



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

May 13, 2011

Mr. J. R. Morris  
Site Vice President  
Duke Energy Carolinas, LLC  
Catawba Nuclear Station  
4800 Concord Road  
York, SC 29745-9635

**SUBJECT: CATAWBA NUCLEAR STATION - NRC TEMPORARY INSTRUCTION 2515/183  
INSPECTION REPORT 05000413/2011008, 05000414/2011008**

Dear Mr. Morris:

On April 29, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Catawba Nuclear Station using Temporary Instruction 2515/183, "Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The enclosed inspection report documents the inspection results which were discussed on May 10, 2011, with you and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Catawba 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.

DEC

2

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 document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Jonathan H. Bartley, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

Docket Nos.: 50-413, 50-414  
License Nos.: NPF-35, NPF-52

Enclosure: 05000413/2011008, 05000414/2011008  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

DEC

2

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ADAMS:  Yes      ACCESSION NUMBER: ML1110330185

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Letter to J. R. Morris from Jonathan H. Bartley dated May 13, 2011

SUBJECT: CATAWBA NUCLEAR STATION - NRC TEMPORARY INSTRUCTION 2515/183  
INSPECTION REPORT 05000413/2011008, 05000414/2011008

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RidsNrrPMCatawba Resource

**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-413, 50-414, 72-45

License Nos.: NPF-35, NPF-52

Report Nos.: 05000413/2011008, 05000414/2011008

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 and 2

Location: York, SC 29745

Dates: March 23, 2011, through April 29, 2011

Inspectors: A. Hutto, Senior Resident Inspector  
R. Cureton, Resident Inspector

Approved by: Jonathan H. Bartley, Chief  
Reactor Projects Branch 1  
Division of Reactor Projects

Enclosure

## **INSPECTION RESULTS**

IR 05000413/2011-008, 05000414/2011-008, 03/23/2011 – 04/29/2011; Catawba Nuclear Station, Units 1 and 2; Temporary Instruction 2515/183 – Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event

This report covers an announced Temporary Instruction (TI) inspection conducted by the resident inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

## **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 walk downs 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 follow-up 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.

Enclosure

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 (SAMGs) 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	<i>Describe what the licensee did to test or inspect equipment.</i>
<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>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The licensee tested the Hale pump and turbine driven auxiliary feed water (TDAFW) pump room portable sump pump for proper operation using the applicable operating procedure. All staged passive equipment, supplies and response gear in warehouses, and the extensive damage mitigation (EDM) trailer were inventoried and inspected.</p> <p><i>Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).</i></p> <p>The inspectors reviewed completed operating procedures used to test the Hale pump and TDAFW room portable sump pump to verify operational readiness of the system. The inspectors also walked down passive response equipment listed above and inventoried equipment to verify that the equipment was present, accurately labeled, and secured to prevent inadvertent use for non B.5.b. activities.</p> <p><i>Discuss general results including corrective actions by licensee.</i></p> <p>All equipment was operational and accounted for with no issues noted.</p>
Licensee Action	<i>Describe the licensee's actions to verify that procedures are in place and can be executed (e.g. walkdowns, demonstrations, tests, etc.)</i>
<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</p>	<p>The licensee performed walkdowns of the applicable abnormal, response, and operating procedures, EDM guidelines and Severe Accident Mitigation Guidelines (SAMGs) to validate that they could be successfully implemented. Portions of the operating procedures for operation of the Hale pump and the TDAFW room portable sump pump were performed to verify equipment functionality.</p>



<p>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><i>Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.</i></p> <p>The inspectors reviewed a sample of the above procedures to independently verify procedures were in place and current to allow execution of the B.5.b. and SAMG strategies. The inspectors conducted walkdowns to verify that equipment specified was appropriate and that interconnecting plant equipment was accessible and accurately labeled. The inspectors also walked down placement positions for spent fuel cooling equipment to ensure that the areas were unobstructed and accurately marked.</p> <p><i>Discuss general results including corrective actions by licensee.</i></p> <p>The procedures reviewed were determined to be executable and the equipment specified was appropriate. The inspectors identified an inconsistency related to placement of spray nozzles during implementation of spent fuel pool strategies. The EDM Strategy Diagrams specified placement of the nozzles which differed from AP/1/A/5500/041, Loss of Spent Fuel Cooling or Level. The licensee entered this issue into their corrective action program (CAP).</p>

Licensee Action	<i>Describe the licensee's actions and conclusions regarding training and qualifications of operators and support staff.</i>
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>The licensee identified all training specified for B.5.b. response and SAMG implementation for operations, fire brigade, security, maintenance, and emergency response organization personnel. The licensee verified that qualifications were current, and sufficient numbers of personnel in the above disciplines were qualified to effectively respond and implement the mitigation strategies.</p> <p><i>Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff</i></p> <p>The inspectors reviewed selected training documents and lesson plans to verify that the training was appropriate and to the sufficient level of detail to ensure effective implementation of the B.5.b. and SAMG strategies. The inspectors also reviewed qualification records to independently verify the number of qualified individuals identified in each organization.</p> <p><i>Discuss general results including corrective actions by licensee.</i></p> <p>No issues were identified or corrective actions taken with respect to B.5.b. and SAMG training.</p>
Licensee Action	<i>Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.</i>
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>Memorandums of Understanding (MOUs) had been established with various off-site agencies and organizations to provide fire fighting, emergency response and radiological response support. The licensee verified that written agreement letters were current and verified through telephone discussions each organization's ability to provide the support specified in the MOUs.</p> <p><i>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).</i></p>

<p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The inspectors independently reviewed MOUs established for Bethel Volunteer Fire Department, York County Emergency Management, the Department of Energy (DOE), and the National Nuclear Security Administration to verify that the agreements were in place and current and were adequate for meeting the licensee's mitigation strategy.</p> <p><i>Discuss general results including corrective actions by licensee.</i></p> <p>The MOUs for Bethel Volunteer Fire Department and the York Emergency Management were renewed and effective in January 2011 and February 2011 respectively with no changes necessary. The MOU with the National Nuclear Security Administration was renewed March 2011 and the MOU with DOE was last issued September 2009. The licensee contacted the DOE Radiation Emergency Assistance Center/Training Site to verify that the agreement was still in place and that personnel were available to provide support.</p>
<p>Licensee Action</p>	<p><i>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.</i></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>There were no issues identified by the licensee that had the significant potential to prevent the success of the existing mitigation strategies.</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 re-inspected. The inspection should include, but not be limited to, an assessment of any licensee actions to:

Licensee Action	<i>Describe the licensee's actions to verify the adequacy of equipment needed to mitigate an SBO event.</i>
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.	<p>The licensee verified that all equipment required to handle a SBO event was permanently installed plant equipment, which was regularly inspected and tested. The inspected equipment included all components in the standby shutdown facility (SSF), plant motor control centers which can be powered by the SSF diesel and the transfer bunkers in the plant switchgear rooms. The licensee also reviewed the Work Management System to verify there were no outstanding functional deficiencies.</p> <p><i>Describe inspector actions to verify equipment is available and useable.</i></p> <p>The inspectors performed independent walkdowns of the SSF and the switchgear rooms to verify that the material condition was adequate to ensure function of the equipment. The inspectors also observed a performance test of the SSF diesel following preventative maintenance and performance testing of the Unit 2 SSF turbine building sump pump.</p> <p><i>Discuss general results including corrective actions by licensee.</i></p> <p>No issues were identified or corrective actions taken with respect to the adequacy of equipment needed to mitigate an SBO event.</p>
Licensee Action	<i>Describe the licensee's actions to verify the capability to mitigate an SBO event.</i>
b. Demonstrate through walkdowns that procedures for response to an SBO are executable.	The licensee reviewed procedures for SBO response by completing walkdowns and tabletop reviews and document reviews to ensure the procedures were effective. The procedures reviewed included abnormal and emergency procedures for loss of AC power, the abnormal procedure for main generator and grid disturbances, and procedures for SSF operation.

	<i>Describe inspector actions to assess whether procedures were in place and could be used as intended.</i>
	The inspectors independently reviewed a sample of the above SBO procedures to verify they were in place, current, and executable. The inspectors also reviewed the training job performance measure for placing the SSF diesel in operation due to the time critical aspects of the action.
	<i>Discuss general results including corrective actions by licensee.</i>
	There were no issues identified by the licensee that had the potential to have a significant impact on the mitigation of an SBO event.

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	<i>Describe the licensee's actions to verify the capability to mitigate existing design basis flooding events.</i>
a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.	The licensee identified all design features credited for mitigation of internal and external flood events which included active plant equipment, portable equipment not credited but available for flood mitigation, and passive features which included doors, barriers, berms, penetration seals, yard drains, and sealed trench covers. All accessible passive features subject to aging management failure modes were walked down and portable equipment was tested. Active equipment that was routinely tested and inspected under existing Preventive Maintenances (PMs) was not included in the walkdowns.

	<p><i>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</i></p>
	<p>The inspectors conducted a review of the licensee's walkdown activities and the flood licensing and design basis documents to verify that flood design features were adequate to protect the plant from external and internal flooding. The inspectors independently walked down selected passive design features to verify licensee observations, reviewed selected flood mitigation procedures to verify they were executable, and observed testing of the Unit 2 SSF turbine building sump pump performance test.</p>
	<p><i>Discuss general results including corrective actions by licensee.</i></p> <p>The licensee's flood mitigation design features were verified to be present, periodically inspected and tested, and in acceptable condition. All design features such as berms, seals, barriers and yard drains were generally in good condition; however some exceptions were noted and entered into the licensee's CAP.</p> <ul style="list-style-type: none"> <li>• Foam penetration seals in the auxiliary feedwater pump rooms and the diesel room roofs were not coated with sealant per the licensee's design specification. The licensee wrote Work Orders to apply sealant to the foam.</li> <li>• The auxiliary feedwater room penetration seals were not included in the licensee's internal flooding design basis document and were inspected as part of the existing seal inspection PM. Additional inspection PMs were created for inspection of conduit manhole flood seals and the diesel generator roof hatch covers.</li> </ul>
	<ul style="list-style-type: none"> <li>• The licensee noted that two limited areas of the cooling tower yard berms designed to direct precipitation runoff away from the power block were degraded and required repair. Additionally, two jersey barriers were identified near the low pressure service water intake structure that could potentially affect runoff and were removed. The inspectors noted several cooling tower yard catch basins were partially blocked by rocks, silt and vegetation growth. Additional minor issues were identified relating to degraded trench cover sealant and flood barrier/door labeling.</li> </ul>

<p>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>	
<p>Licensee Action</p>	<p><i>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.</i></p>
<p>a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee performed walkdowns of both permanent (installed) and portable fire and flood mitigation features. As part of the assessment, the licensee identified where additional mitigation strategies may be developed to address seismic vulnerabilities.</p>
	<p><i>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</i></p>
	<p>The inspectors reviewed the list of fire and flood mitigation equipment and features included in the licensee’s assessment to verify the scope of the assessment was comprehensive and the reviews sufficiently thorough. The inspectors selected a sample of the licensee’s equipment and performed independent walkdowns to verify the licensee’s conclusions. The inspectors determined that the procedures were in place and could be used as intended.</p>
	<p><i>Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.</i></p>
	<p>In general, the licensee identified a generic fire mitigation equipment issue as the majority of equipment was not seismically qualified for the design basis earthquake (DBE). Examples included interior and exterior fire protection systems. Portions of these systems were housed in non-seismic structures including the three motor driven fire pumps. The diesel generator CO2 systems were non-seismic which were also housed in a non-seismic structure. The Hale pump, pump structure, and permanently staged suction and discharge piping were not seismically qualified. B.5.b. and fire brigade turnout gear in various locations were located in non-seismic storage locations and containers. Additional specific</p>

	<p>issues were identified and corrected. Additional mitigation strategies to address the generic fire mitigation issue were to be determined by the licensee in accordance with industry guidance.</p> <p>Similarly, the licensee identified a generic flood mitigation equipment/feature issue as the majority of equipment and passive features were not seismically qualified for the DBE. External flood mitigation features including the yard drainage system catch basins, sheet outfall areas, external flood doors and seals were non seismic; however, the bounding flood scenario was the probable maximum precipitation event and was independent of a seismic event. Water height from external flooding does not reach yard elevation. Internal flooding issues identified included various instrumentation relied on to detect internal flood were non-seismically qualified, the service building and turbine building flood walls were located in non-seismic structures, and the auxiliary feedwater pump room floor drain sump pumps and the SSF submersible pumps were non-seismic.</p>
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Meetings (including Exit Meeting)

Exit Meeting

On May 10, 2011, the inspectors presented the inspection results to Mr. Jim Morris, Catawba Vice President, and other members of licensee management. 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 Personnel

T. Arlow, Emergency Planning Manager  
W. Byers, Security Manager  
J. Caldwell, Work Control Manager  
D. Cantrell, Chemistry Manager  
J. Ferguson, Mechanical, Civil Engineering Manager  
T. Hamilton, Engineering Manager  
G. Hamrick, Station Manager  
R. Hart, Regulatory Compliance Manager  
T. Jenkins, Superintendent of Maintenance  
J. Morris, Catawba Site Vice President  
K. Phillips, Training Manager  
S. Putnam, Safety Assurance Manager  
M. Sawicki, Regulatory Compliance Engineer  
R. Simril, Operations Superintendent  
J. Smith, Radiation Protection Manager  
W. Suslick, Modifications Engineering Manager

### 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

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
CNS	Extensive Damage Mitigation Guidelines	Rev. 04
PT/0/A/4400/002F	EDM Equipment Inspection	Rev. 02
OP/0/B/6400/002D	Hale Portable Pump Operation	Rev. 02
OP/0/B/6400/002E	Portable CAPT Sump Pump Operation	Rev. 02
PT/0/B/4600/032	Fire Brigade Equipment Inspection/Inventory	Rev. 07
AP/1(2)/A/5500/025	Damaged Spent Fuel	Rev. 16
AP/1(2)/A/5500-041	Loss of Spent Fuel Cooling or Level	Rev. 04

AP/0/A/5500/046	Hostile Aircraft Activity	Rev. 03
AP/0/A/5500/048	Extensive Damage Mitigation	Rev. 06
EM/0/A/5200/001	Troubleshooting Cause for Improper Operation of VC/YC System	Rev. 04
IP/1(2)/A/5200/003	Troubleshooting Cause for a Diesel Generator Failing to Start	Rev. 03
EM/1/A/5200/003	Fire Damage Control Procedure	Rev. 19,20
OP/0/B/6100/013	Standby Shutdown Facility	Rev. 50
RP/0/A/5000/007	Natural Disaster and Earthquake	Rev. 031
CN-OPS-N0171	Location of B.5.b Equipment (NLO ETQS qualification)	Rev. 01
OP-CN-CP-EDM PRAC	Extensive Damage Mitigation Guidelines Practical Exercise (lesson plan)	Rev. 00
IN TOUCH	Extensive Damage Mitigation Support Team Expectations – site refresher	3/30/2010
OP/CN-CP-EDM	Extensive Damage Mitigation Lesson Plan	Rev. 4
CN-EP-EA49-N	Revised Design Basis Threat Response (B.5.b.)	Rev. 01
1465.00-00-0019	DBD for Extensive Damage Mitigation	Rev. 00
EG/0/A/CSAM/SAG3	Inject into the NC System	Rev. 02
EG/0/A/CSAM/SAG4	Inject into Containment	Rev. 02
EG/0/A/CSAM/SAG6	Control Containment Conditions	Rev. 02
EG/0/A/CSAM/SAG7	Reduce Containment Hydrogen	Rev. 02
EG/1/A/CSAM/SACRG1	Severe Accident Control Room Guideline – Initial Response	Rev. 05
EG/1/A/CSAM/SACRG2	Severe Accident Control Room Guideline for Transients after TSC on Functional	Rev. 02
Emergency Plan Appendix 5	Support agreements in-place with local fire departments, local law enforcement and offsite support agencies: Bethel Volunteer Fire Department, York County Emergency Management, Department of Energy, National Nuclear Security Administration	2009-2011
PIP C-11-2223	Missing connection point in drawing, CNEE-0131-06.05	
PIP C-11-2230	Label discrepancy in drawing, CNEE-0131-06.06	
PIP C-11-2232	Drawing nomenclature discrepancy in CNLT-1752-01.07	
PIP C-11-2240	Procedure enhancements to fire damage control procedures	
PIP C-11-2251	Enhancements to Severe Action Mitigation Strategy and Resource Manual	
PIP C-11-2352	Evaluate the need to procure a second Hale pump and portable sump pump	
PIP C-11-3346	Inconsistent guidance on spent fuel pool emergency cooling nozzle placement	

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

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
EP/1(2)/A/5000/ECA 0.0	Loss of All AC Power	Rev. 39
AP/1(2)/A/5500/007	Loss of Normal Power	Rev. 61
AP/1(2)/A/5500/037	Main Generator and Grid Disturbances	Rev. 0
OP/0/B/6100/013	Standby Shutdown Facility Operations	Rev. 50
OP/1/A/6100/020	Operational Guidelines for Achieving Cold Shutdown Following a Fire in the Plant	Rev. 30
OP/1/A/6100/004	Shutdown Outside the Control Room from Hot Standby to Cold Shutdown	Rev. 53
EM/1/A/5200/004	Install Jumper to Auto Start Diesel Generator 1A or 1B	Rev. 04
1465.00-00-0018	DBD for the Station Blackout Rule	Rev. 04
OP-CN-CP-AD-003	Job Performance Measure/Place SSF Diesel in Operation	Rev. 23
CNEE-0120-01.01	Elementary Diagram Diesel Engine Control Panel 1A & 1B (Typical Part 1) Engine Panel Electrical Schematic	Rev. 11

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

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
AP/0/A/5500/030	Plant Flooding	Rev. 10
PT/0/A/4450/018	RC Submersible Pump Test	Rev. 08
1465.00-00-0011	DBD for the Flooding from External Sources	Rev. 03
1465.00-00-0020	DBD for the Flooding from Internal Sources	Rev. 00
CN-1022-9	Grading Sections and Details, Sheet 3	Rev. 05
CN-1220-51	Diesel Generator Area Units 1 & 2	Rev. 09
CN-1493-ZD.00-007	Diesel Generator Engine Crankcase Vacuum System	Rev. 01

## 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

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
1465.00-00-0011	DBD for the Flooding from External Sources	Rev. 03
1465.00-00-0020	DBD for the Flooding from Internal Sources	Rev. 00
1465.00-00-0019	DBD for Extensive Damage Mitigation	Rev. 00
1465.00-00-0006	DBD for Plant Fire Protection	Rev. 19

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DBE	Design Basis Earthquake
DOE	Department of Energy
EDM	Extensive Damage Mitigation
MOU	Memorandum of Understanding
NRC	United States Nuclear Regulatory Commission
PIP	Problem Investigation Program
PM	Preventive Maintenance
SAMG	Severe Accident Mitigation Guidelines
SBO	Station Blackout
SSF	Standby Shutdown Facility
TDAFW	turbine driven auxiliary feed water
TI	Temporary Instruction