



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

April 22, 2015

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT - ISSUANCE OF AMENDMENT RE: LICENSE  
AMENDMENT REQUEST TO REVISE EMERGENCY RESPONSE  
ORGANIZATION STAFF AUGMENTATION RESPONSE TIMES (TAC  
NO. MF2321)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 255 to Renewed Facility Operating License No. DPR-20 for the Palisades Nuclear Plant. The amendment is in response to your letter dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014.

The amendment revises the Palisades Nuclear Plant Site Emergency Plan Figure 5-2, "Plant Staffing and Augmentation Requirements" to increase the staff augmentation response times for certain emergency response organization positions.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, reading "Jennivine K. Rankin".

Jennivine K. Rankin, Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures:

1. Amendment No. 255 to DPR-20
2. Safety Evaluation

cc w/encls: Distribution via ListServ



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-255

PALISADES NUCLEAR PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 255  
License No. DPR-20

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee), dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 255, Renewed Facility Operating License No. DPR-20 is hereby amended to authorize revision to the Palisades Nuclear Plant Site Emergency Plan as set forth in Entergy Nuclear Operations, Inc.'s application dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, and evaluated in the NRC staff's safety evaluation dated April 22, 2015.
3. This license amendment is effective as of the date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



William M. Dean, Director  
Office of Nuclear Reactor Regulation

Date of Issuance: April 22, 2015



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 255 FOR

RENEWED FACILITY OPERATING LICENSE NO. DPR-20

ENTERGY NUCLEAR OPERATIONS, INC.

PALISADES NUCLEAR PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By application dated June 25, 2013 (Reference 1), and as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014 (References 2, 3, 4, and 5, respectively), Entergy Nuclear Operations, Inc. (ENO) submitted changes to the Palisades Nuclear Plant Site Emergency Plan (PNPSEP) to the U.S. Nuclear Regulatory Commission (NRC) for review and prior approval pursuant to Section 50.54(q) of Title 10 of the *Code of Federal Regulations* (10 CFR).

The proposed changes would revise the PNPSEP to increase the staff augmentation response times for certain emergency response organization (ERO) positions. ENO proposes revising Figure 5-2 of the PNPSEP to extend response times for certain positions in the following Major Functional Areas:

Notification/Communication;  
Radiological Accident Assessment and Support of Operational Accident  
Assessment/Protective Actions (In-Plant); and  
Plant System Engineering, Repair, and Corrective Actions.

The licensee's supplemental letters dated August 7, 2013, February 13, and July 16, 2014, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on March 18, 2014 (79 FR 15148). However, a revised no significant hazards consideration determination was published in the *Federal Register* on January 6, 2015 (80 FR 523), to consider the aspects of the revised tasks associated with radiation protection technicians provided in the supplemental letter dated December 9, 2014.

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance on which the NRC staff based its acceptance are as follows:

Enclosure 2

## 2.1 Regulatory Requirements

10 CFR Section 50.47, "Emergency plans," sets forth emergency plan requirements for nuclear power plant facilities. The regulations in 10 CFR 50.47(a)(1)(i) state, in part, that:

...no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

As described in 10 CFR 50.47(a)(2), the NRC will base its finding, in part, on an assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented.

Section 50.47(b) establishes the standards that the onsite and offsite emergency response plans must meet for the NRC staff to make a positive finding that there is reasonable assurance that the licensee can, and will, take adequate protective measures in the event of a radiological emergency. With respect to shift staffing and emergency plans, augmentation is addressed through 10 CFR 50.47(b)(1), which states, in part, that, "...each principal response organization has staff to respond and to augment its initial response on a continuous basis" and through 10 CFR 50.47(b)(2) which states, in part, that the emergency response plan must ensure that, "...adequate staffing to provide initial facility accident response in key functional areas is maintained at all times," and that "timely augmentation of response capabilities is available...."

10 CFR 50.54(q)(1)(iii) defines emergency planning function and states the following:

[A] capability or resource necessary to prepare for and respond to a radiological emergency, as set forth in the elements of Section IV. of appendix E to [Part 50] and, for nuclear power reactor licensees, the planning standards of §50.47(b).

10 CFR 50.54(q)(1)(iv) defines reduction in effectiveness and states the following:

[A] change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

10 CFR 50.54(q)(3) states in part the following:

The licensee may make changes to its emergency plan without NRC approval only if the licensee performs and retains an analysis demonstrating that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in appendix E [to Part 50] and, for nuclear power reactor licensees, the planning standards of 10 CFR 50.47(b).

10 CFR 50.54(q)(4) states, in part the following:

The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section may not be implemented

without prior approval by the NRC.

10 CFR 50.54(q)(1)(iv) defines reduction in effectiveness and states the following:

[A] change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

Appendix E to Part 50, Section IV, Part A, "Organization," states, in part,

The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization....

As required under 10 CFR 50.54(q)(4), the proposed changes in the application, as supplemented, regarding the increase in staff augmentation times for certain ERO positions were submitted to the NRC by the licensee for approval prior to implementation, as required under 10 CFR 50.54(q)(4).

## 2.2 Guidance

Regulatory Guide 1.101, Revision 2 (RG 1.101), "Emergency Response Planning and Preparedness for Nuclear Power Reactors" (Reference 6), provides guidance on methods acceptable to the NRC staff for implementing specific parts of the NRC's regulations – in this case, 10 CFR 50.47(b) and Appendix E to Part 50. RG 1.101 endorses Revision 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (NUREG-0654) (Reference 7), which provides specific acceptance criteria for complying with the standards set forth in 10 CFR 50.47. These criteria provide a basis for NRC licensees, and State and local governments to develop acceptable radiological emergency plans and improve emergency preparedness.

Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Response Plans for Nuclear Power Plants" (Reference 8), provides guidance on methods acceptable to the NRC staff for implementation of 10 CFR 50.54(q) as it relates to making changes to emergency response plans.

In NUREG-0654, Section II, "Planning Standards and Evaluation Criteria," Evaluation Criteria II.B.1 and II.B.5 address the 10 CFR 50.47(b)(2) planning standard. Evaluation Criteria II.B.1 specifies the onsite emergency organization of plant staff personnel for all shifts, and its relation to the responsibilities and duties of the normal shift complement. Evaluation Criteria II.B.5, states, in part, that:

Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing

Requirements for Nuclear Power Plant Emergencies.” The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.

### 3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of its proposed PNPSEP changes, as described in the application dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014. The NRC staff's technical evaluation is detailed below.

#### 3.1 Background

The PNPSEP Revision 3 (Reference 9) was reviewed and found to meet the planning standards of 10 CFR 50.47(b) and the requirements of Appendix E to Part 50 by the NRC in the Inspection Report IE SER 50-255/83-12 dated September 8, 1983 (Reference 10). PNPSEP Revision 3 included the following:

- An engineer who would provide the on-shift Notification/Communication function during normal dayshift hours and an auxiliary operator (AO) who would provide the on-shift Notification/Communication function on backshift, weekends, and holidays;
- An on-shift staffing level of 9 people;
- A fire brigade staffed in accordance with Technical Specifications;
- Security staffing in accordance with the Security Plan; and
- Radiological accident assessment and support of operational accident assessment as a 30 minute augmented position.

There were no substantial changes made to the PNPSEP plant staffing figure, currently designated as Figure 5-2, until PNPSEP Revision 23 (Reference 11), dated January 22, 2013. Revision 23 included several modifications made by the licensee pursuant to the provisions of 10 CFR 50.54(q). These modifications included the addition of a dedicated on-shift communicator, reassignment of offsite dose assessment to a trained on-shift Chemistry Technician, and crediting three other operations personnel, who were routinely on-shift, for the performance of emergency response functions.

There is one portion of the application dated June 25, 2013, that the NRC staff did not rely upon in conducting its review. Section 4.2, “Analysis of Augmentation Response Time Extension” of the application contains an On-shift Staffing Analysis (OSA). Section 4.2 states that an “OSA was conducted assuming a 90-minute response time for these augmented positions as a conservative assumption and to ensure time of response margin, and to allow the use of the analysis for a possible future extension of ERO augmentation times.” In other words, the licensee found that it was still sufficiently conservative for several staffing positions not to be augmented until 90 minutes. Although the licensee did not ask for some of the 90 minute augmentation in its proposed changes, it did state that the OSA would be useful for possible future extension of ERO augmentation times. In its review, the NRC staff did not rely on the 90-minute response time indicated in the OSA. Also, the NRC staff has not approved the use of

the OSA for possible future extension of ERO augmentation times. The basis for the NRC staff's review of the proposed changes to the PNPSEP is described below.

### 3.2 Major Functional Areas

The licensee provided a justification for the proposed PNPSEP changes that included a detailed review of each Major Functional Area and task described in NUREG-0654, Table B-1. The NRC staff evaluation of the proposed changes is discussed below.

#### 3.2.1 Plant Operations and Assessment of Operational Aspects

The licensee is not requesting changes to this Major Functional Area. For clarity, Table 3-1 of this technical evaluation depicts the on-shift staffing for Plant Operations and Operations Aspects Staffing during each substantive revision to the SEP.

<b>Table 3-1 On-Shift Plant Operations and Assessment of Operational Aspects Staffing</b>			
<b>On-Shift Position</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Shift Manager (SRO)</b>	1	1	1
<b>Shift Supervisor (SRO)</b>	0	1	1
<b>Shift Engineer/Shift Technical Advisor (SRO)</b>	1	1	1
<b>Control Room Operators</b>	2	2	2
<b>Auxiliary Operators</b>	2	6	6

NUREG-0654, Table B-1 guidance does not contain 30 or 60 minute augmentation responders for the Plant Operations and Assessment of Operational Aspects Major Functional Area. No 30 or 60 minute augmentation responders are provided by the licensee for this Major Functional Area.

#### 3.2.2 Emergency Direction and Control

The licensee is not requesting changes to this Major Functional Area.

NUREG-0654, Table B-1 guidance indicates that the Shift Technical Advisor (STA), Shift Supervisor, or designated facility manager should be assigned the Emergency Direction function as a task that may be provided to shift personnel assigned other functions. The overall direction of facility response may be transferred to the Emergency Operations Facility (EOF) Director when all centers are fully manned. NUREG-0654, Table B-1 designates an augmentation time of 60 minutes for the EOF Director.

PNPSEP Revision 3, PNPSEP Revision 23, and the proposed PNPSEP provide that the Shift Manager will initially perform the Emergency Direction and Control function until relieved. The licensee further provides that the EOF Director is available to perform Emergency Direction and



Control within 60 minutes.

The licensee is not requesting a change to the EOF Direction and Control Major Functional Area augmentation response time or to Figure 5-2 of the PNPSEP regarding Emergency Direction and Control. However, the NRC staff notes that a request for additional information (RAI) was issued by email May 1, 2014 (Reference 12), which requested the licensee to justify how increasing the augmentation times in other Major Functional Areas would not negatively impact the on-shift crew's ability to mitigate the event. By letter dated July 16, 2014, the licensee provides that the Shift Manager and STA (see Table 3-1 of this SE for staffing levels) were responsible for performing offsite notifications for some analyzed events, resulting in tasks that were concurrent with their primary emergency response tasks prior to PNPSEP Revision 23. The licensee states that PNPSEP Revision 23 included changing the on-shift communicator from a "task that may be provided by shift personnel" to a dedicated position. The assignment of a dedicated on-shift communicator relieved the Shift Manager and/or the STA of the concurrent task to perform offsite communications during some analyzed events. Based on the above, the NRC staff concludes that the proposed changes to other Major Functional Areas do not adversely impact the on-shift crew's ability to provide Emergency Direction and Control.

### 3.2.3 Notification/Communications

NUREG-0654, Table B-1 guidance indicates that one communicator be assigned on-shift with a dedicated communicator augmenting the on-shift communicator within 30 minutes. PNPSEP Revision 3 assigned one individual to perform the Notification/Communication function as a duty that may be provided to shift personnel assigned other functions. PNPSEP Revision 3 also provided that a dedicated communicator would augment the on-shift communicator within 30 minutes.

By application dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, the licensee requested a change to the PNPSEP. The proposed change would include a dedicated on-shift communicator and extend the augmentation time for one communicator from 30 minutes to 60 minutes. This change is detailed on Table 3-2 below.

<b>Table 3-2 Notification/Communication Staffing</b>			
<b>Communication Position</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>On-Shift</b>	1**	1	1
<b>30 Minute Augmentation</b>	1	1	0
<b>60 Minute Augmentation</b>	2	2	3
** Filled by Plant Technical Engineer on day shift and an Auxiliary Operator on backshift, holidays, and weekends.			

By letter dated July 16, 2014, the licensee responded to an NRC staff RAI dated May 1, 2014, concerning on-shift dedicated communicator capabilities. The RAI requested justification that demonstrates increasing the augmentation time frame from 30 minutes to 60 minutes would not negatively impact the capability of the on-shift crew to mitigate an event. In the RAI response,

the licensee provides that PNPSEP Revision 23 includes a dedicated on-shift communicator who does not have any duties other than providing timely and accurate communications to offsite response agencies. With regard to why it believes that augmentation from 30 minutes to 60 minutes is acceptable, the licensee further states, "the availability of dedicated phone circuits and wireless headsets enables these NRC notifications to be performed by the same on-shift communicator who performs the state and county notifications. Using a headset as needed, a [single dedicated] communicator can maintain an open line with the NRC while making state and county notifications on another line. This capability has been demonstrated in emergency drills and exercises conducted at PNP."

Because the licensee has assigned a dedicated on-shift communicator who will use improved communication equipment, and the capacity of this equipment has been demonstrated in emergency drills and exercises, the staff concludes that the Notification/Communication task can be performed by the on-shift dedicated communicator until augmented within 60 minutes. Therefore, the proposed change to the ERO augmentation time continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to Part 50.

### 3.2.4 Radiological Accident Assessment and Support of Operational Accident Assessment/Protective Actions (In-Plant)

The function of onsite radiological assessment is to review radiological conditions onsite using data from available instrumentation, assess the impact of changing radiological conditions on emergency classification, assist in accident assessment based upon those changing radiological conditions, and recommend appropriate onsite protective measures. This Major Functional Area includes the following tasks:

#### 1. EOF Director

NUREG-0654, Table B-1 identifies one person to be available in 60 minutes to function as the Emergency Director. PNPSEP Revision 3, PNPSEP Revision 23, and the LAR submittal, as supplemented, indicate that one person will be available in 60 minutes to function as the Emergency Director. The licensee is not requesting a change for the EOF Director function.

#### 2. Offsite Dose Assessment

NUREG-0654, Table B-1 identifies one person to perform the offsite dose assessment function as a 30-minute augmented position. PNPSEP Revision 3 provides one person to perform the offsite dose assessment function as a 30-minute augmented position. PNPSEP Revision 23 currently assigns offsite dose assessment function to the on-shift Chemistry Technician with augmentation by Senior Radiation Protection (RP) Expertise in 30 minutes.

By application dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, the licensee requested a change to the Offsite Dose Assessment Task of the PNPSEP. The proposed change would extend the augmentation time for offsite dose assessment from 30 minutes to 60 minutes. The

licensee indicates that the on-shift Chemistry Technician can readily perform offsite dose assessment calculations by means of a computerized dose assessment program that uses installed radiological and meteorological instrumentation. No competing sampling activities for the Chemistry Technician were identified by the licensee.

Based on the licensee's current dose assessment capability and the licensee's evaluation of the tasks assigned to the on-shift Chemistry Technician within 60 minutes of any of the analyzed events, the NRC staff concludes that the Chemistry Technician is capable of performing offsite dose assessment until augmented within 60 minutes. As a result of the proposed change, the Shift Manager will be relieved of offsite dose assessment activities by the Chemistry Technician who will be subsequently relieved of offsite dose assessment when augmented by Senior RP Expertise at 60 minutes. Therefore, the proposed change to the ERO augmentation time of 60 minutes continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to Part 50.

### 3. Offsite and Onsite Surveys, In-Plant Surveys, and Radiation Protection

NUREG-0654, Table B-1 identifies one on-shift "HP [Health Physics] Technician" who is responsible for performing in-plant surveys. NUREG-0654, Table B-1 further identifies two HP Technicians for protective actions (in-plant), but indicates that they "may be provided by shift personnel assigned other functions."

PNPSEP Revision 23 and the proposed LAR, as supplemented, use the title of "RP Technicians" in place of the NUREG-0654 Table B-1 title of "HP Technicians." As identified in PNPSEP Revision 3, PNPSEP Revision 23, and the proposed LAR, as supplemented, Tables 3-3, 3-4, 3-5, and 3-6 of this evaluation show the on-shift, 30-minute, 60-minute, and 90-minute RP augmentation staffing.

<b>Table 3-3 On-Shift Radiation Protection</b>			
<b>RP Function</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Offsite Surveys</b>	0	0	0
<b>Onsite Surveys</b>	0	0	1*
<b>In-plant Surveys</b>	1*	1*	1*
<b>RP (Access Control, RP coverage, Personnel Monitoring, Dosimetry)</b>	2*	2*	2
* may be assigned to shift personnel assigned other functions			

<b>Table 3-4 Radiation Protection 30 minute augmentation</b>			
<b>RP Function</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Offsite Surveys</b>	2	2	0
<b>Onsite Surveys</b>	1	1	0
<b>In-plant Surveys</b>	1	1	0
<b>RP (Access Control, RP coverage, Personnel Monitoring, Dosimetry)</b>	2	2	0
* may be assigned to shift personnel assigned other functions			

<b>Table 3-5 Radiation Protection 60 minute augmentation</b>			
<b>RP Function</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Offsite Surveys (offsite FMT)</b>	2	2	2
<b>Onsite Surveys (onsite FMT)</b>	1	1	1
<b>In-plant Surveys (for the proposed, this function will be provided, as needed, by one of the three augmenting RP techs)</b>	1	1	1*
<b>RP (Access Control, RP coverage, Personnel Monitoring, Dosimetry. The proposed duties also include offsite, onsite and in-plant surveys as needed)</b>	2	2	3
* may be assigned to shift personnel assigned other functions			

<b>Table 3-6 Radiation Protection 90 minute augmentation</b>			
<b>RP Function</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Offsite Surveys (offsite FMT)</b>	0	0	2
<b>Onsite Surveys</b>	0	0	0
<b>In-plant Surveys (for the proposed, this function will be provided, as needed, by one of the three augmenting RP techs)</b>	0	0	1*
<b>RP (Access Control, RP coverage, Personnel Monitoring, Dosimetry. The proposed duties also include offsite, onsite and in-plant surveys as needed)</b>	0	0	3
* may be assigned to shift personnel assigned other functions			

The licensee is proposing to change the PNPSEP RP Technician staffing and augmentation requirements as follows:

- A second qualified RP technician will be added on-shift;
- Three qualified RP technicians will arrive within 60 minutes for offsite surveys, onsite (out-of-plant) surveys, in-plant surveys, access control, RP coverage, personnel monitoring, and dosimetry;
- Three additional qualified RP technicians will arrive within 90 minutes for offsite surveys, onsite (out-of-plant) surveys, in-plant surveys, access control, RP coverage, personnel monitoring, and dosimetry;
- One RP technician will arrive within 60 minutes to perform onsite field monitoring;
- One offsite field monitoring team consisting of a driver and an RP technician will arrive within 60 minutes; and
- One additional field monitoring team consisting of a driver and an RP technician will arrive within 90 minutes.
- Eliminate 30 minute augmented responders.

The licensee provides that removal of 30 minute augmented RP staffing should be acceptable because there is no expected need to perform offsite surveys for at least the first 60 minutes of the event due to the use of installed post-accident effluent radiation monitors. The installed post-accident effluent radiation monitors can provide rapid indication of a release of radioactive materials and can be used for offsite dose assessment calculation purposes. The two on-shift RP technicians could perform onsite surveys if needed to support offsite dose assessment calculations for the first 60 minutes following

event declaration. An additional RP technician will arrive within 60 minutes to perform onsite monitoring.

The licensee provides that the need for onsite out-of-plant or in-plant surveys is unlikely during the initial stages of an event. During the initial stages of an event, the major response activities are concentrated on determining the cause of the event and placing the plant in a safe condition. In-plant radiological monitoring instrumentation provides a means to determine radiological conditions during an emergency. If radiation levels are either elevated or unknown in an area that requires entry during the initial stages of an event, the on-shift RP technicians are available to perform in-plant surveys prior to the arrival of the 60 and 90 minute augmentation responders.

The licensee provides that at the time of PNPSEP Revision 3, radiological access control was a labor intensive task. Computerized radiation protection work processes now allow workers to sign-in on their radiation work permits and self-issue dosimetry during normal plant operations. Dosimeters provide dose information and will alarm at preset dose and dose rate alarms. In addition to self-issuance of dosimetry, personnel are trained and required to self-monitor for contamination when exiting any contaminated area. The availability of computerized processes, electronic dosimeters, and enhanced RP processes relieve RP Technicians of access control, personnel monitoring, and dosimetry tasks, thereby allowing the RP Technicians to monitor vital response activities prior to the arrival of the 3 RP technicians within 60 minutes of event declaration and an additional 3 RP technicians arriving within 90 minutes of event declaration.

The licensee provides that offsite field monitoring would not be needed for at least the first 60 minutes following an event because onsite field monitoring or installed in-plant post-accident radiation monitoring instrumentation provides rapid indication of a release of radioactive material which could be used to quantify a radioactive release. Offsite field monitoring would be accomplished by a team arriving within 60 minutes of event declaration. A second offsite monitoring team will arrive within 90 minutes of event declaration.

The licensee proposal that each offsite field monitoring team will consist of a driver and a RP technician does not substantially reduce the effectiveness of the field monitoring teams. Only one RP technician is required to perform offsite field monitoring and communicate the results while the second team member would function as a driver.

Based on technological improvements for dose monitoring, access control to radiologically controlled areas and dose assessment, the arrival of one offsite monitoring team within 60 minutes, and the assignment of additional RP personnel on-shift to perform these functions, the NRC staff finds the extension of the required augmentation time for this task to be acceptable. Therefore, the proposed change to the ERO augmentation time continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50.

### 3.2.5 Plant System Engineering, Repair and Corrective Actions

This Functional Area includes the following tasks:

## 1. Technical Support

NUREG-0654, Table B-1 identifies one STA to be on-shift, core/thermal hydraulics engineering expertise to be available in 30 minutes, and Electrical and Mechanical engineering expertise to be available in 60 minutes. As indicated in Table 3-1 of this technical evaluation, the licensee on-shift staffing includes an on-shift STA. The licensee has not requested any change for the on-shift staffing for the STA.

By application dated June 25, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, the licensee requested a change to the Technical Support Task of the PNPSEP. The proposed change would extend the augmentation time for the Core/Thermal Hydraulics Engineer from 30 minutes to 60 minutes. No change was requested for Electrical and Mechanical engineering expertise augmentation at 60 minutes.

By letter dated July 16, 2014, the licensee responded to an RAI concerning how increasing the augmentation time would not negatively impact the on-shift's crew's ability to mitigate the event. The licensee states the following in the RAI response regarding extending the Core/Thermal Hydraulics Engineer augmentation time:

[T]he STA functions in an oversight role for accident assessment and evaluation of operating conditions, which includes providing the core/thermal hydraulic technical support function on-shift. Concurrent offsite communications tasks for the STA were eliminated with the addition of a dedicated on-shift communicator to the on-shift staffing complement and the reassignment of communications duties from the STA to the dedicated communicator. The elimination of this communications collateral duty allows the STA to focus entirely on performing assigned technical support activities required by operating procedures, Technical Specifications, and emergency implementing procedures without responding augmented staff. The addition of the on-shift staff to support communicator eliminates any STA communications responsibilities and obviates the need for a 30-minute responder for the core/thermal hydraulic technical support function.

In the RAI response, the licensee stated that the STA provides accident assessment and evaluation of operating conditions, which includes providing the core/thermal hydraulic technical support function on-shift. Improvements in the monitoring of plant parameters via the PNP plant process computer and improvements in emergency procedures have lessened the burden on the STA during postulated events.

Based on improvements in the ability of the STA to monitor and determine plant conditions provided by improved monitoring equipment, and emergency response procedures with the removal of emergency response collateral communication responsibilities, the NRC staff finds the extension of the required augmentation time for core/thermal hydraulics engineering to be acceptable. Therefore, the proposed change to the ERO augmentation time continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to Part 50.

## 2. Repair and Corrective Actions

NUREG-0654, Table B-1 specifies the major task of "Repair and Corrective Actions" to be fulfilled on shift by a total of two personnel who also "[m]ay be provided by shift personnel assigned other functions." One person would perform the function of a mechanic and one person would perform the function of an electrician. One electrician and one instrument and control (IC) technician would respond within 30 minutes to augment the ERO. One mechanic, one radwaste operator and one additional electrician would respond within 60 minutes to augment the ERO.

Tables 3-7, 3-8, and 3-9 of this technical evaluation show on-shift, 30-minute, and 60-minute augmentation staffing as identified in PNPSEP Revision 3, PNPSEP Revision 23, and the proposed LAR, as supplemented for the Repair and Corrective Actions Major Functional Area.

<b>Table 3-7 Repair and Corrective Actions On-Shift Staffing</b>			
<b>On-Shift Position</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Mechanic</b>	1*	1*	1*
<b>Rad Waste Operator</b>	0	0	0
<b>Electrician</b>	1*	1*	1*
<b>IC Technician</b>	0	0	0
* may be assigned to shift personnel assigned other functions			

<b>Table 3-8 Repair and Corrective Actions 30 Minute Augmentation</b>			
<b>On-Shift Position</b>	<b>PNPSEP Rev. 3</b>	<b>PNPSEP Rev. 23</b>	<b>Proposed</b>
<b>Mechanic</b>	0	0	0
<b>Rad Waste Operator</b>	0	0	0
<b>Electrician</b>	1	1	0
<b>IC Technician</b>	1	1	0
* may be assigned to shift personnel assigned other functions			



Table 3-9 Repair and Corrective Actions 60 Minute Augmentation			
On-Shift Position	PNPSEP Rev. 3	PNPSEP Rev. 23	Proposed
Mechanic	1	1	1
Rad Waste Operator	1	1	1
Electrician	1	1	2
IC Technician	0	0	1
* may be assigned to shift personnel assigned other functions			

By application dated June 25, 2013, and as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014, the licensee requested a change to the Repair and Corrective Actions task of the PNPSEP. The proposed change would extend the augmentation time for the electrician and the IC technician from 30 minutes to 60 minutes. No other changes were requested for the Repair and Corrective Actions Major Functional Task.

By RAI dated December 16, 2013 (Reference 13), the NRC staff requested additional information regarding on-shift Repair and Corrective Action capabilities. By letter dated February 13, 2014, the licensee responded to the RAI and stated the following:

[T]he PNP ECCS [emergency core cooling system] is designed such that it can perform its safety functions assuming a single failure and loss of offsite power, as required by 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants." That is, the ECCS is designed and capable of performing its required safety functions with no required repairs or corrective actions.

By letter dated July 16, 2014, the licensee responded to an RAI dated May 1, 2014, concerning how increasing augmentation times would not negatively impact the on-shift crew's capabilities to mitigate the event. In the RAI response, the licensee provided that the on-shift operators have the necessary training and expertise to perform troubleshooting and minor repairs during plant operations, and would be available to perform any minor troubleshooting and repair activities that may be needed such as resetting breakers and valve manipulations. The addition of two plant operators to the on-shift staffing complement as documented in Revision 23 of the SEP, supports the response time change for two 30-minute responders to 60 minutes.

Based on the PNP design and the availability of on-shift operators with the necessary training and expertise to perform minor maintenance actions as directed by the control room supervisor to mitigate an event, the NRC staff finds the requested extension in augmentation time to be acceptable. Therefore, the proposed change to the ERO augmentation time continues to meet the standards of 10 CFR 50.47(b) and the

requirements of Appendix E to Part 50.

### 3.2.6 Fire Fighting

NUREG-0654, Table B-1 specifies that the Fire Brigade Major Functional Area be staffed in accordance with the Technical Specifications. This section does not contain specific 30 and 60 minute augmentation response information other than a reference to local support. PNPSEP Revisions 3 and PNPSEP Revision 23 are consistent with NUREG-0654 regarding the Fire Fighting Major Functional Area.

The licensee is not requesting a change for the Fire Fighting Major Functional Area. By letter dated July 16, 2014, the licensee responded to an RAI concerning the ability of the on-shift staff to cope with a spectrum of events/scenarios until augmenting ERO personnel arrives. The licensee stated that for fire scenarios PNP has a 5-person fire brigade crew that is available onsite at all times. The licensee further provides that the availability of an on-shift fire brigade allows the other on-shift personnel to perform their required emergency planning duties without the added tasks of fire brigade or first-aid duties. Based on the above, the NRC staff concludes that the proposed changes to other Major Functional Areas do not adversely impact the on-shift crew's ability to support Plant Operations and Assessment of Operational Aspects.

### 3.2.7 Rescue Operations and First Aid

The licensee is not requesting a change for the Rescue Operations and First Aid Major Functional Area.

### 3.2.8 Site Access Control and Personnel Accountability

The licensee is not requesting a change for the Site Access and Personnel Accountability Major Functional Area.

## 3.3 Summary

The NRC staff performed a technical and regulatory review of the proposed changes to certain augmentation times related to the following Major Functional Areas:

- Notification/Communication;
- Radiological Accident Assessment and Support of Operational Accident Assessment/Protective Actions (In-Plant); and
- Plant System Engineering, Repair, and Corrective Actions.

As described in Section 3.2 of this SE, the NRC staff determined that these changes do not alter the intent of any Major Functional Area. The NRC staff reviewed the remaining Major Functional Areas and determined there is reasonable assurance the licensee can and will take adequate protective measures in the event of a radiological emergency.

The NRC staff finds that the proposed emergency plan changes meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E to Part 50, and provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological

emergency. Therefore, the NRC staff concludes that the proposed PNPSEP changes to certain augmentation times, provided as Attachment 2, Figure 5-2, of the licensee's supplemental letter dated December 9, 2014 (Reference 5), are acceptable.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes an administrative procedure. The amendment relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

#### 7.0 REFERENCES

1. Entergy Nuclear Operations Application, "Palisades - License Amendment Request to Revise Emergency Response Organization Staff Augmentation Response Times" dated June 25, 2013 (ADAMS Accession No. ML13176A405).
2. Entergy Nuclear Operations Letter, "Palisades Nuclear Plant - Response to Request for Additional Information for License Amendment Request to Revise Emergency Response Organization Staff Augmentation Response Times," dated August 7, 2013 (ADAMS Accession No. ML13220A008).
3. Entergy Nuclear Operations Letter, "Palisades - Response to December 16, 2013 Request for Additional Information for License Amendment Request to Revise Emergency Response Organization Staff Augmentation Response Times," dated February 13, 2014 (ADAMS Accession No. ML14044A059).
4. Entergy Nuclear Operations Letter, "Palisades Nuclear Plant, Response to May 1, 2014 Request for Additional Information for License Amendment Request to Revise Emergency Response Organization Staff Augmentation Response Times," dated July 16, 2014 (ADAMS Accession No. ML14199A101).

5. Entergy Nuclear Operations Letter, "Palisades, Supplement to License Amendment Request to Revise Emergency Response Organization Staff Augmentation Response Times," dated December 9, 2014 (ADAMS Accession No. ML14343A581).
6. Regulatory Guide 1.101, Revision 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated October 31, 1981 (ADAMS Accession No. ML090440294).
7. NUREG-0654/FEMA REP-1, Revision 1, Supplement 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," dated November 30, 1980 (ADAMS Accession No. ML040420012).
8. Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Response Plans for Nuclear Power Plants," dated November 30, 2011 (ADAMS Accession No. ML102510626).
9. U.S. Nuclear Regulatory Commission Internal Memorandum from J.M. Felton, "Releases public version of rev to emergency plan," dated September 22, 1983 (ADAMS Legacy Library Accession No. 8309270681).
10. NRC SER, "IE SER 50-255/83-12 on 830321-0819 re Rev 3 to site emergency plan," dated September 8, 1983 (ADAMS Legacy Library Accession No. 8309210293).
11. Entergy Nuclear Operations Letter, "Palisades Nuclear Plant - Emergency Plan, Revision 23," dated January 22, 2013 (ADAMS Accession No. ML13023A246).
12. U.S. Nuclear Regulatory Commission email to Entergy Nuclear Operations, Inc., "Request for Additional Information – Palisades – LAR to Revise Emergency Response Organization Staff Augmentation Response Times – MF2321," dated May 1, 2014 (ADAMS Accession No. ML14121A282).
13. U.S. Nuclear Regulatory Commission email to Entergy Nuclear Operations, Inc., "Request for Additional Information – Palisades – Proposed Revision to Palisades Site Emergency Plan (SEP) to increase the staff Augmentation response time for certain Emergency Response Organization (ERO) positions from 30 to 60 minutes – MF2321," dated December 16, 2013 (ADAMS Accession No. ML13353A042)

Principle Contributor: R. Hoffman, NSIR/DPR

April 22, 2015

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT - ISSUANCE OF AMENDMENT RE: LICENSE  
AMENDMENT REQUEST TO REVISE EMERGENCY RESPONSE  
ORGANIZATION STAFF AUGMENTATION RESPONSE TIMES (TAC NO.  
MF2321)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 255 to Renewed Facility Operating License No. DPR-20 for the Palisades Nuclear Plant. The amendment is in response to your letter dated June 23, 2013, as supplemented by letters dated August 7, 2013, February 13, July 16, and December 9, 2014.

The amendment revises the Palisades Nuclear Plant Site Emergency Plan Figure 5-2, "Plant Staffing and Augmentation Requirements" to increase the staff augmentation response times for certain emergency response organization positions.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Jennivine K. Rankin, Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures:

1. Amendment No. 255 to DPR-20
2. Safety Evaluation

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\*via memo

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DATE	3/13/2015	2/27/2015	1/22/2015	3/31/2015
OFFICE	DORL/LPL3-1/BC	NRR/DORL/D	NRR/OD	DORL/LPL3-1/PM
NAME	DPelton	LLund	WDean	JRankin
DATE	4/03/2015	4/10/2015	4/21/2015	4/22/2015

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