of both permanent and temporary plant equipment.</p>
	<p>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</p>
	<p>The inspector reviewed the scope of the licensee assessments and the results of their walkdowns. The inspector also independently walked down a sample of risk significant areas of the plant to assess beyond design basis seismic and flooding vulnerabilities. Systems of particular interest included the emergency diesel generators, service water, emergency cooling tower, vital switchgear, and batteries. Additionally, the inspector reviewed the licensee's design basis documents for Internal Hazards (P-T-09) and External Hazards (P-T-07). The inspector concluded that the licensee meets the current licensing and design bases for fire protection and flooding.</p>

	<p>Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.</p>
	<p>The inspector concluded that the licensee's reviews were comprehensive. In reviewing beyond design basis flooding and seismic interactions, the licensee identified several potential enhancements that could improve the survivability of equipment or mitigation strategies. These enhancements mainly focused on improvements to the seismic quality of the fire suppression systems and the flood detection and sump pump systems. Additionally, the licensee identified enhancements in the placement and storage of portable equipment used to mitigate beyond design basis events. The licensee documented their observations in the Corrective Action Program under issue reports (IR's) 1199602, 1199620, 1199643, 1199739, 1199761, 1199773, and 1201621 for further evaluation.</p>

Meetings

40A6 Exit Meeting

The inspectors presented the inspection results to Mr. P. Navin and other members of licensee management at the conclusion of the inspection on April 22, 2011. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Navin, Operations Director
J. Armstrong, Regulatory Assurance Manager
P. Kester, Design Engineering
J. Lyter, Operations Support
J. McClintock, Operator Training
C. Sinopoli, Fire Protection Engineer
R. Smith, Regulatory Assurance

Nuclear Regulatory Commission

A. Ziedonis, Peach Bottom Resident Inspector

Other

B. Fuller, Nuclear Safety Specialist, Pennsylvania Department of Environmental Protection

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events

Procedures:

TSG-4.1, Peach Bottom Station Operational Contingency Guidelines, Rev. 17

Completed Tests:

RT-O-100-505-2, Emergency Operating Procedure Tool Inventory, 3/20/11
RT-O-100-580-2, B.5.b Tool and Material Inventory, 3/18/11

Corrective Action Program Reports:

AR 01188661, Process for Evaluation of IER L1 11-1
AR 01189363, Enhancements to Operations B.5.b Training

A-2

AR 01189595, Issue to Track NER NC-11-009-Red Actions
AR 01190781, New Test Equipment Needed for B.5.b Power Supply PM
AR 01190791, Human Performance Enhancement for B.5.b Skid
AR 01192350, B.5.b Hose Trailer Cover Torn
AR 01194032, No Open PO for Firefighting Foam Service
AR 01196123, Improvements for SRV Portable Power Cart Storage
AR 01198039, Suggestions for B.5.b Pump
AR 01200806, B.5.b Diesel Driven Pump Location Enhancement
IR 01199602, Fire Protection Seismic Enhancements
IR 01199620, Fire Standpipe Seismic Enhancements
IR 01199643, Equipment Inaccessibility
IR 01199739, Pipe Hanger Bent
IR 01199761, Motor Generator Set Lube Oil Fire Protection Engancements
IR 01199773, Ladder/Cardox System Interaction
IR 01202173, Optimizing Refuel Bridge Placement for Spray
IR 01201621, Survivability Improvements

Other:

W/O R1176714, Perform B.5.b Pump PM
Letter of Agreement between Maryland Emergency Management Agency and Peach Bottom Atomic Power Station, 2/9/10
Letter of Agreement between York Hospital and Peach Bottom Atomic Power Station, 1/23/11
Letter of Understanding between Delta-Cardiff Volunteer Fire Co. and Peach Bottom Atomic Power Station, 2/1/11
Upper Chesapeake Health System MOU, 9/29/98
Response for IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage, Enclosure 1

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions

Procedures:

MAT 5396B, Station Blackout Functional, Rev. 0
MAT 5396C, SBO Load Testing, Rev. 0
MAT 5396D, Station Blackout Event Simulation, Rev. 0
OP-CO-03-096, Energize 191-00 Line Using No. 5 or 6 Generator as a Dedicated Feed, Rev. 5
SE-11, Loss of Offsite Power, Sh. 1-6, Rev. 13
SE-11.1, Operating Station Blackout Line during a LOOP Event, Rev. 7
SO 51H.7.B, SBO Disconnect Switch Operations, Rev. 7

Drawings:

E-1, Single Line Diagram Station, Sh. 1, Rev. 47

Completed Tests:

RT-M-51H-941-2, SBO 125 Vdc System Station Battery Yearly Inspection, 4/9/10
RT-O-51H-710-2, Station Blackout Battery Quarterly Inspection, 1/3/11
ST-O-51H-900-2, Station Blackout Line Loading Verification, 12/11/09

Corrective Action Program Reports:

A1255565, Tie the SBO to 351 Line
A1257510, MOD P00907 – SBO Enhancement Tie to 351 Line
AO 50F.2-3, Backfeeding through Unit 3 Main and Unit Aux Transformer
AR 01189595, Issue to Track NER NC-11-009-Red Actions
AR 01193459, Labeling Enhancements ID During Walkdown
AR 01193720, ECR 09-00523 Revision 0 MCR and Breaker Labeling

Other:

Memorandum, PBAPS Units Common, Mod 5396 SBO Substation Mod Acceptance Test,
5396C, 10/5/94
PEAM-0008, Station Blackout – Mechanical Time Line HPCI and RCIC Loads During SBO
P-T-13, Station Blackout Design Basis Document, Rev. 7
Response for IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage, Enclosure 2

03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design

Procedures:

CC-PB-201, Hazard Barrier Control Program, Rev. 0
PT-T-07, External Hazards, Rev. 2
SE-4, Flood, Rev. 25
SO 48.1.B, Emergency Cooling Water System Startup, Rev. 13

Drawings:

6280 A-490, Barrier Plans CW Pump Structure, Emergency Cooling Tower/DG Building, Rev. 4
PD-25, Typical Penetration Seal Detail Link Seal, Rev. 0

Corrective Action Program Reports:

AR 01187639, CDBI: Flood Seal Inspection
AR 01187702, Exelon Fleet Response to Earthquake in Japan
AR 01194871, Documentation for NRC Readiness TI 2515/183
AR 01197429, Penetration Link Seal Not Fully Within Barrier
AR 01197453, Conowingo and Safe Harbor Phone Numbers Wrong in SE-4
AR 01197460, Minor Cracking in Grout Penetration Seal Around Pipe
AR 01197500, Void Found in Concrete Wall of Diesel Cardox Room

Other:

Response to IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage,
Recommendation 3
SOC Daily MRC Report, 3/17/11

03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events

Procedures:

P-T-07, External Hazards, Rev. 2
P-T-09, Internal Hazard, Rev. 9

Corrective Action Program Reports:

AR 01189595, Issue to Track NER NC-11-009-Red Actions
AR 01205355, Manlift Found Unsecured in the Cardox Room
AR 01205366, NRC ID CT Terminal Box Door Found Open

Other:

Question 3 and 4b – IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage, *Guidelines for Assessing Flood Mitigation*, Rev. 0
Question 4a- IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage, *Guidelines for Assessing Fire Suppression Capabilities*, Rev. 2
Response for IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage, Enclosures 1-4

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AR	Action Request
CAP	Corrective Action Program
CFR	Code of Federal Regulations
EOP	Emergency Operating Procedure
IR	Issue Report
LOA	Letter of agreement
MOU	Memorandum of Understanding
NRC	United States Nuclear Regulatory Commission
SAMG	Severe Accident Management Guidelines
SBO	Station Blackout
SE	Special Event
SSC	Structures, Systems and Components