



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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May 13, 2011

Mr. Thomas Kirwin  
Vice-President, Operations (Acting)  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

**SUBJECT: PALISADES NUCLEAR PLANT – NRC TEMPORARY INSTRUCTION 2515/183  
INSPECTION REPORT 05000255/2011010**

Dear Mr. Kirwin:

On April 29, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear 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 May 5, 2011, with yourself and members of your staff.

The objective of this inspection was to promptly assess the capabilities of Palisades Nuclear 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 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 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/**

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket Nos. 50-255  
License Nos. DPR-20

Enclosure: Inspection Report 05000255/2011010

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-255

License No: DPR-20

Report No: 05000255/2011010

Licensee: Entergy Nuclear Operations, Inc.

Facility: Palisades Nuclear Plant

Location: Covert, MI

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

Inspectors: J. Ellegood, Senior Resident Inspector  
T. Taylor, Resident Inspector

Approved by: John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

## **SUMMARY OF FINDINGS**

IR 05000255/2011010, 03/23/2011 – 04/29/2011; Palisades Nuclear Plant Temporary Instruction 2515/183 - Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event

This report covers an announced Temporary Instruction 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 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 (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 (SFP). 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>Licensee actions included the identification of equipment (active and passive) utilized for implementation of B.5.b actions and any additional equipment used in Severe Accident Management Guidelines (SAMGs). The licensee credited ongoing programs where permanently installed equipment is part of the mitigating strategy. These programs include the “limiting condition for operation” (LCO) board, for safety-related equipment, and the Operations aggregate list for nonsafety-related equipment. For equipment not permanently installed, the licensee performed walkdowns, tested or verified recent operation of the equipment. Non-installed active equipment within the scope defined above that did not have recent test results was tested. Non-installed passive equipment within the scope was walked down and inspected.</p>
<p>This review should be done for a reasonable sample of mitigating strategies/equipment.</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 reviewed the licensee’s consolidated response. In addition, the inspectors performed a walkdown/inventory of equipment stored in the licensee’s B.5.b building and an in-plant location. The inspectors discussed the operation of the equipment with licensee personnel responsible for maintaining the equipment. The inspectors observed the start of a generator-operated light and a portable generator. The inspectors performed a walkdown and checked calibration of radiation meters available outside of the protected area.</p> <p>As part of the inspection, the inspectors noted that the licensee had obtained an air compressor for recharging air bottles. The inspectors noted that the compressor could be used as an air source for small pneumatic plant loads.</p> <p>The inspectors identified a discrepancy with equipment needed for emergency cooling of the SFP. One required fitting was missing that was discovered while preparing for a walk thru of the procedure for the NRC. Other mitigating strategies exist for cooling the SFP in addition to the one strategy that requires the missing fitting. The licensee wrote a condition</p>

report (CR) to address the issue and obtained the missing coupling. The inspectors are determining the significance of this issue.

The inspectors reviewed the results of the triennial fire protection inspection documented in report 05000255/2010-008. No findings of significance were identified. The triennial team reviewed the following strategies:

NEI 06-12, Revision 2, Section	Licensee Strategy (Table)	Selected for Review
3.2.2	On-Site and Off-Site Communications (Table A.3-1)	Evaluated
3.2.3	Notifications/ERO Activation (Table A.3-1)	Evaluated
3.2.4	Initial Operational Response Actions (Table A.3-1)	Evaluated
3.2.5	Initial Damage Assessment (Table A.3-1)	Evaluated
3.3.7	PWR Enhancement Strategy No.7 – Portable Sprays (Table A.4-7)	Evaluated

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

The licensee identified several enhancements which have been added to condition reports.

The licensee identified the following discrepancies:

- Some consumables useful to plugging a hole in the SPF were not in stock. The licensee determined that sufficient material was available to plug a breach.
- Caterpillar gensets, an offsite resource, were not available. This equipment is redundant to other B.5.b equipment and the licensee will delete the item.
- One section of hose for B.5.b response was missing. The staged B.5.b equipment trailer contained 29 hoses; 20 are needed with 10 additional lengths of hose as part of the normal inventory. The licensee initiated actions to obtain another length of hose.

	<ul style="list-style-type: none"> <li>- Two cell phones were missing from the Emergency Operations Facility (EOF). The licensee replaced the phones.</li> </ul>
<b>Licensee Action</b>	<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>b. Verify through walkdowns or demonstration that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) in place and are executable. Licensees may choose not to connect or operate permanently installed equipment during this verification.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p>	<p>The licensee developed a matrix that listed applicable procedures. For most procedures, the licensee performed a review. In some cases, the licensee also performed a walkdown of the procedure. The walkdowns were performed primarily for procedures that are not specific to B.5.b/SAMGs.</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 reviewed the licensee's results. The inspectors observed some walkdowns to verify adequacy of the procedures and equipment. The inspectors reviewed portions of three procedures specific to B.5.b/SAMGs. These procedures were:</p> <ul style="list-style-type: none"> <li>- Emergency Management Guidelines</li> <li>- Alternate resources document</li> <li>- PCSO-5, Alternate Source for Charging to PCS</li> </ul> <p>The inspectors discussed the emergency management guidelines and alternate resources document with Operations.</p> <p>The inspectors concluded that the procedures, with one exception, were in place and could be used as intended. The exception relates to PCSO-5, the procedure for emergency SFP cooling. As previously identified, an additional fitting was needed to hook the hoses to the water source. The licensee wrote a condition report (CR) to address the issue and obtained the missing coupling.</p> <p><b>Discuss general results including corrective actions by licensee.</b></p> <p>The licensee identified several enhancements to procedures. In some cases, the enhancements address conditions that have changed since the procedures were first developed. For example, one procedure directed responders to the Emergency Operations Facility (EOF) to muster in the manner (Sic) house. The manor house is associated with the old EOF. The licensee initiated procedure changes. The inspector concluded that the discrepancies did not impact the licensee's ability to perform the mitigating strategies.</p>

<b>Licensee Action</b>	<b>Describe the licensee's actions and conclusions regarding training and qualifications of operators and support staff.</b>
<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 verified that all emergency response organization (ERO) and fire brigade personnel were in the Learning Management System (LMS) and current on training.</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 reviewed print outs of LMS qualifications to verify that training was current for personnel. The inspectors also reviewed initial and requalification lesson plans for ERO members. ERO members are tested each year on Emergency Management Guidelines. Prior to the test, members have the option to complete computer based training on the Emergency Management Guidelines.</p> <p>For fire brigade members, the inspectors discussed training content and frequency with personnel responsible for fire brigade training. The trainers stated that use of the B.5.b pump is demonstrated on a routine basis as part of fire brigade training. The inspectors reviewed the training reports for the third quarters of 2009 and 2010 that identified B.5.b related training. The inspectors observed a fire brigade member walkthrough a procedure for emergency cooling to the SFP.</p> <p>The inspectors identified through discussion that the electricians had not received training on the use of a small portable generator. However, the procedures and job aides showed the installation. Based on the general skill set of the electricians, the inspectors concluded that the generator could be used.</p> <p>The inspectors did not identify any training issues that would prevent implementation of procedures</p> <p><b>Discuss general results including corrective actions by licensee.</b></p> <p>The licensee did not identify any training issues.</p>
<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</p>	<p>The licensee contacted local fire departments and verified current contact information.</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>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 inspectors reviewed memoranda of understanding with local fire departments. In addition the inspectors reviewed existing contracts for private organizations identified as sources for equipment and supplies. The inspectors noted that the contracts may need modification during an event to obtain desired equipment and supplies. In addition, the licensee included several suppliers that do not have contracts in place. The inspectors reviewed the memorandum of understanding between Palisades and D.C. Cook.</p>
<p><b>Licensee Action</b></p>	<p><b>Discuss general results including corrective actions by licensee.</b></p> <p>No issues were identified. The inspectors concluded that the licensee had adequate contracts in place.</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><b>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.</b></p> <p>The licensee did not identify any issues that could have a significant impact on the success on the mitigating strategy. The inspectors reviewed open CRs for potential impacts that were not already discussed in Sections 03.01a through d above. No additional major impacts were noted.</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>The licensee verified that equipment relied upon for mitigating an SBO was available and appropriately staged. The licensee reviewed procedures that would be utilized in an SBO and did field walkdowns of equipment utilized in the procedures to validate it was available. Additionally, the licensee did a walkdown of spare safety-related motors in the warehouse.</p>

	<p><b>Describe inspector actions to verify equipment is available and useable.</b></p> <p>The inspectors walked down temporary equipment staged to provide fuel to a backup generator on-site to ensure the procedure could be performed and that necessary parts were available. The inspectors also reviewed surveillance and corrective action records to validate that there were no issues impacting the functionality of a backup emergency generator. Additionally, manual actions for control of auxiliary feedwater during SBO were reviewed and the parts necessary for that evolution were verified in-place and ready to use. The inspectors also walked down a small gasoline generator that would connect to a safety-related panel to provide minimum safe shutdown capability in an SBO, watched it operate, and validated the necessary electrical connections were available and that the associated procedure could be implemented. Overall, based on their review, the inspectors determined there were no significant issues with the licensee's mitigating strategy for SBO.</p> <p><b>Discuss general results including corrective actions by licensee.</b></p> <p>The licensee's review of this attribute revealed no significant issues and concluded the capability to mitigate SBO and station design were functional and valid. The licensee did identify potential enhancements to a procedure that installs spare safety-related motors from the warehouse. As a result of additional walk-downs with the NRC, the licensee identified a potential enhancement with regard to a tagout needed in an off-normal procedure during an SBO. Specifically, while the tagout referenced in the procedure is pre-generated in the electronic tagging system, during a SBO or other possible events that system may not be available. Additionally, there may be other procedures where this is the case. The licensee initiated a document revision notice to consider creating a non-electronic backup for tagouts referenced in emergency and off-normal procedures.</p>
<b>Licensee Action</b>	<p><b>Describe the licensee's actions to verify the capability to mitigate an SBO event.</b></p>
<p>b. Demonstrate through walkdowns that procedures for response to an SBO are executable.</p>	<p>The licensee reviewed procedures that would be utilized in an SBO event and verified that they were executable. This review included a walkdown of equipment required in the procedures, as described above.</p>

	<p><b>Describe inspector actions to assess whether procedures were in place and could be used as intended.</b></p> <p>The inspectors reviewed commitments in SBO-related Safety Evaluation Reports and reviewed a sample of tests and procedures to verify the commitments were properly accounted for. An off-normal procedure for an electrical lineup to provide power to pressurizer heaters was also reviewed. The inspectors also reviewed the procedure to connect a small gasoline generator to a safety-related panel in the plant. Additionally, the inspectors reviewed the procedure for obtaining spare safety-related motors from the warehouse and the general emergency operating procedure for SBO events. Overall, based on their review, the inspectors determined there were no significant issues with the licensee’s mitigating strategy for SBO.</p> <p><b>Discuss general results including corrective actions by licensee.</b></p> <p>The licensee’s review of this attribute revealed no significant issues and concluded the capability to mitigate an SBO was functional and valid. The licensee identified possible enhancements to the gasoline generator connection procedure which would provide more clarity. During a walk down of the gasoline generator with the NRC, an additional enhancement was identified to include pictures of the connections for further clarity. The inspectors reviewed preventative maintenance procedures for the spare motors in storage as well. As a result of the inspectors’ observations, the licensee is considering an enhancement to a work order which would further clarify acceptable oil levels in the spare motors.</p>
<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.</p>	
<p><b>Licensee Action</b></p>	<p><b>Describe the licensee’s actions to verify the capability to mitigate existing design basis flooding events.</b></p>
<p>a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee reviewed existing design and licensing basis documentation regarding protection against flooding events to include Individual Plant Examination of External Events (IPEEE) reviews, the Final Safety Analysis Report (FSAR), off-normal and emergency procedures, and design basis documents. As a result, the licensee identified both permanent and non-permanent plant features, materials, and equipment used to respond to flooding. Walk downs were performed and preventative maintenance records were reviewed to validate the functionality of the equipment. Additionally, the licensee reviewed</p>

	<p>a number of condition reports previously written against flood mitigation features or equipment for functionality concerns.</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 walked-down various safety-related areas to inspect flood mitigation features such as level switches, sump pumps, drain paths, and watertight barriers. Additionally, the inspectors reviewed flooding analyses that had been performed for safety-related plant areas and checked to see if assumptions were still valid during plant walk-downs. The inspectors also reviewed condition reports and preventative maintenance activities dealing with flood mitigation features to ensure there were no functionality issues and that the maintenance was being performed at the designated intervals. Overall, based on their review, the inspectors determined there were no significant issues with the licensee's mitigating strategy for flooding.</p>
	<p><b>Discuss general results including corrective actions by licensee.</b></p>
	<p>The licensee's review of this attribute concluded that all necessary equipment and features per the design and licensing bases were functional and appropriately staged. The licensee identified that a non-credited, gasoline-powered sump pump that could be used to mitigate flooding was located below the design flood level. As an enhancement, the licensee initiated a condition report to evaluate relocating the pump. NRC review revealed that in 2008, a condition report was written documenting an NRC-identified issue regarding the capacity of the floor drains in the safety-related 1-D switchgear and adjoining cable spreading room. Operators had been noting that they had to reduce flow to less-than approximately 20 gpm when performing a maintenance activity to flush fire piping and test the floor drains. Resolution of the issue at the time included generation of a work order to clean the drain piping. As of this review in 2011, the work order had not been completed. After discussion with the licensee, the work order has been returned to planning and is being scheduled for completion. For some time, the licensee has maintained a door from the 1-D room to another room open for other concerns. With this larger effective floor area, the licensee determined that for the design flooding scenario, the analyses are not challenged. However, the licensee is evaluating if further control is needed over the door given the potential impact on flooding in the 1-D room.</p>
<p>03.04</p>	<p>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</p>

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 style="text-align: center;"><b>Licensee Action</b></p>	<p style="text-align: center;"><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>
<p>a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.</p>	<p>The licensee identified equipment utilized/required for mitigation of fire and flood events. The licensee also reviewed the results of the walk-downs conducted in the 1990's to address Unresolved Safety Issue (USI) A-46, Seismic Qualification Utility Group (SQUG), in which the plant sought to validate the adequacy of mechanical and electrical equipment against seismic criteria not in use when the plant was originally licensed. This included non-safety-related equipment such as fire and flood mitigation features. Additionally, walk-downs were performed of major equipment used to mitigate fires and flooding.</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 walk-downs of important structures, systems and components (SSCs) needed to mitigate fire and flood events to identify the potential that the SSCs' function could be lost during a seismic event. This included installed fire protection equipment, flood barriers, and major B.5.b equipment. Additionally, the inspectors reviewed the context of USI A-46 (SQUG) and the conclusions drawn by the licensee from the review of that issue. Overall, based on their review, the inspectors determined there were no significant issues with the licensee's mitigating strategies.</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>Seismically qualified SSCs normally consist of safety-related equipment that has been formally qualified to function during and after a design basis earthquake. The licensee's reviews for this issue determined that nonsafety-related SSCs, in general, were not considered to be formally qualified to safety-related seismic standards. However, in resolving USI A-46 (SQUG) in the 1990's, experts reviewed the seismic ruggedness of nonsafety-related piping, cable trays, and other equipment throughout the plant as part of that effort. This included fire and flood mitigation piping and other features. The conclusion of analysis was that there were no seismic vulnerabilities and that piping systems were well supported. Additionally, for flood mitigation barriers, flooding loads were determined to bound seismic loads, maintaining the functionality of those barriers during seismic events. Sump pumps and level switches not seismically rugged were determined to not be needed for flood mitigation. The licensee did identify a potential enhancement to provide more detailed direction in fire procedures for the use of alternate water sources given the primary</p>

	<p>source for a fire zone was disabled. Additionally, equipment staged to respond to B.5.b events was not stowed in seismically qualified buildings and locations, as a seismic event and B.5.b event have never been assumed to occur concurrently. Finally, the licensee is considering removing some heaters in the turbine building that might fall during a seismic event and impact hose stations below. In sum, the licensee determined present measures and design are sufficient with no need for new mitigating strategies.</p>
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## Meetings

### .1 Exit Meeting

The inspectors presented the inspection results to Mr. T. Kirwin and other members of licensee management at the conclusion of the inspection on May 5, 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

R. White, Operations  
D. Campbell  
K. Simpson  
M Sicard  
G. Sleeper  
T. Horan  
L. Gilbert

#### Nuclear Regulatory Commission

R. Langstaff

## 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>
PCSO-5	User Curriculum Status for ERO positions	printed April 26, 2011
Agreement 10207202	Multipurpose Maintenance Modification and General Services Agreement	effective September 1, 2008
LM-0311	Qualification Matrix (Fire Brigade Qualifications	
	Emergency Management Guidelines Requalification Training	printed April 20, 2011
PL-LOR07E-003L	Security Issues	Revision 0
PL-NLO-07E-001L	Security	Revision 0
PL-FBT-B5B-001L	Hale Fire Pump Operation	Revision 0
PL-BEP-EPT-002	EMG Exam Example	
PL-BEP-SEP-001R	SAMG Exam Example	
PLLP-LOR-10C-02	SAMGs	Revision 0
PL-BEP-EPT-001L	EMGs	Revision 5
PL-BEP-SEP-001L		Revision 4
FP-PE-16	Fire Protection Check Sheet	Revision 2
WO 52333244 01	B5B Strategy and PM for Fire Equipment Inspection and Testing	printed April 20, 2011
	SAMG and EMG Spreadsheet	compiled May 2, 2011
	Initial Fire Brigade training attendance	July 2011
	Fire Brigade Report	3 <sup>rd</sup> Quarter 2009
	Fire Brigade report	3 <sup>rd</sup> Quarter 2010
	Fire Brigade Initial Training Plan	July 2010 Class
	Nuclear Fire Brigade requalification Training Attendance	September 2009
	Letter of Agreement, South Haven Emergency Services and PNPP	October 10, 2010
	Letter of Agreement, Covert Fire Department and PNPP	October 12, 2010

CR-PLP-2011-2196	Two-Fittings unavailable	May 2, 2011
	Letter of Agreement, South Haven Community Hospital and PNPP	October 14, 2010
	Letter of Agreement, Community Emergency Service and PNPP	October 18, 2010
	Letter of Agreement, GEL Labs and PNPP	October 22, 2010
	Reciprocal Laboratory Use Agreement, Indiana Michigan Power and Entergy	October 14, 2010
	Mutual Assistance Agreement between Detroit Edison, Entergy Nuclear Palisades and Indiana Michigan Power	November 5, 2010

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>
PFM-E-1	Emergency Post-Fire Repair for Appendix R Equipment	Revision 10
EOP Supplement 19	Alternate Auxiliary Feedwater Methods	Revision 9
WO 52265961	PM-Spare Electric Motor Check	
Contract 10235674-00	Regarding fuel oil delivery	
EOP 3.0	Station Blackout Recovery	Revision 14
FSAR	Chapter 8 Electrical Systems	Revision 25
	NRC Letter to Palisades Station Blackout Analysis-Safety Evaluation	June 25, 1992
	NRC Letter to Palisades Station Blackout Analysis-Safety Evaluation	May 20, 1991
ONP 2.1	Loss of AC Power	Revision 14
SOP-22	Emergency Diesel Generators	Revision 49
Palisades Alternate Resources Document PCSO-5	Alternate Source for Charging to PCS	Revision 3

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>
CR-PLP-2008-03991	During NRC review flowrates questioned for 1D switchgear room floor drains	September 24, 2008
WO 178560	Clear blockage of floor drain in Rm 223 and 224	
WO 52204653	D/Gs and D bus floor drain flow verification	
ARP-8	Safeguards Safety Injection and Isolation Scheme EK-13 (EC-13)	Revision 70
EC-5000121910	Replacement of SFP to ESS SDC to SFP SIRW to SDC/ESS and SDC to CCW Header Expansion Joints [flood barriers]	
Calculation	Internal Flooding Evaluation for Plant Areas Outside	Revision 4

EA-C-PAL-95-1526-01	Containment	
MSM-M-16	Inspection of Watertight Barriers	Revision 17
CR-PLP-2008-00750	Review of NRC Information Notice 2007-01 Recent Operating Experience Concerning Hydrostatic Barriers	February 14, 2008
DBD 7.08	Plant Protection from Flooding	Revision 6
ONP-12	Acts of Nature	Revision 26
WO 52233622	Inspection of Watertight Barriers	
PFM-E-1	Emergency Post-Fire Repair for Appendix R Equipment	Revision 10
EOP Supplement 19	Alternate Auxiliary Feedwater Methods	Revision 9
WO 52265961	PM-Spare Electric Motor Check	

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>
CR-PLP-2011-01280	Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami	March 16, 2011
	Palisades A-46 Final Report	May 15, 1995
Generic Letter 87-02	Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors Unresolved Safety Issue A-46	

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AF	Auxiliary Feedwater
ARM	Area Radiation Monitors
CAM	Continuous Air Monitors
CC	Component Cooling Water
CFR	Code of Federal Regulations
EOF	Emergency Operations Facility
ERO	Emergency Response Organization
FSAR	Final Safety Analysis Report
IPEEE	Individual Plant Examination of External Events
LCO	limiting condition for operation
LMS	Learning Management System
NRC	United States Nuclear Regulatory Commission
PCS	Primary Coolant System
PWR	Pressurized Water Reactor
SAMGs	Severe Accident Management Guidelines
SFP	Spent Fuel Pool
SQUG	Seismic Qualification Utility Group
SSCs	Structures, Systems, and Components

T. Kirwin

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Sincerely,

**/RA/**

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket Nos. 50-255  
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SUBJECT: PALISADES NUCLEAR PLANT – NRC TEMPORARY INSTRUCTION 2515/183  
INSPECTION REPORT 05000255/2011010

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