



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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May 13, 2011

Mr. Timothy J. O'Connor  
Site Vice President  
Monticello Nuclear Generating Plant  
Northern States Power Company, Minnesota  
2807 West County Road 75  
Monticello, MN 55362-9637

**SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT – NRC TEMPORARY  
INSTRUCTION 2515/183 INSPECTION REPORT 05000263/2011009**

Dear Mr. O'Connor:

On April 29, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Monticello Nuclear Generating Plant, 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 26, 2011, with Mr. John Grubb and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Monticello Nuclear Generating Plant 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 the next quarterly report. You are not required to respond to this letter.

T. O'Connor

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Sincerely,

***/RA/***

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Docket No. 50-263  
License No. DPR-22

Enclosure: Inspection Report 05000263/2011009

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263  
License No: DRP-22

Report No: 05000263/2011009

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, Minnesota

Dates: March 23 through April 29, 2011

Inspector: S. Thomas, Senior Resident Inspector

Approved by: Kenneth Riemer  
Branch 2  
Division of Reactor Projects

Enclosure

## **SUMMARY OF FINDINGS**

IR 05000263/2011009, 03/23/2011 – 04/29/2011; Monticello Nuclear Generating Plant  
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 Resident and Region III inspectors. 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 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 the next quarterly 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 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:

<b>Licensee Action</b>	<b>Describe what the licensee did to test or inspect equipment.</b>
<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 performed walkdowns with qualified operators and discussions took place regarding the use of the procedures and the desired result, as well as the required equipment. Equipment inventories were completed using approved site procedures with all gaps noted in the corrective action process. Monticello has the capability to mitigate conditions that result from beyond basis events, typically bounded by security threats, committed to as part of B.5.b licensing process and using severe accident management guidelines. The flooding events require materials not currently onsite, but the procedure is written assuming the flooding can be predicted allowing for the material to be obtained and barriers constructed.</p> <p>The following procedures were performed to verify equipment was available and functional:</p> <ul style="list-style-type: none"> <li>• 1488; Emergency Operating Procedures (EOP)/Abnormal Operating Procedures (AOP) Equipment Inventory;</li> <li>• 1224; Fire Brigade Equipment Inventory;</li> <li>• OSP-FIR-0582; Portable Diesel Fire Pump Testing Procedure;</li> <li>• ESP-125-0583; 125V DC Portable Battery Cart Testing Procedure; and</li> <li>• IMP-1023; Fluke Model 87V EX Digital Multimeter Performance Test.</li> </ul> <p>Procedure 1224 requires that the operator perform a condition inspection using criteria outlined in the procedure. Active equipment, such as the portable diesel fire pump and 125 VDC battery cart, were tested using approved site procedures. The 1488 procedure does not specifically require that an inspection be performed during the equipment inventory. Nonetheless, the inventory done for this activity did assess the condition and readiness of the equipment. All Emergency Operating Procedure (EOP) equipment was validated to be stored in the proper location.</p>

	<p><b>Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).</b></p>
	<p>The inspectors assessed the licensee’s capabilities by conducting a review of the licensee’s walkdown activities. In addition, the inspectors independently walked down and inspected a sampling of the major B.5.b contingency equipment staged throughout the plant.</p>
	<p><b>Discuss general results including corrective actions by licensee.</b></p>
	<p>During the EOP inventory, equipment was found to be stored in areas that could potentially be susceptible to damage during a seismic event. While performing the fire brigade inventory (1224), some equipment was not in the proper storage location, and some equipment called out in the B.5.b procedures was not on the inventory as expected. Corrective actions were documented to correct these issues. The missing equipment from the B.5.b procedures is readily available at numerous locations onsite; however, a dedicated supply was not in the dedicated B.5.b storage location. Specific corrective action program (CAP) documents applicable to this section are listed in Section 3.01(e). No issues of significance were identified by the inspectors.</p>

<b>Licensee Action</b>	<p><b>Describe the licensee’s actions to verify that procedures are in place and can be executed (e.g., walkdowns, demonstrations, tests, etc.).</b></p>
<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 A.7 – Severe Accident Mitigation Guidelines (SAMG) procedures are in-place and executable. This was demonstrated by a tabletop exercise using an Accident Management Team (AMT) stationed in the Technical Support Center (TSC) with an operator in the control room simulator to demonstrate the communication link. The tabletop exercise challenged all legs of the SAMGs. Activities to be performed in the plant were done by operations personnel in a walk-through format with an evaluator observing their performance. The AMT was able to complete priority actions that would have ensured event mitigation. The SAMGs refer to multiple EOP Support Procedures (C.5-3XXX) that are part of the regular training cycle for the Operations crews. All actions performed by Operations during SAMG situations are in the EOP Support Procedures. Several of the A.8 (Extensive Damage Mitigation Strategy (EDMG) Overview) procedures that implement the B.5.b program requirements are in-place and validated as executable via walkdowns.</p>

	<p><b>Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.</b></p>
	<p>The inspectors assessed the licensee’s capabilities by conducting a review of the licensee’s walkdown activities. In addition, the inspectors selected several sections of a sample of the procedures walked down by the licensee and walked them down to independently verify the licensee’s conclusions. The inspectors did not observe the performance of the tabletop exercise, but did review the exercise materials.</p>
	<p><b>Discuss general results including corrective actions by licensee.</b></p>
	<p>No gaps were identified that would impair the station’s ability to utilize these mitigation strategies. Several enhancement opportunities were documented and entered in the licensee’s corrective action process. Specific CAP documents applicable to this section are listed in Section 3.01(e).</p> <p>No issues of significance were identified by the inspectors.</p>

<b>Licensee Action</b>	<p><b>Describe the licensee’s actions and conclusions regarding training and qualifications of operators and support staff.</b></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 a review of their Emergency Plan (EP) Training Program, as well as a qualification search for the number of individuals qualified in each position, via the Learning Management System (LMS) tool. The Training Department verified that all positions in the six ERO duty teams were staffed by individuals qualified in their associated jobs.</p>
	<p><b>Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff</b></p>
	<p>The inspectors assessed the licensee’s training and qualification activities by conducting a review of training and qualification materials and records related to the current Emergency Response Organization (ERO) qualifications of the assigned site staff.</p>

	<p><b>Discuss general results including corrective actions by licensee.</b></p> <p>The training requirements, qualifications, and associated records needed to verify that the site's ERO could be staffed and function during an event, were reviewed by the licensee. This recommendation is being met in accordance with site procedures and regulatory commitments. No deficiencies were noted when applicable training and qualification documents were reviewed. Specific CAP documents applicable to this section are listed in Section 3.01(e).</p> <p>No issues of significance were identified by the inspectors.</p>
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<b>Licensee Action</b>	<b>Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.</b>
<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 performed a review of B.5.b and SAMG procedures to determine what equipment is required from offsite vendors to successfully implement their procedures. The review was also expanded to include flooding and SBO concerns to consolidate the scope and content of the agreements/contracts. The licensee conducted interviews of site program owners to determine what contracts were in place and what services, equipment, or materials offsite entities had agreed to provide.</p> <p><b>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).</b></p> <p>The inspectors assessed the licensee's capabilities by conducting an independent review of the licensee's letters of agreement, memorandums of understanding, and contracts for goods and services counted on to successfully implement their SAMGs and EDMGs. The inspectors verified that each was current and whether or not each was adequate for meeting the licensee's mitigation strategy.</p>



**Discuss general results including corrective actions by licensee.**

Gaps were identified during the licensee's review of offsite equipment that might be necessary to effectively implement their mitigating strategies. Corrective action documents have been initiated for the site to determine what equipment should be available onsite and what agreements are adequate for equipment that comes from offsite sources. At this time, the site has not made formal agreements to provide all equipment required from offsite entities. The licensee has determined that the agreements that are currently in place are sufficient to provide resources that the site might request in the event to allow for effective utilization of their mitigation strategies. Further review is required to determine what equipment should be purchased for onsite storage and what formal agreements should be made with offsite suppliers. Specific CAP documents applicable to this section are listed in Section 3.01(e).

No issues of significance were identified by the inspectors.

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.
<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 following entries into the licensee's CAP were made to address issues identified during the evaluation of IER 11-1; Recommendation 1:</p> <ul style="list-style-type: none"> <li>• CAP 1276717; IER 11-1 – Emergency Planning Enhancements</li> <li>• CAP 1276710; IER 11-1 – SAMG/EOP Procedure Enhancements</li> <li>• CAP 1276567; IER 11-1 – SAMG/EDMG Training Improvements</li> <li>• CAP 1280884; IER 11-1 – Improve Training for SAMGs</li> <li>• CAP 1276416; IER 11-1 – During the 1224 Fire Equipment Inventory, Numerous Deficiencies were Found</li> <li>• CAP 1276377; Abnormal Charger Indication during ESP-125-0583</li> <li>• CAP 1276324; IER 11-1 - Vulnerabilities (Several Seismic Type Vulnerabilities have been Identified)</li> <li>• CAP 1276101; O2 Storage Rack not Anchored to the Wall</li> <li>• CAP 1276098; IER 11-1 – Shelves in Alt Fire Brigade Room not Anchored to the Wall</li> <li>• CAP 1276096; IER 11-1 – RCIC Tachometer Found Out of Calibration</li> <li>• CAP 1276088; Materials Staged Limiting Access to EOP Equipment</li> <li>• CAP 1276087; IER 11-1 – Training Improvement on Use of SAMG/EDMG in Emergency Plan</li> <li>• CAP 1276692; Not All Equipment Called for Use in A.8 Procedures (EDMGs) was Listed on the Fire Brigade Inventory</li> <li>• CAP 1276414; N2 Tank Used to Support C.5-1301 (Alternate Rod Insertion) could be Damaged in a Seismic Event</li> <li>• CAP 1278817; EOP Equipment Inventory does not Require Inspection of the Equipment</li> <li>• CAP 1276707; Offsite Support Equipment for A.8 not Assured Available</li> <li>• CAP 1276715; Offsite Support Equipment for A.6 Procedure Not Assured Available</li> <li>• CAP 1280539; Equipment Needed to Perform EDMGs not in Specified Location</li> <li>• CAP 1280633; IER 11-1 – Can B.5.b/SAMG Equipment do Simultaneous Tasks?</li> </ul> <p>The inspectors reviewed each condition report for potential impact to the licensee's mitigation strategies. No significant impacts were identified.</p>

<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:</p>	
<p><b>Licensee Action</b></p>	<p><b>Describe the licensee’s actions to verify the adequacy of equipment needed to mitigate an SBO event.</b></p>
<p>a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>Abnormal Operating Procedure C.4-B.09.02A (Station Blackout) is the governing procedure for the plant response to a SBO. This procedure implements the few specific requirements for mitigating the design basis SBO. This procedure also has steps which are not required for design basis mitigation, but serve to increase the coping duration beyond the required four hour period. The MNGP staff performed C.4-B.09.02A using the control room simulator combined with a plant walkdown to assure that all required materials and procedures are adequate, properly staged, and executable to support the design basis SBO mitigation.</p>
	<p><b>Describe inspector actions to verify equipment is available and useable.</b></p>
	<p>The inspectors assessed the licensee’s capability to mitigate SBO conditions by conducting a review of the licensee’s walkdown activities. In addition, the inspectors 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.</p>
	<p><b>Discuss general results including corrective actions by licensee.</b></p>
	<p>Operators verified that the steps in this procedure that are required to meet the four hour coping duration are executable.</p> <p>No issues of significance were identified by the inspectors.</p>

Licensee Action	Describe the licensee's actions to verify the capability to mitigate an SBO event.
<p>b. Demonstrate through walkdowns that procedures for response to an SBO are executable.</p>	<p>Abnormal Operating Procedure C.4-B.09.02A (Station Blackout) is the governing procedure for the plant response to a SBO. This procedure implements the few specific requirements for mitigating the design basis SBO. This procedure also has steps which are not required for design basis mitigation, but serve to increase the coping duration beyond the required four hour period. The MNGP staff performed C.4-B.09.02A using the control room simulator combined with a plant walkdown to assure that all required materials and procedures are adequate, properly staged, and executable to support the design basis SBO mitigation.</p>
	<p><b>Describe inspector actions to assess whether procedures were in place and could be used as intended.</b></p>
	<p>The inspectors assessed the licensee's capabilities by conducting a review of the licensee's walkdown activities. In addition, the inspectors selected several sections of a sample of the procedures walked down by the licensee and walked those down to independently verify the licensee's conclusions.</p>
	<p><b>Discuss general results including corrective actions by licensee.</b></p> <p>Operation staff verified that the steps in this procedure that are required to meet the four hour coping duration are executable. Items that were identified by the licensee and entered into their CAP to address issues identified during the evaluation of IER 11-1, Recommendation 2, are listed in the List of Documents Reviewed at the end of this report.</p> <p>No issues of significance were identified by the inspectors.</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.

<b>Licensee Action</b>	<b>Describe the licensee’s actions to verify the capability to mitigate existing design basis flooding events.</b>
<p>a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The structures, systems, and components (SSCs) credited in MNGP’s External Flooding, Internal Flooding, and High Energy Line Break (HELB) programs were cataloged. This catalogue list included all SSCs which control the movement of water between adjacent volumes and the boundary penetrations between these adjacent volumes. Only the penetrations at or below maximum probable water levels based on station flooding calculations were evaluated.</p> <p>Utilizing this list, field walkdowns were conducted to assess the condition of the flood control SSCs. For external flooding, a walkdown was performed to ensure pathways were clear and capable of performing their function (i.e., passage of water along the path assumed in the applicable calculation). The acceptability of the flood barriers and relief paths was documented on the list of the flood control SSCs.</p> <p><b>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</b></p> <p>The inspectors assessed the licensee’s capabilities to mitigate flooding by conducting a review of the licensee’s walkdown activities. Flood mitigation procedures were reviewed to verify usability. In addition, the inspectors conducted independent walkdowns of selected flood mitigation equipment to independently assess the licensee’s flood mitigation capabilities.</p>

	<p><b>Discuss general results including corrective actions by licensee.</b></p> <p>Of the 377 components to be inspected, 39 were not accessible. Monticello Nuclear Generating Plant is currently in a Refueling Outage (RFO). Currently during the refueling outage, work at the plant has required partial disassembly of credited barriers, created temporary openings through boundaries, restricted access to protected equipment, and obstructed viewing of some equipment by scaffold or other non-permanent tools and equipment staged for work. These items will be tracked as follow-on actions, with walkdowns to be conducted when station conditions permit. A walkdown was performed of the accessible plant areas having flood barriers and required relief paths. Walkdown notes documented the acceptability of every SSC and the cases where SSCs were inaccessible and could not be inspected. Items that were identified by the licensee and entered into their CAP to address issues identified during the evaluation of IER 11-1, Recommendation 3, are listed in the List of Documents Reviewed at the end of this report.</p> <p>No issues of significance were identified by the inspectors.</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.

<b>Licensee Action</b>	<b>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.</b>
<p>a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>Important SSCs for fire protection were determined as equipment that can mitigate post safe-shutdown earthquake (SSE) fires in the following four categories:</p> <ul style="list-style-type: none"> <li>• permanently installed fire protection systems;</li> <li>• permanently installed, seismically-qualified non-fire protection systems that could be used to fight fires;</li> <li>• portable equipment that could be used to fight fires after an SSE; and</li> <li>• offsite responders.</li> </ul> <p>These categories of equipment, individually or in aggregate, must be capable of fighting fires in the critical portions of the station. Examples of critical portions of the station could include:</p> <ul style="list-style-type: none"> <li>• control room and support structures;</li> <li>• electrical switchgear rooms;</li> <li>• turbine building;</li> <li>• reactor building;</li> <li>• diesel generator buildings;</li> <li>• main and auxiliary transformers; and</li> <li>• intake structures.</li> </ul> <p>Piping and instrumentation diagrams were used to define the boundaries of the fire protection system within the scope of this recommendation, and the flood protection SSCs for this recommendation are the same as those used for Recommendation 3.</p>

	<p>The licensee enlisted a contractor, who specializes in the evaluation of the impacts of seismic activity on structures, to perform walkdowns of specific areas onsite. Working from the lists of fire protection and flood protection SSCs provided by the licensee, this contractor performed a walkdown and examined all of the flood and fire mitigation SSCs which were identified, and assessed the seismic vulnerability of these SSCs as high, medium, or low. A low vulnerability meant that the SSC would clearly withstand the SSE for the Monticello site. A medium vulnerability meant it was highly likely that the component would be shown through analysis to be able to survive the SSE for Monticello. A high vulnerability meant that it was quite possible that an SSE would disable the component.</p>
	<p><b>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</b></p>
	<p>The inspectors conducted multiple walkdowns of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during or subsequent to a seismic event. Specific equipment reviewed as part of this assessment included a sampling of the major B.5.b contingency response equipment, installed fire protection and suppression equipment, installed diesel and electric fire pumps, and watertight hatches and floor plugs. In addition to the walkdowns, the inspectors reviewed a report prepared by the contractor which documented the results of how site flood and fire mitigation equipment would be impacted by an SSE.</p>
	<p><b>Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.</b></p>
	<p>For fire protection, the overall conclusion was that the system would likely suffer key failures in an SSE and could not be relied upon to be available after an earthquake. The mitigation strategy is to use B.5.b equipment to fight any fires that would occur following an earthquake. The B.5.b equipment is stored in a warehouse that is not designed as a Seismic Class I structure, but was examined by seismic experts and was it was concluded that it would remain intact following an SSE. Items that were identified by the licensee and entered into their CAP to address issues identified during the evaluation of IER 11-1, Recommendation 4, are listed in the List of Documents Reviewed at the end of this report. No issues of significance were identified by the inspectors.</p>



## Meetings

### .1 Exit Meeting

The inspectors presented the inspection results to Mr. Grubb, and other members of licensee management, at the conclusion of the inspection on April 26, 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

T. O'Connor, Site Vice President  
J. Grubb, Plant Manager  
W. Paulhardt, Assistant Plant Manager  
N. Haskell, Site Engineering Director  
K. Jepson, Business Support Manager  
S. Radebaugh, Maintenance Manager  
M. Holmes, Radiation Protection/Chemistry Manager  
S. Leonard, Regulatory Affairs Manager  
J. Earl, Emergency Preparedness Manager

#### Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

## 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 or 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>
1488	Cycle Inventory of Equipment for EOP C.5-3XXX and AOP C.4 Series Procedures	Revision 1*
1244	Fire Brigade Equipment Inventory	Revision 27
OSP-FIR-0582	Portable Diesel Fire Pump Testing Procedure	Revision 2
ESP-125-0583	125V DC Portable Battery Cart Testing Procedure	Revision 2
IMP-1023	Fluke Model 87V EX Digital Multimeter Performance Test	Revision 3
A.8 Procedure Series	Extensive Damage Mitigation Strategies (various)	
A.7-SAMG-01	Primary Containment Flooding	Revision 5
A.7-SAMG-02	RPV, Containment, and Radioactivity Release Control	Revision 3
A.7-SAMG-03	Combustible Gas Control	Revision 1
	XE Nuclear LMS Qualification Status Verification for Turbine Building Operator; Reactor Building Operator; Reactor Operator; Senior Reactor Operator; Operations Shift Manager; Emergency Director; Support Group Leader; Security Group Leader/Emergency Operation Facility (EOF) Security Coordinator; Engineering Group Leader; Engineering Group; Core Thermal Hydraulics; Nuclear Engineer; Maintenance Group Leader; SM/CRS/Operations Group Leader; Radiological Emergency Coordinator; Monitoring Section Leader; Shift Emergency Communicator; Midas Dose Projection; Emergency Manager/Recovery Manager; Radiation Protection Support Supervisor; EOF Coordinator; Technical Support Supervisor; Field Team Coordinator; OSC Coordinator; Chemists; Electrical; I&C; Mechanical; SAMG Decision Makers; and SAMG Evaluators.	04/03/2011

### 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>
C.4-B.0902.A	Station Blackout	Revision 36
C.4-B.0902.B	Loss of Normal Offsite Power	Revision 12
E.4-01	Backfeed Bus 13 from 13 DG	Revision 3
8153	Powering Division II 250 VDC Battery Chargers from No. 13 Diesel, Security Diesel or Portable Generator	Revision 3
CAP 1276138-01	Initiate PCR for 8153 Procedure Enhancements	

CAP 1276138-03	Verify Incorporation of the CAPX 2020 Subyard Modifications into E.5 Procedure	
CAP 1276138-04	Enhancement to Attach Relay Boots to the C.4 Station Blackout Procedure	
CAP 1279730	Actions to Enhance Extended SBO Coping Abilities	
8900	Operation of RCIC without Electric Power	Revision 2
E.5	System Electrical Blackout	Revision 12
CA-05-136	SBO Coping	Revision 15

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>
A.6	Acts of Nature	Revision 37
CA-07-021	Internal Flooding – Reactor Building, Turbine Building and Intake Structure Water Height	Revision 0
CA-07-029	RX and Turbine Building and Intake Structure Water Height for Internal Flooding	Revision 0
Form 3336	HELB Barrier Start-Up Checklist	Revision 24
CAP 1277413	Strategies for External Flood might be Inadequate	
CAP 1276767	A.6; Rev 37 – TSC not Included in Earth Ring Levee	
CAP 1277785	A.6; Ext Flooding Procedure Lacks In-Place Barrier Walkdowns	
CAP 1276143	IER 1-11-1; Flood Plan does not ID Impact on Radioactive Material	
CAP 1279439	Security Training Facilities not Included in Trigger Actions of A.6	
CAP 1279440	New Security Building not Inside Earth Ring Levee	
CAP 1279342	Four SSCs not Modeled in Flood Analysis	
CAP 1279347	SSC Inconsistently Labeled in Plant	
CAP 1279342	SSC Needs Verification with Flood Analysis Model, PAB-923 Battery Room	
CAP 1276715	21 SSCs require Procurement per A.6, with Availability/Quantity not Assured	
CAP 1279348	SSC Removed for RFO25 Work	
CAP 1279350	Four Penetrations with Inadequate Seals	
CAP 1279352	Two SSCs could be Compromised by DBE	
CAP 1279356	SSC Located Onsite has Accessibility/Warehousing Concern	
CAP 1279358	Twenty-Two Doors Lack Flooding Labels	
CAP 1279361	Forty SSC/Areas could not be Surveyed due to Inaccessibility/Safety/Contaminated Area Concerns	

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>
B.08.05-05	Fire Protection – System Operation	Revision 49
Contractor Report 011C3956-RPT- 001	Assessment of the Seismic Vulnerability of Fire Protection and Flood Mitigation Systems at the Monticello Nuclear Power Plant	Revision A
CAP 1278169	IER 1-11-1; Fire System Seismic Vulnerabilities	
CAP 1278243	Fire System Seismic Vulnerabilities, Hydrants	
CAP 1276324	Several Seismic Type Vulnerabilities have been Identified (B.5.b Equipment, Trucks, Pump, Fuel, Hoses Stored in Non-Seismic Building)	
CAP 1278594	Fires System Seismic Vulnerabilities, Transformers	
CAP 1280332	Receiving Warehouse Possible Seismic Damage (Inhibits Ability to get to Sandbags and Other Equipment)	
CAP 1280335	Perform Seismic Walkdown of Equipment that could not be Accessed during Initial Walkdown for IER 11-1	
CAP 1280337	Door 18 could be Compromised by Seismic Event	
CAP 1277358	IER 1-11; Vulnerability, Diesel Fire Pump	

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AOP	Abnormal Operating Procedure
AMT	Accident Management Team
CAP	Corrective Action Program
CFR	Code of Federal Regulations
EDMG	Extensive Damage Mitigating Strategies
EOF	Emergency Operating Facility
EOP	Emergency Operating Procedure
ERO	Emergency Response Organization
HELB	High Energy Line Break
IP	Inspection Procedure
LMS	Learning Management System
MNGP	Monticello Nuclear Generating Plant
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
RFO	Refueling Outage
SAMG	Severe Accident Management Guideline
SBO	Station Blackout
SSC	Structure, System, and Component
SSE	Safe-Shutdown Earthquake
TSC	Technical Support Center

T. O'Connor

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Sincerely,

**/RA/**

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Docket No. 50-263  
License No. DPR-22

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Letter to T. O'Connor from K. Riemer dated May 13, 2011

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT – NRC TEMPORARY  
INSTRUCTION 2515/183 INSPECTION REPORT 05000263/2011009

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