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

May 13, 2011

Mr. Thomas P. Joyce
President and Chief Nuclear Officer
PSEG Nuclear LLC - N09
P.O. Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION – NRC TEMPORARY INSTRUCTION 2515/183 INSPECTION REPORT 05000354/2011009

Dear Mr. Joyce:

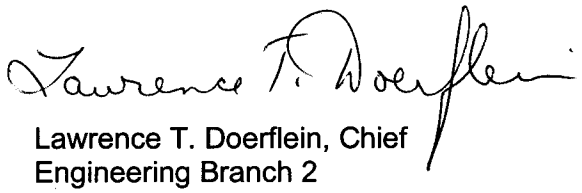
On April 20, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Hope Creek Generating Station, using Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The enclosed inspection report documents the inspection results which were discussed on April 21, 2011, with Mr. John Perry, Hope Creek Site Vice President, and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Hope Creek Generating 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 United States 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.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (Public Electronic Reading Room)

Sincerely,



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

Docket No.: 50-354
License No.: NPF-57

Enclosure: Inspection Report No. 05000354/2011009

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Sincerely,

/RA/

Lawrence T. Doerflein, Chief
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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-354
License No:	NPF-57
Report No:	05000354/2011009
Licensee:	PSEG Nuclear LLC (PSEG)
Facility:	Hope Creek Generating Station
Location:	P.O. Box 236 Hancocks Bridge, NJ 08038
Dates:	April 14, 2011 - April 20, 2011
Inspector:	S. Pindale, Senior Reactor Inspector, Division of Reactor Safety
Approved by:	Lawrence T. Doerflein, Chief Engineering Branch 2 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000354/2011009; 04/14/2011 – 04/20/2011; Hope Creek Generating Station; 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.
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. This review should be done for a reasonable sample of mitigating strategies/equipment.	The licensee reviewed key procedures and guidelines, including the Severe Accident Management Guidelines (SAMG) and Supplemental SAMGs, and relevant abnormal operating procedures to identify the non-permanent active equipment to be tested and the passive equipment to be walked down and inspected. The scope of this included equipment specifically designated for B.5.b or severe accident mitigation (i.e., hoses, fittings, diesel battery charger, etc.). The licensee reviewed the work management database to determine the preventive maintenance tasks associated with the identified equipment, and either verified that the tasks were satisfactorily performed since March 15, 2011, or the tasks were re-performed.
	Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).
	The inspector evaluated the adequacy of installed and portable equipment staged explicitly for implementation of the mitigation strategies. The types of equipment examined included: interior fire water supply piping and hose stations; portable pump and associated suction and discharge hoses, adapters, and tools; portable AC/DC power supplies; and equipment lockers and associated tools. The inspector review included field verification and inventory checks of selected standby and staged equipment, and compatibility of the portable equipment with installed systems. In addition, the inspector evaluated the staging/storage locations of B.5.b related equipment to ensure the survivability and availability of equipment.

		Discuss general results including corrective actions by licensee.
		The licensee identified several minor deficiencies during their review for which corrective action program (CAP) notifications were initiated. The licensee concluded that there were no significant deficiencies with respect to strategy implementation. The inspector's review concluded that this equipment was available and functional.
Licensee Action		Describe the licensee's actions to verify that procedures are in place and can be executed (e.g. walkdowns, demonstrations, tests, etc.)
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. This review should be done for a reasonable sample of mitigating strategies/equipment.		The licensee reviewed those procedures/guidelines utilized to mitigate the consequences of B.5.b related events and severe accidents. Each procedure/guideline was walked down post March 15, 2011, to verify that they were satisfactory and executable.
		Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.
		The inspector examined the station's established guidelines and implementing procedures for the B.5.b mitigation strategies and assessed how the licensee coordinated and documented the interface/transition between existing off-normal and emergency operating procedures with the mitigation strategies. The inspector selected several mitigation strategies and conducted plant walkdowns with licensed and non-licensed operators to assess: the adequacy and completeness of the procedures/guidelines; 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.
		Discuss general results including corrective actions by licensee.

		The inspector concluded that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) were in place and were executable. The licensee reviewed SAMG and Supplemental SAMG strategies and did not identify significant deficiencies. Some minor procedural enhancements were identified by the licensee and entered into the CAP for resolution. As a result of the walkdowns conducted by the inspector, several additional minor procedure deficiencies/enhancements were identified, for which CAP notifications were initiated for resolution. The inspector reviewed the associated implemented or planned actions for each notification and determined them to be appropriate.
Licensee Action		Describe the licensee's actions and conclusions regarding training and qualifications of operators and support staff.
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).		The licensee verified that the training and qualifications of operators and all emergency response organization positions were current for activities related to B.5.b and SAMGs. This review identified the number of personnel in each of the required positions and identified the associated required qualifications.
		Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff
		The inspector examined the training material provided to the site personnel to be tasked with implementing the B.5.b mitigation strategies. The inspector assessed the licensee's training and qualification activities by conducting a review of training and qualification materials and records related to B.5.b, SAMG and Supplemental SAMG event response.

		Discuss general results including corrective actions by licensee.
		No significant deficiencies were identified. The licensee identified one issue regarding the 6-year continuing training frequency requirement for non-operations personnel qualified as a SAMG evaluator (similarly qualified licensed operators receive this training every two years). A CAP notification was written to address this issue. Based upon the inspector's review of formal training, interviews, and observations of plant staff during the walkdown of mitigating strategies in the field, the inspector concluded that overall B.5.b and SAMG training was appropriate.
Licensee Action		Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.
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. This review should be done for a reasonable sample of mitigating strategies/equipment.		The licensee identified applicable agreements and contracts committed to be in place for the mitigation of B.5.b related events. The licensee verified that the agreements and contracts were current, and documented whether the contracts/agreements were capable of meeting the associated mitigation strategies.
		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).

		The inspector verified that the licensee had in place current memoranda of understanding (MOU) or a formal agreement with off-site agencies to provide assistance in mitigation strategies. The inspector selected a sample of MOUs for detailed review to verify consistency between the MOU and the associated mitigation strategy.
		Discuss general results including corrective actions by licensee.
		The inspector verified that the licensee had in place current memorandum of understanding (MOU) or a letter of agreement (LOA) with off-site agencies to provide assistance in mitigation strategies. The inspector independently verified a sample of MOUs were consistent with the associated strategy, and concluded that the applicable agreements or contracts were in place. No deficiencies were identified.
Licensee Action		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.
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.		Several CAP notifications were reviewed during this inspection, and are listed in the Attachment to this report. These involved items such as enhancements to procedures associated with the mitigating strategies and minor equipment inventory and storage deficiencies. The inspector concluded that there was not a significant adverse impact on the B.5.b strategy mitigating capabilities.

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 reviewed procedures used for mitigating SBO events to identify the required non-permanent support equipment for walkdowns. The licensee then conducted walkdowns of this equipment to ensure they were adequate and properly staged.
	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. In addition, the inspector selected a sample of equipment utilized/required for mitigation of a SBO and conducted independent walkdowns of that equipment to verify that the equipment was properly aligned and staged.
	Discuss general results including corrective actions by licensee.
	The licensee's reviews verified that SBO equipment was ready to respond to a SBO condition. Minor procedure enhancements were identified by the licensee and the appropriate notifications were initiated. The inspector concluded all required materials were adequate and properly staged, tested, and maintained, as necessary.

Licensee Action		Describe the licensee's actions to verify the capability to mitigate an SBO event.
b. Demonstrate through walkdowns that procedures for response to an SBO are executable.		The licensee performed a walkdown of the procedures used to combat an SBO condition to demonstrate that the procedures were executable.
		Describe inspector actions to assess whether procedures were in place and could be used as intended.
		The inspector assessed the licensee's SBO capabilities by conducting a review of the licensee's walkdown activities. In addition, the inspector selected several sections of the procedures walked down by the licensee and conducted walkdowns to independently verify the licensee's conclusions.
		Discuss general results including corrective actions by licensee.
		No deficiencies were identified during the licensee's review. The inspector performed an independent walkdown of SBO procedures and concluded they were executable.

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.
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.	The licensee performed walkdowns and inspections of permanent plant equipment to ensure that accessible doors, barriers, and penetration seals were functional. The licensee verified by walkdown and inspection that all required materials and equipment (portable equipment) were properly staged. Regarding the portable equipment, the licensee's walkdown ensured it was properly staged and would remain functional following a safe shutdown earthquake event. The rooms and structures that were considered in the review included those required by design basis to mitigate the consequences of a flooding event, both internal and external.
	Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.
	The inspector assessed the licensee's capabilities to mitigate flooding by conducting a review of the licensee's walkdown activities. In addition, the inspector conducted independent walkdowns of selected flood mitigation equipment to confirm the licensee's overall assessment of the unit's flood mitigating capabilities. The licensee's flood mitigation procedures were reviewed to verify usability. The inspector assessed these procedures to be usable as intended.
	Discuss general results including corrective actions by licensee.

		The inspector concluded that all required materials are adequate and properly staged, tested, and maintained to respond to an internal or external flood within the plant's design basis. While no operability or significant concerns were identified, the licensee identified issues with: the use of sandbags as a flood barrier; with flooding analysis following a plant modification; and with the cleaning and inspecting of floor drains. The inspector also identified some additional minor observations regarding the condition of certain potential flood areas. The licensee initiated the appropriate CAP notifications for further assessment and resolution of the licensee and inspector identified issues, as listed in the Supplemental Information Attachment of this report. The inspector reviewed the associated CAP notifications, and determined the licensee's initial responses, including, their assessment and prioritization, were appropriate.

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.		
Licensee Action		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.
a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.		The licensee performed walkdowns and inspections of temporary and permanent plant equipment needed to mitigate fire and flood events to ensure that the failure/rupture of these or surrounding structures, systems, or components would not degrade the capability of the credited system to perform design basis functions. For portable equipment, the licensee's assessment included reviewing potential vulnerabilities related to associated procedures for equipment usage and equipment storage (to protect it from a seismic event). Regarding permanently installed fire protection equipment, the licensee's review evaluated its seismic classification and associated procedures used to operate the system for fighting fires. For flood protection equipment, the licensee inspected building/room sumps, if accessible, to assess sump capability in the event of a postulated flooding condition.
		Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.

		The inspector conducted multiple walkdowns, both independently and in conjunction with licensee personnel, of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during a seismic event. This equipment included, but was not limited to: • all major B.5.b contingency response equipment staged throughout the site; • portions of the installed fire protection and suppression equipment in various plant areas; • the installed diesel and electric fire pumps and their controls; and • watertight doors, roof hatches and floor plugs at the plant's intake structure and other exterior/building areas. The inspector reviewed the licensee's flood and fire mitigation procedures to assess usability. The results of the inspector's reviews aligned with the licensee's conclusions that there were a number of seismic vulnerabilities, as described below.
		Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.
		"Seismically qualified" is defined as those structures, systems, and components that have been formally qualified to function during and after a design basis earthquake. The licensee's reviews for this issue determined that non safety-related structures, systems, and components, in general, were not considered to be seismically qualified. This included building/room flood mitigation sump pumps and floor and equipment drain piping, as well as the vast majority of the fire protection system, including the installed fire pumps. Notwithstanding, those portions of the flood mitigation equipment and fire protection system components located in the reactor building are considered to be seismically "rugged" in that, the failure of these components will not adversely impact safety-related structures, systems, and components during or after a seismic event. The licensee also determined that fire fighting equipment staged to respond to B.5.b events was stored in buildings that were not seismically qualified, as a seismic event and B.5.b event have not previously been assumed to occur coincidentally. The licensee entered the following notable items into their CAP. For portable equipment, two of the three areas used to store B.5.b and fire protection equipment (onsite fire station and B.5.b storage area) were identified as being vulnerable (notification 20506357). Also, the licensee

		identified that the station does not have a procedure in place for portable equipment in response to a flood (notification 20505145). For permanent equipment, flood mitigation sump pumps and floor and equipment drain piping, and the vast majority of the fire protection system, are not seismically qualified and, accordingly, were characterized as being vulnerable (notification 20506211). The inspector verified the licensee meets the current licensing bases for B.5.b mitigating strategies, fire protection and flooding. The issues identified by the licensee are generic and beyond design bases. The inspector verified the licensee entered the issues into the CAP for evaluation.

Meetings

4OA6 Exit Meeting

The inspector presented the inspection results to Mr. J. Perry, Hope Creek Site Vice President, and other members of licensee management at the conclusion of the inspection on April 21, 2011. The inspector verified the inspection report does not contain proprietary information.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Perry, Hope Creek Site Vice President
L. Wagner, Hope Creek Plant Manager
J. Boyer, Mechanical Design Manager
J. Carlin, Fire Protection Superintendant
P. Duca, Senior Engineer
E. Krevics, Nulcear Equipment Operator
C. Lukacsy, Senior Reactor Operator
M. Resser, Fire Protection Program Engineer
M. Zimmerman, Mechanical Design Engineer

Nuclear Regulatory Commission

C. Cahill, Senior Reactor Analyst, NRC Region I

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.

CAP Notifications with an asterisk (*) indicate the document was written as a result of the inspection effort.

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

Procedures:

FP-AA-0003, Safe Set-up and Operation of the Emergency Skid Pump, Rev. 3
HC.OP-AM.TSC-0014, RCIC System Operation/Complete Loss of AC and DC Power, Rev. 7
HC.OP-AM.TSC-0019, Alternate Fuel Pool Makeup, Rev. 7
HC.OP-AM.TSC-0020, Spent Fuel Pool - External Makeup, Rev. 3
HC.OP-AM.TSC-0021, Spent Fuel Pool - External Spray, Rev. 4
HC.OP-AM.TSC-0024, Remote Operation of SRVs with RPV Injection, Rev. 6
HC.OP-AM.TSC-1000, Extensive Damage Mitigation Guideline Initial Plant Response, Rev. 0
HC.OP-AM.ZZ-0001(Z), Severe Accident Guidelines, Rev. 1
HC.OP-EO.ZZ-0318(Q), Containment Venting, Rev. 6
HC.OP-SO.KE-0001(Q), Refueling Platform and Fuel Grapple Operation, Rev. 44

SAG-1, Primary Containment Flooding, Rev. 1
SAG-2, Containment and Radioactivity Release Control, Rev. 1
SH.OP-AM.TSC-0001, Supplemental Severe Accident Management Guideline, Rev. 8
TSG-1, Technical Support Guidelines, Rev. 1

Completed Tests:

Test Plan, B.5.b Strategy 2.3.1, External Makeup to the Spent Fuel Pool, 6/16/08

Drawings:

M-10, Service Water, Sh. 1, Rev. 52
M-10, Service Water, Sh. 2, Rev. 40
M-49, Reactor Core Isolation Cooling, Rev. 29
M-50, RCIC Pump Turbine, Rev. 29
M-53, Fuel Pool Cooling and Torus Water Cleanup, Sh. 1, Rev. 34
M-53, Fuel Pool Cooling and Torus Water Cleanup, Sh. 2, Rev. 26
M-57, Containment Atmosphere Control, Sh. 1, Rev. 42
M-61, Liquid Radwaste Collection, Sh. 1, Rev. 24

Calculations/Evaluations:

E-0009, 125 Vdc System - Channels A & C, Sh. 1, Rev. 24
E-0009, 125 Vdc System - Channels B & D, Sh. 2, Rev. 28
E-0011, 250 Vdc System, Sh. 2, Rev. 18

Notifications:

20450318, B.5.b Program Ownership, 2/9/10
20500886, B.5.b Pump Degraded Fuel–Still Operable/Available, 3/18/11
20501298, HC.OP-AM.ZZ-0001 Procedure Enhancement, 3/19/11
20501379, SCBA Inventory Differs from Procedure List, 3/21/11
20501509, Storage Location Deltas vs. PM Data, 3/22/11
20501632, Two Items Not in Stock for SH.OP-AM.TSC-0001, 3/22/11
20501502, Satellite Phone Intermittent Connection, 3/25/11
20506152, HC.OP-AM.TSC-0014 Procedure Revision, 4/18/11
*20506254, 250 Vdc Breaker Spared, Active in SAP, 4/19/11
20506357, IER 11-1 B.5.b Equipment Non-Seismic Storage, 4/19/11
20506383, HC.OP-EO.ZZ-0318(Q) Procedure Revision, 4/19/11
*20506301, Guideline Deficiencies, 4/20/11

Other:

Health Report, System Health Report, 250 Vdc (Class 1E) HPCI/RCIC, 1st Qtr 2011
Health Report, System Health Report, RCIC, 1st Qtr 2011
IER L1 11-1, Response to Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, 4/15/11
LS-AA-126-1005, Self-Assessment on B.5.b for Fire Protection Inspection, 2/17/10

MOU between PSEG, Nuclear, LLC and the Cumberland County Office of Emergency Management, 9/10/10
MOU between Salem - Hope Creek Generating Stations and the State of Delaware Department of Safety and Homeland Security Delaware Emergency Management Agency, 4/23/10
MOU between Wilmington Fire Department and PSEG, Nuclear, LLC for Radiological Emergency Preparedness, 1/4/11
Responding to Terrorism (Presentation/Handout), Rev. 8
Severe Accident Guidelines (Presentation/Handout), Rev. 0
TQ-AA-210-3203, Severe Accident Management Guidelines/Emergency Preparedness (Training Guide), Rev. 3

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

Procedures:

FP-AA-0003, Safe Set-up and Operation of the Emergency Skid Pump, Rev. 3
HC.OP-AB.HVAC(Q), Heating, Ventilation, Air Conditioning, Rev. 5
HC.OP-AB.ZZ-0135(Q), SBO/Loss of Offsite Power/Diesel Generator Malfunction, Rev. 30
HC.OP-AM.TSC-0014, RCIC System Operation/Complete Loss of AC & DC Power, Rev. 7
HC.OP-AM.TSC-1000, Hope Creek Extensive Damage Mitigation Guideline Initial Plant Response, Rev. 0
HC.OP-AM.ZZ-0001(Z), Severe Accident Guidelines, Rev. 1
SAG-1, Primary Containment Flooding, Rev. 1
SAG-2, Containment and Radioactivity Release Control, Rev. 1
SH.OP-AM.TSC-0001, Supplemental Severe Accident Management Guideline, Rev. 8
TSG-1, Technical Support Guidelines, Rev. 1

Completed Tests:

HC.MD-ST.PK-0006(Q), 125 Vdc Station Batteries Performance Discharge Test and Associated Surveillance Testing (completed on 1B-D-411), 10/21/10
HC.MD-ST.PK-0006(Q), 125 Vdc Station Batteries Performance Discharge Test and Associated Surveillance Testing (completed on 1D-D-411), 10/23/10

Drawings:

M-10, Service Water, Sh. 1, Rev. 52
M-10, Service Water, Sh. 2, Rev. 40
M-49, Reactor Core Isolation Cooling, Rev. 29
M-50, RCIC Pump Turbine, Rev. 29
M-61, Liquid Radwaste Collection, Sh. 1, Rev. 24

Calculations/Evaluations:

E-0009, 125 Vdc System - Channels A & C, Sh. 1, Rev. 24
E-0009, 125 Vdc System - Channels B & D, Sh. 2, Rev. 28
E-0011, 250 Vdc System, Sh. 2, Rev. 18
E-1.4(Q), Class 1E 125 & 250 Vdc Systems; Short Circuit and Voltage Drop Studies, Rev. 6

E-4.1(Q), Class 1E 125 Vdc Station Battery and Charger Sizing, Rev. 16
E-45.001(Q), 250 Vdc Battery Capacity Calculation, Rev. 1

Notifications:

20364002, HC.OP-AB.ZZ-0135(Q) Procedure Enhancements, 4/3/08
20445493, HC.OP-AB.ZZ-0135(Q) Procedure Enhancements, 12/31/09
20482674, 1-BD-411 Degraded - Initiate Contingency Testing, 10/22/10
20483027, H1PK-1D-D-44 Battery Capacity Degraded, 10/25/10
*20505557, HC.OP-AB.ZZ-0135(Q) Procedure Revision, 4/14/11

Other:

IER L1 11-1, Response to Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, 4/15/11
NOSA-HPC-10-06, Engineering Programs and Station Blackout Audit, 8/24/10
System Health Report, 250 Vdc (Class 1E) HPCI/RCIC, 1st Qtr 2011
System Health Report, RCIC, 1st Qtr 2011

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

Procedures:

HC.OP-AB.MISC-1(Q), Acts of Nature, Rev. 18

Drawings:

A-0521-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 3
A-0522-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 3
A-0524-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 6
A-0531-0, Separation Criteria - Reactor Building Plan, Rev. 4
A-0532-0, Separation Criteria - Reactor Building Plan, Rev. 4
A-0533-0, Separation Criteria - Reactor Building Plan, Rev. 6
A-0541-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 6
A-0542-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 8
A-0543-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 13
A-0549-0, Separation Criteria - Service Water Intake Structure - Plan, Sh. 1, Rev. 0
M-10, Service Water, Sh. 1, Rev. 52
M-10, Service Water, Sh. 2, Rev. 40
M-22, Fire Water Permanent and Temporary Fire Pumphouse, Sh. 1, Rev. 29
M-49, Reactor Core Isolation Cooling, Rev. 29
OP-AA-108-111-1001, Severe Weather and Natural Disaster Guidelines, Rev. 6

Notifications:

20501492, Potential Procedure Implementation Issue – Valve Pit, 3/22/11
20501627, SAMG Qualification Frequency Inconsistency, 3/22/11

20503615, Need Floor Drain Inspection/Preventive Maintenance, 4/6/11
20503691, Room 5207 Floor Drain Clogged, 4/5/11
20503808, Sand Bag Requirements, 4/6/11
20504022, Unit 2 Doors in Calculation 19-0018, 4/6/11
20504032, 'A' Fire Water Storage Tank Sump Pump Inoperable, 4/6/11
20504165, SWIS Floor Drains Slow Drain, 4/8/11
20506205, Clean SWIS Floor for Inspection, 4/19/11
*20506206, SWIS Emergency Lighting Unit Needs Cover Fastened, 4/19/11
*20506208, Service Water Sump Pump Continually Running, 4/19/11

Other:

IER L1 11-1, Response to Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, 4/15/11

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:

FP-AA-0003, Safe Set-up and Operation of the Emergency Skid Pump, Rev. 3
HC.OP-AM.TSC-1000, Extensive Damage Mitigation Guideline Initial Plant Response, Rev. 0
HC.OP-AM.ZZ-0001(Z), Severe Accident Guidelines, Rev. 1
SAG-1, Primary Containment Flooding, Rev. 1
SAG-2, Containment and Radioactivity Release Control, Rev. 1
SH.OP-AM.TSC-0001, Supplemental Severe Accident Management Guideline, Rev. 8
TSG-1, Technical Support Guidelines, Rev. 1

Drawings:

A-0521-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 3
A-0522-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 3
A-0524-0, Separation Criteria - Aux Building Service/Radwaste Plan, Rev. 6
A-0531-0, Separation Criteria - Reactor Building Plan, Rev. 4
A-0532-0, Separation Criteria - Reactor Building Plan, Rev. 4
A-0533-0, Separation Criteria - Reactor Building Plan, Rev. 6
A-0541-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 6
A-0542-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 8
A-0543-0, Separation Criteria - Aux Building - Control/Diesel, Rev. 13
A-0549-0, Separation Criteria - Service Water Intake Structure - Plan, Sh. 1, Rev. 0
M-10, Service Water, Sh. 1, Rev. 52
M-10, Service Water, Sh. 2, Rev. 40
M-22, Fire Water Permanent and Temporary Fire Pumphouse, Sh. 1, Rev. 29
M-49, Reactor Core Isolation Cooling, Rev. 29

Notifications:

20503808, Sand Bag Requirements, 4/6/11
20505145, Flood Response Equipment, 4/13/11
20506211, Recommendation 4 Vulnerability, 4/19/11
20506357, B.5.b Equipment Non-Seismic Storage, 4/19/11

Other:

IER L1 11-1, Response to Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, 4/15/11

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
LOA	Letter of Agreement
MOU	Memorandum of Understanding
NRC	United States Nuclear Regulatory Commission
RCIC	Reactor Core Isolation Cooling
SAMG	Severe Accident Management Guidelines
SBO	Station Blackout
TI	Temporary Instruction