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PNP 2013-044

June 25, 2013

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

**SUBJECT:** License Amendment Request to Revise Emergency Response  
Organization Staff Augmentation Response Times

Palisades Nuclear Plant  
Docket 50-255  
License No. DPR-20

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations, Inc. (ENO) requests Nuclear Regulatory Commission (NRC) review and approval of a revision to the Palisades Nuclear Plant (PNP) Site Emergency Plan (SEP) to increase the staff augmentation response times for certain Emergency Response Organization positions from 30 to 60 minutes. ENO has reviewed the proposed changes against the standards in 10 CFR 50.47(b) and requirements in 10 CFR 50, Appendix E.

This proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c), and ENO has determined that this change involves no significant hazards consideration. The bases for this determination are included in Attachment 1, which provides a description of the proposed change, background discussion, technical analysis, regulatory analysis, and environmental review. Attachment 2 provides a historical summary of staffing and augmentation response time changes. Attachment 3 provides the proposed revised SEP pages.

ENO requests approval of the proposed amendment by June 25, 2014. Once approved, the amendment will be implemented within 60 days.

This letter contains no new or revised commitments.

In accordance with 10 CFR 50.91, ENO is notifying the State of Michigan of this proposed license amendment by transmitting a copy of this letter to the designated state official.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 25, 2013.

Sincerely,



ajv/jse

- Attachments:
1. Description and Evaluation of Requested Change
  2. Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes
  3. Proposed Revision to Palisades Nuclear Plant Site Emergency Plan Pages

cc: Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC  
State of Michigan

## **ATTACHMENT 1**

### **Description and Evaluation of Requested Change**

# ATTACHMENT 1

## Description and Evaluation of Requested Change

### 1.0 DESCRIPTION

Pursuant to 10 CFR 50.90, "Amendment of License or Construction Permit at Request of Holder," Entergy Nuclear Operations, Inc. (ENO) requests Nuclear Regulatory Commission (NRC) review and approval of a revision to the Palisades Nuclear Plant (PNP) Site Emergency Plan (SEP) to increase the staff augmentation response times for certain Emergency Response Organization (ERO) positions from 30 to 60 minutes. ENO has reviewed the proposed changes against the standards in 10 CFR 50.47(b) and requirements in 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

### 2.0 PROPOSED CHANGE

Currently, SEP Figure 5-2, "Plant Staffing and Augmentation Guidelines," specifies the augmentation response times for certain ERO positions as 30 minutes or 60 minutes. ENO proposes to revise Figure 5-2 to extend the 30-minute response time requirement to 60 minutes for certain positions in the following Major Functional Areas:

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

This results in response time changes for a total of eleven 30-minute response positions. These changes are depicted in Attachments 2 and 3. The response times for fifteen existing 60-minute response positions are unchanged.

### 3.0 BACKGROUND

The specific standard for establishing a shift emergency organization to respond to emergency events appears in 10 CFR 50.47(b)(2) which states, in part, "On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times..." 10 CFR Part 50, Appendix E, Section IV.1, requires licensee emergency plans to contain, in part, the organization for coping with radiological emergencies and the activation of the emergency organization, including individuals assigned to the licensee's ERO with a description of emergency assignments.

NUREG-0654 (Reference 1), Section II.B, "Onsite Emergency Organization," presents guidance for meeting these requirements. The guidance describes the onsite emergency organization, including the staffing requirements found in Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies." This table specifies a minimum of ten on-shift responders in four Major

Functional Areas. It also specifies seven on-shift response functions where the duties may be performed by shift personnel who are assigned other functions (i.e., there are no dedicated responders to perform these functions). Table B-1 specifies two Major Functional Areas (i.e., fire fighting and site access control/personnel accountability) which must be staffed on a site-specific basis.

The on-shift staff must be able to cope with a spectrum of events until augmenting ERO personnel arrive in accordance with the site's emergency plan commitments. The augmenting ERO responders assume many managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus more fully on plant operations. NUREG-0654 guidance recommends that there be, in addition to on-shift personnel, 30 and 60-minute responders.

On November 23, 2011, the NRC published a final rule in the Federal Register amending certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of production and utilization facilities (Reference 2). This final rule amended 10 CFR Part 50, Appendix E, Section IV.A, "Organization," to address the assignment of tasks or responsibilities to on-shift ERO personnel that could potentially overburden them and prevent the timely performance of their emergency plan functions. Specifically, Section IV.A.9 states that licensees shall perform "...a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan."

Coincident with the rule change in 10 CFR 50, Appendix E, Section IV.A.9, the NRC issued NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants" (Reference 3). This Interim Staff Guidance (ISG) provides information relevant to performing the on-shift staffing analysis. The ISG states that the Nuclear Energy Institute (NEI) developed the document NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," to establish a standard methodology for a licensee to perform the required staffing analysis, and that the NRC reviewed NEI 10-05 and found it to be an acceptable methodology for this purpose. The ISG also indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

## **4.0 TECHNICAL ANALYSIS**

### **4.1 Palisades-Specific Background Information**

The PNP SEP was originally issued in 1981. The SEP plant staffing figure, now designated as SEP Figure 5-2, was added in 1982 in Revision 1 and originally required nine on-shift responders. The SEP figure was revised in 1993 under 10 CFR 50.54(q) to add an additional on-shift responder, bringing the total number of required on-shift responders to ten. Other substantive changes to the figure were few until SEP Revision 23 (Reference 4) was issued in January of 2013 due to the On-shift Staffing Analysis (OSA) that was performed for PNP the previous year.

The OSA was performed in accordance with NEI 10-05 guidance to satisfy the requirements of 10 CFR 50, Appendix E, Section IV.A.9. This analysis examined the capability of the minimum staff listed in Figure 5-2 of the SEP to perform the key emergency response actions for events described in the ISG until augmenting ERO staff arrive. The analysis was conducted by a cross disciplinary team of corporate EP personnel and station personnel from the operations, training, radiation protection (RP), chemistry and EP departments. Additionally, personnel from engineering and security provided input to the analysis. The emergency response to each of the events described in the ISG was determined by conducting a tabletop of the event using the emergency plan and procedures and the applicable departmental procedures such as emergency and off normal operating procedures. Each scenario was reviewed by the cross disciplinary team to determine what plant actions and emergency plan implementation actions were required based on plant procedures prior to staff augmentation. These actions were then compared to the minimum staffing for emergency response implementation as described in SEP Figure 5-2, ensuring that no actions were assigned to staff members that conflicted with either their dedicated emergency response role or their dedicated operational role, as appropriate. In cases where multiple tasks were assigned to an individual, the team evaluated the timing of the tasks to ensure that they could be performed by the individual in series within any specified time requirements.

The OSA concluded that an on-shift staff of 14 is required to respond to the most limiting accident scenario, which was determined to be a main Control Room fire and plant shutdown at the remote shutdown panel. As a result, Revision 23 of the SEP added a staff member to the on-shift complement to perform offsite notifications and maintain communications with the NRC, reassigned the offsite dose assessment task to other trained personnel (e.g., a Chemistry Technician), and added the Control Room Supervisor and two additional Nuclear Plant Operators to assist in the key functional area of Plant Operations and Assessment of Operational Aspects. Through implementation of these changes, the minimum on-shift staffing level for PNP was increased from ten to fourteen. This was accomplished through the physical addition of one on-shift responder (communicator) and crediting three other personnel for the performance of emergency response functions that were already routinely provided on-shift. These changes are reflected in Attachment 2.

## **4.2 Analysis of Augmentation Response Time Extension**

The PNP OSA provides the basis for a proposed change in emergency responder augmentation time requirements from 30 to 60 minutes. Section 2.14 of NEI 10-05 states “Although developed to meet the requirements of 10 CFR 50, Appendix E, Section IV.A.9, the staffing assessment methodology may be used to evaluate proposed changes to on-shift staffing levels or augmented ERO response times. For example, an analysis could be performed with a desired response time for the augmenting ERO (e.g., 90 minutes), and the results then used to support the basis for changing a staffing or augmentation time commitment.”

PNP currently has 30-minute and 60-minute augmentation times for certain emergency response positions, as depicted in Figure 5-2 of the SEP. The OSA was conducted

assuming a 90-minute response time for these augmented ERO 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 in ERO augmentation times. The response time used for the OSA reflected the maximum number of minutes elapsed between emergency declaration and the augmented ERO position holder arriving at a location necessary to relieve an on-shift position of the emergency response task. No emergency response tasks requiring the augmented ERO were identified prior to 90 minutes following emergency declaration. The OSA indicates that on-shift personnel can satisfactorily implement all EP functions as required by regulation without augmented ERO personnel for at least 90 minutes following an emergency declaration. Therefore, the proposed change in augmentation time to 60 minutes for certain ERO response personnel with a current augmentation time of 30 minutes is bounded by the time used in the analysis.

Sections 4.2.1 through 4.2.9 below discuss the rationale for concluding that on-shift personnel can satisfactorily implement all EP functions. This information is grouped by SEP Figure 5-2 Major Functional Area. Additional information supporting the proposed change is provided in Section 4.2.10. Attachment 2 provides a summary of historical shift staffing and augmentation response time requirements, and proposed response time changes. Attachment 3 provides the revised Figure 5-2 with the proposed response time changes.

#### 4.2.1 *SEP Figure 5-2, Plant Operations and Assessment of Operational Aspects*

*SEP Figure 5-2, Major Task: N/A*

This section of SEP Figure 5-2 contains no 30 or 60-minute augmented response information. Therefore, no changes are made to this Major Functional Area in Figure 5-2.

#### 4.2.2 *SEP Figure 5-2, Emergency Director*

*SEP Figure 5-2, Major Task: N/A*

The Shift Manager is relieved of overall emergency direction and control by the Emergency Operations Facility (EOF) Director. SEP Figure 5-2 depicts the Shift Manager as the on-shift responder for this Major Functional Area. The EOF Director is shown in the figure as an augmented responder for the Major Functional Area of Radiological Accident Assessment and Support of Operational Accident Assessment (Section 4.2.4 below). No changes were made to the EOF Director's response time. No changes are made to Figure 5-2 for the Emergency Director in this Major Functional Area.

#### 4.2.3 SEP Figure 5-2, Notification/Communication

*SEP Figure 5-2, Major Task: Notify licensee, state, local, and federal personnel and maintain communication*

The current SEP requires one augmented responder within 30 minutes and two augmented responders within 60 minutes for offsite notifications and communications. The proposed SEP change would require the 30-minute responder to respond within 60 minutes, so that all three of the augmented responders would be required within 60 minutes.

The Shift Manager notifies licensee personnel. Refer to Section 4.2.4.1 below for a discussion of this task.

State, local and federal notifications - These responsibilities require notification of offsite authorities responsible for directing protective actions on behalf of the general public. Van Buren County and the State of Michigan are required to be notified within 15 minutes of the declaration of any emergency classification or change in protective action recommendation. The NRC is notified immediately following the state and local notifications and within 60 minutes of the emergency declaration. For purposes of the OSA, NRC notifications were treated as a continuous action in accordance with 10 CFR 50.72(c)(3), meaning that once the initial NRC communications are established, it was assumed that the NRC will request an open line to be continuously maintained with the NRC operations center. The use of dedicated phone circuits and wireless headsets enables these notifications to be performed by the same on-shift communicator who performs the state and county notifications.

As a result of the OSA, Revision 23 of the SEP added one individual to the on-shift staffing complement to perform the offsite communications tasks. Because of the addition of the on-shift communicator to the minimum on-shift staffing, the OSA results indicate that all required communications functions can be completed without additional augmented personnel within the 90-minute time frame used in the analysis.

The addition of an emergency communicator to the on-shift staff obviated the need for augmented personnel to respond within 30 minutes for notifications and communications. The additional on-shift communicator is a dedicated emergency response function. This means that for all declared emergency events, the on-shift emergency communicator does not have any duties other than providing timely and accurate communications to offsite response agencies. The ability of the on-shift staff to perform these notification and communications functions is ensured by the addition of a communicator assigned to this Major Functional Area.

#### 4.2.4 *SEP Figure 5-2, Radiological Accident Assessment and Support of Operational Accident Assessment*

##### 4.2.4.1 *SEP Figure 5-2, Major Task: EOF Director*

The current SEP requires the EOF Director to respond within 60 minutes.

No changes are proposed for the response time for the EOF Director.

An analysis is provided below for the Shift Manager duties as they were reviewed in the OSA and relate to ERO and offsite notifications.

The Shift Manager is responsible for the overall assessment of emergency conditions. The Shift Manager has the overall responsibility for operational decisions involving the safety of the plant and its personnel, and for making protective action recommendations for the public during an emergency situation. The Shift Manager will also implement the SEP through the use of specific Emergency Plan Implementing Procedures. Shift Managers are trained in these activities as part of their annual requalification training and are required to demonstrate competence in these areas during simulator training sessions and emergency drills. The Shift Technical Advisor (STA) is also trained in these activities and provides peer checking for the Shift Manager.

Licensee notifications - The Shift Manager is normally assigned the responsibility for making selected event notifications, such as calls to the Duty Plant Manager, Operations Manager, and NRC Resident Inspector. These notifications are communications that are approximately one minute in length and determined by the OSA to be acceptable tasks for the Shift Manager. In addition, the Shift Manager is assigned the task of notifying the off-shift ERO of the emergency. The OSA determined that the Shift Manager could perform the concurrent tasks of maintaining emergency direction and control while notifying the ERO of the event using the computerized ERO notification system.

The OSA determined that the Shift Manager and STA were responsible for performing offsite notifications for some analyzed events, resulting in tasks that are concurrent with their primary emergency response tasks. Revision 23 of the SEP added an additional staff member to the minimum on-shift staffing complement to relieve the Shift Manager and/or STA of the concurrent task to perform these offsite communications.

##### 4.2.4.2 *SEP Figure 5-2, Major Task: Offsite Dose Assessment*

The current SEP requires one augmented responder within 30 minutes to perform offsite dose assessment. The proposed SEP revision requires one augmented responder within 60 minutes to perform the offsite dose assessment.

The OSA determined that the on-shift Chemistry Technician is not required to perform any chemistry/radiochemistry sampling within the first 90 minutes of any of the analyzed events. As noted in SEP Figure 5-2, Major Functional Area Protective Actions (In-Plant), other shift personnel (e.g., the Chemistry

Technician), may also be required to support the on-shift RP Technician in the implementation of specific tasks related to that functional area. These specific tasks consist of access control, RP coverage, personnel monitoring, and dosimetry. While the capability to perform these tasks is specified in the SEP, the OSA did not identify the need to utilize the on-shift Chemistry Technician to perform any of these RP-related tasks. It is therefore acceptable to assign to the Chemistry Technician the SEP function of dose assessment. As a result of the OSA, Revision 23 of the SEP reassigned the task of offsite dose assessment from the Shift Manager to other on-shift personnel (e.g., the Chemistry Technician).

The on-shift Chemistry Technician can readily perform offsite dose assessment calculations. All Chemistry Technicians assigned on-shift are trained to perform offsite dose assessment calculations. One trained individual can rapidly perform these calculations with a computerized Control Room dose assessment program using effluent radiation monitor readings and meteorological indications, both available in the Control Room. Backup methodologies for inputs are provided should these indications fail or otherwise not be available.

The OSA concluded that because of the reassignment of the offsite dose assessment task to other on-shift personnel, which was implemented in SEP Revision 23, the on-shift staff is able to perform the required dose assessment tasks without additional augmented personnel in the 90-minute time frame used in the analysis.

The reassignment of offsite dose assessment activities from the Shift Manager to other on-shift personnel supports the change in response time for the augmented offsite dose assessor from 30 to 60 minutes. No competing sampling activities for the on-shift Chemistry Technician were identified within the 90-minute period assumed in the OSA, which also supports the change in augmented responder time. In addition, monitoring of installed radiological plant instrumentation is sufficient to support offsite dose assessment activities until augmented personnel arrive.

#### 4.2.4.3 *SEP Figure 5-2, Major Task: Offsite Surveys*

The current SEP requires two augmented responders within 30 minutes and two augmented responders within 60 minutes to perform offsite radiological surveys. The proposed SEP revision requires all four of these responders within 60 minutes.

The change in response time for offsite radiological survey responders is acceptable based on the on-shift capability to perform onsite surveys and the fact that there is no need to perform these surveys within the first 90 minutes of the event because of the use of installed post-accident effluent radiation monitors. Onsite surveys or installed post-accident effluent radiation monitors provide rapid indication of a release of radioactive materials and can be used for offsite dose assessment calculation purposes. Offsite surveys are not needed during the initial stages of an event because expected release pathways are monitored release points. During the initial 90 minutes of an accident, in-plant radiation

monitoring instrumentation would be used because radiological release instrument data is easily obtained.

The OSA determined that there are no time critical RP or chemistry tasks within the 90-minute time frame of the analysis. In addition, during the event analyzed in the OSA that included an offsite radiological release, the on-shift staff was capable of performing dose calculations with a computerized Control Room dose assessment program using effluent radiation monitor readings and meteorological indications without the use of offsite surveys.

Offsite radiological monitoring tasks, such as soil, water and vegetation sampling, or retrieval of environmental dosimetry, such as thermoluminescent dosimeters, can be performed as additional personnel arrive up to their required 60-minute response time. These radiological survey tasks are considered in the recovery phase, following a release of radioactive material, and are not needed for the immediate protection of the public health and safety.

The additional response time for two offsite survey responders moving from 30 minutes to 60 minutes is supported by the use of in-plant instrumentation, installed monitoring capability and in-plant and onsite surveys to support offsite dose assessment. The use of other on-shift personnel, such as the Chemistry Technician, as a dedicated on-shift dose assessor facilitates the monitoring and use of installed instrumentation for this purpose. Also supporting the response time change are the OSA results that identified no overlapping duties for the on-shift RP and Chemistry Technicians. In addition, radiological monitoring of installed plant instrumentation is sufficient to perform offsite dose assessment activities until augmented personnel arrive. Offsite radiological monitoring tasks, such as soil, water and vegetation sampling, or retrieval of environmental dosimetry, such as thermoluminescent dosimeters, can be performed as additional personnel arrive up to their required 60-minute response time.

#### 4.2.4.4 *SEP Figure 5-2, Major Task: Onsite (Out-of-Plant) and In-Plant Surveys*

The current SEP requires two augmented responders within 30 minutes and two augmented responders within 60 minutes to perform onsite and in-plant radiological surveys. The proposed SEP revision requires four augmented responders within 60 minutes to perform onsite and in-plant radiological surveys. Note that this section groups together the onsite (out-of-plant) and in-plant survey Major Tasks for clarity of discussion.

In-plant radiological monitoring instrumentation provides a means by which radiological conditions can be determined during an emergency, thereby reducing the need to send RP personnel into the plant to obtain radiological data. The radiological monitoring system ensures that both RP and ERO members are kept informed of current and changing radiological conditions. In-plant radiological instrumentation provides a continuous radiological status of the rooms monitored and provides local and remote alarming capability. Avoiding the dispatch of RP personnel to survey areas unnecessarily by use of the in-plant area radiation monitors (ARMs) satisfies the requirements of 10 CFR 20.1101(b)

because occupational radiation exposure is kept as low as reasonably achievable.

The RP and chemistry tasks reviewed in the OSA were those directed by the Shift Manager to support actions in off normal procedures, emergency operating procedures, and emergency implementing procedures. The RP Technician reports to the Control Room to provide RP support (including in-plant and out of plant surveys) as directed by the Shift Manager. The OSA determined there are no time critical RP and chemistry tasks and that task performance is directed and prioritized by the Shift Manager. No chemistry samples are required by Technical Specifications within the 90-minute period after an emergency declaration. There are no overlapping RP or chemistry tasks. The use of in-plant radiological monitoring instrumentation to determine the radiological conditions in onsite and in-plant areas supports the change in response times.

#### 4.2.4.5 *SEP Figure 5-2, Major Task: Chemistry/Radiochemistry*

The current SEP requires one chemistry/radiochemistry responder within 60 minutes.

No changes are made to the response time for the augmented chemistry/radiochemistry responder.

#### 4.2.5 *SEP Figure 5-2, Plant System Engineering, Repair, and Corrective Actions*

##### 4.2.5.1 *SEP Figure 5-2, Major Task: Technical Support*

The current SEP requires one augmented responder within 30 minutes for the core/thermal hydraulics technical support area. The proposed SEP revision requires one augmented responder within 60 minutes for this technical support area.

The Shift Engineer/Shift Technical Advisor (STA) functions in an oversight role for accident assessment and evaluation of operating conditions, providing the core/thermal hydraulic technical support function on-shift. As stated in Section 4.2.4.1 above, the OSA resulted in the elimination of concurrent offsite communications tasks for the STA with the addition of personnel to the on-shift staffing complement and the reassignment of these communications duties to the additional staff. The elimination of this communications collateral duty allows the STA to perform assigned technical support activities required by operating procedures, Technical Specifications, and emergency implementing procedures without responding augmented personnel in the 90-minute time frame used in the analysis. The addition of on-shift staff and reassignment of emergency response communications tasks obviates the need for a 30-minute responder for the core/thermal hydraulic technical support function.

The current SEP requires one Electrical Engineer and one Mechanical Engineer to respond within 60 minutes to support system engineering activities.

No changes are made to the response times for the augmented Electrical and Mechanical Engineers.

#### 4.2.5.2 *SEP Figure 5-2, Major Task: Repair and Corrective Actions*

The current Emergency Plan requires one Electrician and one Instrument and Control (I&C) Technician to respond within 30 minutes, and one Mechanic, one Radwaste Operator, and one Electrician to respond within 60 minutes, to perform repair and corrective action tasks.

The proposed SEP revision requires two Electricians, one I&C Technician, one Mechanic, and one Radwaste Operator to respond within 60 minutes.

The OSA defines repair and corrective action as: “An action that can be performed promptly to restore a nonfunctional component to functional status (e.g., resetting a breaker), or to place a component in a desired configuration (e.g., open a valve), and which does not require work planning or implementation of lockout/tagout controls to complete.”

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 through plant manipulations and system alignments. The on-shift Nuclear Plant Operators have the necessary expertise and training to perform troubleshooting and minor repairs during plant operations. The Nuclear Plant Operators would be available to satisfy any minor troubleshooting and repair activities that might be needed.

NUREG-0654, Table B-1, indicates that repair and corrective action tasks may be performed by qualified shift personnel assigned other emergency response functions/tasks. PNP Nuclear Plant Operators are trained to perform the actions associated with the repair and corrective action functional area. In addition, repair and corrective action is an acceptable collateral duty in accordance with the guidance in NEI 10-05.

Actions (e.g., resetting breakers and valve manipulation) directed by the Control Room Supervisor to mitigate the event in accordance with procedures were performed by the Nuclear Plant Operators in the OSA without augmented response personnel for the 90-minute time frame of the analysis. The addition of two Nuclear Plant Operators to the on-shift staffing complement as a result of the OSA supports the response time change for two 30-minute repair and corrective action responders to 60 minutes.

#### 4.2.6 *SEP Figure 5-2, Protective Actions (In-Plant)*

The current SEP requires two augmented responders within 30 minutes and two augmented responders within 60 minutes to perform in-plant radiation protection tasks. The proposed SEP requires four augmented responders within 60 minutes to perform in-plant radiation protection tasks.

##### 4.2.6.1 *SEP Figure 5-2, Major Task: Radiation Protection – Access Control/Personnel Monitoring (items a and c)*

In the 1982 SEP, radiological access control was a labor intensive task. Dedicated RP Technicians were required to check dose margins, training

qualifications, and to ensure workers had read and understood their radiation work permit. Worker access control is now automated because radiation protection work processes have been computerized. Radiation work permit access control and electronic dosimeter computer systems work together to provide a fully integrated system allowing workers to sign-in on their radiation work permit and to self-issue electronic dosimeters. Both systems have been used by plant workers for several years. Worker dose margins and training qualifications are also automatically verified when the radiation work permit access control system is used. If a worker's dose margin is inadequate or training is expired, the worker's access would be precluded and the access control system would not allow issuance of an electronic dosimeter. During the log-in process, workers acknowledge their electronic dosimeter alarm setpoints and that they have read and understand their radiation work permit. The electronic dosimeter provides the worker with a continuous status of dose received and work area dose rates, and will alarm at preset dose and dose rate alarms. Worker use of electronic dosimeters facilitates more efficient use of RP Technicians to provide RP coverage while preserving the ALARA concept. Access control is maintained because the worker must obtain an electronic dosimeter and enter a radiation work permit number into the access control computer system prior to being allowed access into the Controlled Access Area (CAA). No setup is required for the radiation work permit access control computers, which allows RP Technicians to be used for more critical tasks during emergency response. Personnel are required to self-monitor for radioactive contamination whenever they exit any CAA. No RP involvement is necessary for this contamination monitoring activity because workers are trained to perform this task without supervision or oversight. Changing the response time for two RP Technicians from 30 minutes to 60 minutes is supported by current access control and personnel monitoring processes and equipment.

#### 4.2.6.2 *SEP Figure 5-2, Major Task: Radiation Protection – RP Coverage (item b)*

RP coverage will only be performed if the radiological status of a room is unknown and there is a definitive need for emergency workers to enter the room to perform a task. The decision to provide RP coverage may be based on plant radiological conditions as indicated by installed area radiation monitors (ARMs). During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, RP coverage would not be required for all areas. If RP coverage is deemed necessary, multiple emergency teams can be covered by the on-shift RP Technician. In addition to the coverage provided by the RP staff, Chemistry personnel are trained in the use of some portable radiation survey instruments so that certain on-shift functions can be performed without the assistance of RP Technicians. If RP coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate setpoints) and because of the installed ARMs (which alarm locally and remotely at preset dose rates) located throughout the plant. Changing the response time for two RP Technicians from 30 minutes to 60 minutes is supported by current RP coverage processes and equipment.

#### 4.2.6.3 *SEP Figure 5-2, Major Task: Radiation Protection – Dosimetry (item d)*

In the 1982 SEP, dosimetry issuance was a manual process requiring RP Technicians to zero and issue dosimeters, verify worker training, and verify and track radiation dose margins. As addressed in the Access Control/Personnel Monitoring Section above, access control computers are now used for issue of electronic dosimetry with alarming capability. Battery-powered electronic dosimeters are available as a backup. Worker self-issuance of electronic dosimeters has eliminated the need for RP Technicians to physically issue dosimetry with the exception of any tasks that require specialized dosimetry and/or special body placement of the dosimetry. These types of tasks are not expected in the initial stages of an event, but during the recovery phase.

The OSA determined there are no time critical RP or chemistry tasks, and that task performance is directed and prioritized by the Shift Manager for the 90-minute time frame used in the analysis. There are no overlapping RP or chemistry tasks. RP tasks were able to be performed without augmented personnel in the 90-minute time frame used in the analysis.

Changing the response time for two RP Technicians from 30 minutes to 60 minutes is supported by the OSA results and by dosimetry issue processes and equipment, including the use of installed plant instrumentation and electronic alarming dosimetry.

#### 4.2.7 *SEP Figure 5-2, Fire Fighting*

*SEP Figure 5-2, Major Task: N/A*

This section of SEP Figure 5-2 contains no 30 or 60-minute augmented response information other than a reference to local support for these activities. The reference to local support does not indicate an associated response time as it would for PNP response personnel. No changes are made to this Figure 5-2 Major Functional Area.

#### 4.2.8 *SEP Figure 5-2, Rescue Operations and First Aid*

*SEP Figure 5-2, Major Task: N/A*

This section of SEP Figure 5-2 contains no 30 or 60-minute augmented response information other than a reference to local support for these activities. The reference to local support does not indicate an associated response time as it would for PNP response personnel. No changes are made to this Figure 5-2 Major Functional Area.

#### 4.2.9 *SEP Figure 5-2, Site Access Control and Personnel*

*SEP Figure 5-2, Major Task: Security, fire fighting communications, personnel accountability*

This section of SEP Figure 5-2 contains no 30 or 60-minute augmented response information. No changes are made to this Figure 5-2 Major Functional Area.

#### 4.2.10 *Additional Information*

1. Regulatory Minimum On-Shift Staffing Levels - The regulatory standard for ERO on-shift staffing is documented in NUREG-0654. The total minimum on-shift staffing expressed in NUREG-0654, Table B-1, is ten personnel. The minimum level of staffing for the PNP on-shift organization of fourteen personnel is above the minimum regulatory standard considered necessary for the performance of accident assessment and mitigation functions. In the 1982 SEP, the on-shift staffing and augmentation requirements indicate a minimum on-shift staffing of nine staff members. This was changed to ten staff members in 1993. As a result of the OSA in 2012, the SEP was revised to add an additional staff member to the normal on-shift complement to perform offsite notifications and maintain communications with the NRC, reassigned the offsite dose assessment task to other personnel, and added the Control Room Supervisor and two additional Nuclear Plant Operators to the SEP Figure 5-2 committed staff to assist in the key functional area of plant operations and assessment of operational aspects. Through implementation of these changes, the minimum on-shift staffing level is now at 14, exceeding the regulatory minimum number expressed in NUREG-0654 by four persons.
2. Emergency Operations Facility Activation/Operational Requirement - NUREG-0654 requires the EOF to be activated and become operational at a Site Area or General Emergency classification. The activation of this facility is optional for the Unusual Event and Alert classifications. The 1982 SEP directly reflects this NUREG-0654 EOF criteria. In this circumstance, the EOF may not be activated and operational until after the declaration of a Site Area Emergency for an event that progresses from an Unusual Event or Alert. The SEP now requires the EOF to be activated and become operational at an Alert. This earlier staffing, activation and operational status of the EOF supports the change to 60-minute augmentation times for 30-minute augmented emergency responders because it allows for earlier transfer of functions from the Control Room than what would occur under the regulatory guidance in NUREG-0654.
3. Elimination of "Approximate" Times - The augmentation response times of 30 and 60 minutes are treated in the current revision of the SEP as "approximate" times. The term "approximate" is undefined and may be subject to individual interpretation by emergency responders. The proposed consolidated 60-minute response time for all augmented positions is treated as a required time in the proposed SEP revision and is no longer treated as approximate. Certain ERO augmented response positions are required to be filled within 60 minutes with no allowed exception.
4. Requirement to Respond as Quickly as Possible - Emergency response personnel are required to respond as quickly as possible to an emergency event. This requirement, although currently existing as a management expectation not expressed specifically in SEP Figure 5-2, is added in the proposed Figure 5-2 (see Attachment 3) along with the change in response time for 30-minute augmented positions. The 60-minute response time

represents a maximum allowable time for response. It is therefore expected that response to augment the shift staff would result in personnel arriving at earlier times up to the maximum 60 minutes. This is evident in the documented response to periodic call-in tests and unannounced drills requiring actual response to the site during off-hours periods.

5. Use of ERO Callout at Any Time – In the proposed revision to the SEP, the Shift Manager may call out designated ERO members or the full ERO complement at any time in an emergency event regardless of classification. Although currently existing as a management expectation not expressed specifically in SEP Figure 5-2, this expectation is now discussed in the proposed Figure 5-2 (see Attachment 3) along with the change to a 60-minute response time for 30-minute augmented positions.
6. Use of “All-Call” – ERO personnel are trained with the expectation that, even when they are not on duty, they are to respond to an emergency call out when they are fit for duty and otherwise available for timely response. This requirement can and does (as demonstrated during periodic testing) lead to multiple personnel filling an augmented response position with the potential for some responders to be able to respond more quickly than the individual that is on duty at the time. This “all call” response expectation ensures not only a timely response for augmentation, but provides for more than a minimum quantity of responders that can remove burden from the Control Room staff. This expectation is now discussed in the proposed Figure 5-2 (see Attachment 3).
7. Offsite Stakeholder Concurrence – The proposed change to the SEP to extend the response times for 30-minute augmented emergency response positions to 60 minutes was reviewed with the State of Michigan, and the state provided a letter indicating that they are satisfied that they understand the changes and that they have no remaining questions (Reference 5).
8. Emergency Response Facility Activation – The proposed change to the SEP to extend the response times for 30-minute augmented emergency response positions to 60 minutes results in no change to the required Technical Support Center (TSC), Operations Support Center, and EOF facility activation times of “approximately 60 minutes.”
9. Implementation of Severe Accident Management Guidelines (SAMGs) – SAMGs are implemented by the TSC at PNP. The implementation of SAMGs is not impacted by the proposed change to the SEP to extend the response times for 30-minute augmented emergency response positions to 60 minutes because the time requirements for activating the TSC and taking it to operational status are unchanged.
10. Operator Training – Training is used to strategically drive improved performance at PNP. Since the 1982 SEP, the Systematic Approach to Training (SAT) has resulted in developing a task list for operations personnel. The SAT process ensures training is conducted to industry-accepted standards, and has led to accreditation of the PNP Licensed Operator Requalification program by the National Academy for Nuclear Training.

A dynamic simulator is routinely used during operator training. Simulator scenarios are designed to be realistic and reflect a wide range of plant conditions, including emergency conditions. Each crew is evaluated for NRC performance indicators related to SEP risk significant activities, such as emergency classification, initial notifications, and protective action recommendations. The crew performs critical functions, such as classification, core damage assessment, accident mitigation, response prioritization, and communications without augmentation from additional responders.

The proficiency of the Control Room staff to perform these functions without additional support is assessed in every training cycle.

#### 11. Shift Technical Advisor Training

The Shift Technical Advisor (STA) was originally trained as an advisor to the Control Room operating shift per NUREG-0737 "Clarification of TMI Action Plan Requirements." In 1990, additional guidelines were developed by the Institute of Nuclear Plant Operations (INPO) for the training of STAs. This is detailed in the guidance document INPO 90-003, "Guidelines for the Training and Qualification of Shift Technical Advisors." The STA performs independent assessments of plant operating concerns, technical support, appropriate corrective actions, analysis of events and their effects, effectiveness of response(s) to emergent conditions, classifications of emergencies, protection of the public, and any other actions related to critical safety functions and plant safety during abnormal and emergency situations. They also contribute to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the STA can focus on preventative actions in order to mitigate the consequences of an accident.

### **4.3 Summary**

The 1982 version of the SEP provided for a minimum on-shift staffing level of nine, and staff augmentation capability of eleven 30-minute responders and fifteen 60-minute responders. The basis for this combination of on-shift staffing level and augmented response capability was NUREG-0654, Table B-1. The SEP was revised in 1993 under 10 CFR 50.54(q) to add an additional on-shift responder, bringing the total number of required on-shift responders to ten. As depicted in Attachment 2, few other substantive changes were made in this emergency response area under 10 CFR 50.54(q) between the 1982 version of the SEP and SEP Revision 23 in January 2013, although numerous other process and technology improvements were implemented over the same period.

ENO completed an OSA to satisfy the requirements of 10 CFR 50, Appendix E, Section IV.A.9. The OSA was performed using the guidance in NEI 10-05, which has been reviewed by the NRC and found to be an acceptable methodology to satisfy the regulatory requirement. As a result of the OSA, in SEP Revision 23, the minimum on-shift staffing level was increased from ten to fourteen in Figure 5-2. The OSA was conducted assuming a response time of 90 minutes for the augmented ERO to allow the use of this analysis for a possible future extension in ERO augmentation times as addressed in Section 2.14 of NEI 10-05. No specific emergency response tasks

requiring the augmented ERO were identified prior to the 90-minute period used in the OSA following the emergency declaration.

The information contained in this document supports a proposed change that retains the capability and total numbers of augmented responders, but changes the maximum required response time from 30 minutes to 60 minutes for eleven responders based on the OSA. The revised maximum response time of 60 minutes for these responders is bounded by the 90-minute period used in the OSA. The following elements from the OSA support the proposed response time change:

1. The OSA demonstrated that no augmented ERO staff is required within 90 minutes of the declaration of an emergency. This provides an analyzed and documented basis for the proposed combination of staff and response times in the proposed revision to SEP Figure 5-2.
2. Changes in the on-shift organization, such as the addition of staff and reassignment of key on-shift emergency response functions, provide assurance of emergency response without competing or conflicting duties
3. Other elements noted in this document, such as early staffing of the EOF and the expectation that ERO personnel respond as soon as possible regardless of their allowed maximum response time, improve the full augmented response capability.

## **5.0 REGULATORY ANALYSIS**

### **5.1 Applicable Regulatory Requirements/Criteria**

The regulatory standards, requirements and guidance involving ERO staffing and augmentation are as follows:

10CFR50.47(b)(1) states, "Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis."

10CFR50.47(b)(2) states, "On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified."

NRC Regulatory Guide 1.101, Emergency Response Planning and Preparedness for Nuclear Power Reactors," revision 4, section C, stated in part "The criteria and recommendations in Revision 1 of NUREG-0654/FEMA-REP-1, 'Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (November 1980),' are methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47 that must be met in onsite

and offsite emergency response plans. These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans and improve emergency preparedness."

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 on-site 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 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."

Regulatory Guide 1.219, "Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors," November 2011, describes a method that the NRC considers to be acceptable to implement the requirements in 10 CFR 50.54(q). In Section 2.a.(1), the NRC encourages licensees to arrange a conference call with the NRC staff to clarify 10 CFR 50.54(q) requirements and guidance within this regulatory guide for EP changes that increase the activation time of emergency response facilities.

ENO completed and issued an OSA to satisfy the requirements in 10 CFR 50, Appendix E, Section IV.A.9 and standards in 10 CFR 50.47(b)(2). The OSA was performed using the guidance in NEI 10-05, which has been reviewed by the NRC and found to be an acceptable methodology to satisfy the regulatory requirement. As a result of the OSA, Revision 23 of the SEP increased the minimum on-shift staffing level to fourteen. The OSA was conducted assuming a response time of 90 minutes for the augmented ERO to allow the use of this analysis for a possible future extension in ERO augmentation times as addressed in Section 2.14 of NEI 10-05. No specific emergency response tasks requiring the augmented ERO were identified in the OSA prior to the 90-minute period following the emergency declaration.

This proposed change to the SEP revises the maximum required response time from 30 minutes to 60 minutes for eleven responders. The revised maximum response time of 60 minutes is bounded by the 90-minute period used in the OSA. The OSA demonstrated that no augmented ERO staff is required within 90 minutes of the declaration of an emergency. Changes in the on-shift organization, such as the addition of staff and reassignment of key on-shift emergency response functions, provide assurance of emergency response without competing or conflicting duties. Lastly, the early staffing of the EOF and the expectation that ERO personnel respond as soon as possible regardless of their allowed maximum response time, improve the full augmented response capability.

Based on the considerations above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will continue to be conducted in accordance with the site licensing basis, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

In conclusion, ENO has determined that the proposed change does not require any exemptions or relief from regulatory requirements, and does not affect conformance with any regulatory requirements or criteria.

## 5.2 No Significant Hazards Consideration

Entergy Nuclear Operations, Inc. (ENO) is proposing a license amendment to the Palisades Nuclear Plant Site Emergency Plan (SEP). The proposed amendment would increase the Emergency Response Organization positions with 30-minute staff augmentation response times to 60-minute response times.

ENO has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed extension of staff augmentation times has no effect on normal plant operation or on any accident initiator. The change affects the response to radiological emergencies under the Palisades Nuclear Plant SEP. The ability of the emergency response organization to respond adequately to radiological emergencies has been evaluated. Changes in the on-shift organization, such as the addition of staff and reassignment of key on-shift emergency response functions, provide assurance of emergency response without competing or conflicting duties. An analysis was also performed on the effect of the proposed change on the timeliness of performing major tasks for the major functional areas of the SEP. The analysis concluded that extension of staff augmentation times would not significantly affect the ability to perform the required tasks.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change affects the required response times for supplementing onsite personnel in response to a radiological emergency. It has been evaluated

and determined not to significantly affect the ability to perform that function. It has no effect on the plant design or on the normal operation of the plant and does not affect how the plant is physically operated under emergency conditions. The extension of staff augmentation times in the SEP does not affect the plant operating procedures which are performed by plant staff during all plant conditions.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change does not affect plant design or method of operation. 10 CFR 50.47 (b) and 10 CFR 50 Appendix E establish emergency planning standards and requirements that require adequate staffing, satisfactory performance of key functional areas and critical tasks, and timely augmentation of the response capability. Since the SEP was originally developed, there have been improvements in the technology used to support the SEP functions and in the capabilities of onsite personnel. A functional analysis was performed on the effect of the proposed change on the timeliness of performing major tasks for the functional areas of SEP. The analysis concluded that an increase in staff augmentation times would not significantly affect the ability to perform the required SEP tasks. Thus, the proposed change has been determined not to adversely affect the ability to meet the emergency planning standards as described in 10 CFR 50.47 (b) and requirements in 10 CFR 50 Appendix E.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, ENO concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

### 5.3 Environmental Considerations

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## **6.0 PRECEDENCE**

This request is similar in nature to the license amendment authorized by the NRC on September 23, 2011, for the Fermi 2 facility (TAC No. ME4761, ADAMS Accession Number ML112450464).

## **7.0 REFERENCES**

1. NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, published November 1980.
2. Federal Register Volume 76, Number 226, Wednesday, November 23, 2011, Rules and Regulations, "Enhancements to Emergency Preparedness Regulations; Final Rule."
3. NSIR/DPR-ISG-01, "Interim Staff Guidance – Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ADAMS Accession Number ML113010523).
4. Letter from ENO to NRC, PNP 2013-007, "Emergency Plan, Revision 23," January 22, 2013.
5. Letter from A. P. Katarsky, Assistance Commander, Emergency Management and Homeland Security Division, State of Michigan, to D. G. Malone, Emergency Planning Manager, Entergy – Palisades Nuclear Plant, June 6, 2013.

## **ATTACHMENT 2**

### **Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes**

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

This table summarizes Site Emergency Plan (SEP) requirements for on-shift staffing and augmentation response times (1) in the 1982 version of the SEP (Revision 1), (2) in the current SEP (Revision 23, issued January 2013), and (3) in the proposed SEP changes in the license amendment request (LAR).

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS                  | POSITION TITLE OR EXPERTISE                  | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |        | COMMENTS  |
|--|--|--|---|--------|---|
|  |  |  | 30 Min  | 60 Min |   |
| Plant Operations and Assessment of Operational Aspects | Shift Engineer/Shift Technical Advisor (SRO) | 1 / 1 / 1                              | --  | --     | CURRENT (2013) SEP: The On-shift Assessment (OSA) resulted in the addition of the Control Room Supervisor and two Nuclear Plant Operators to the SEP required shift staffing levels in Revision 23 of the SEP. The SEP previously required four Nuclear Plant Operators because of historical changes that occurred between 1982 and 2013.<br><br>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.<br><br>(Refer to Section 4.2.1 of Attachment 1) |
|  | Shift Manager (SRO)                          | 1 / 1 / 1                              | --  | --     |   |
|  | Control Room Supervisor (SRO)                | 0 / 1 / 1                              | --  | --     |   |
|  | Control Room Operators                       | 2 / 2 / 2                              | --  | --     |   |
|  | Nuclear Plant Operators                      | 2 / 6 / 6                              | --  | --     |   |
| Emergency Director                                     | Shift Manager                                | 1* / 1* / 1*                           | --  | --     | CURRENT (2013) SEP: The OSA resulted in the removal of concurrent and conflicting duties from the Shift Manager. The Shift Manager is relieved by the EOF Director. The OSA did not result in any changes to the Emergency Director Major Functional Area.<br><br>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.<br><br>(Refer to Section 4.2.2 of Attachment 1)   |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS  | POSITION TITLE OR EXPERTISE | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |           | COMMENTS  |
|--|-----------------------------|--|---|-----------|---|
|  |                             |  | 30 Min  | 60 Min    |   |
| <p>Notification/<br/>Communication</p> <p>- Notify licensee, state, local, and federal personnel and maintain communication</p>              |                             | 1 / 1 / 1                              | 1 / 1 / 0   | 2 / 2 / 3 | <p>CURRENT (2013) SEP: The OSA resulted in the addition of a dedicated on-shift emergency communicator with no other emergency response assigned activities. This was previously performed by a dedicated Plant Technical Engineer or Auxiliary Operator.</p> <p>LAR PROPOSED CHANGES: The LAR proposes to change the response time for one 30-minute communications responder from 30 minutes to 60 minutes. The reassignment of the on-shift notification/communication task from an emergency responder that may have other duties to a dedicated (for emergency response) communicator supports the response time change for the 30-minute augmented responder to 60 minutes.</p> <p>(Refer to Section 4.2.3 of Attachment 1)</p> |
| <p>Radiological Accident Assessment and Support of Operational Accident Assessment</p> <p>- Emergency Operations Facility (EOF) Director</p> | Senior Manager              | --                                     | 0 / 0 / 0   | 1 / 1 / 1 | <p>The EOF Director relieves the Shift Manager of the senior manager function for emergency response.</p> <p>CURRENT (2013) SEP: Concurrent and conflicting duties, including offsite dose assessment, were removed from the Shift Manager as a result of the OSA. This did not result in changes to Figure 5-2 in the Radiological Accident Assessment and Support of Operational Accident Assessment Major Functional Area.</p> <p>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.</p> <p>(Refer to Section 4.2.4.1 of Attachment 1)</p>  |

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS  | POSITION TITLE OR EXPERTISE                | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |           | COMMENTS   |
|--|--|--|---|-----------|--|
|  |  |  | 30 Min  | 60 Min    |  |
| Radiological Accident Assessment and Support of Operational Accident Assessment<br><br>- Offsite Dose Assessment | Senior Radiation Protection (RP) Expertise | 0 / 1* / 1*                            | 1 / 1 / 0   | 0 / 0 / 1 | <p>CURRENT (2013) SEP: The OSA resulted in the reassignment of the offsite dose assessment function from the Shift Manager to other on-shift personnel (e.g., the Chemistry Technician). The on-shift offsite dose assessment function was not previously described in the 1982 version of SEP Figure 5-2 or other SEP revisions prior to the 2013 change, but was described in the Implementing Procedures.</p> <p>LAR PROPOSED CHANGES: The LAR proposes to change the response time for the 30-minute offsite dose assessor from 30 minutes to 60 minutes. The OSA-related reassignment of the offsite dose assessment function, and other considerations, supports the response time change for the augmented responder.</p> <p>(Refer to Section 4.2.4.2 of Attachment 1)</p> |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS  | POSITION TITLE OR EXPERTISE                                   | ON SHIFT STAFFING<br>1982 / 2013 / LAR                               | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |  | COMMENTS   |
|--|---|--|---|--|--|
|  |   |  | 30 Min  | 60 Min   |  |
| Radiological Accident Assessment and Support of Operational Accident Assessment<br><br>- Offsite Surveys<br><br>- Onsite (Out-of-Plant)<br><br>- In-Plant Surveys<br><br>- Chemistry/ Radiochemistry | Radiation Protection Technicians<br><br>Chemistry Technicians | <br><br>0 / 0 / 0<br><br>0 / 0 / 0<br><br>1 / 1 / 1<br><br>1 / 1 / 1 | <br><br>2 / 2 / 0<br><br>1 / 1 / 0<br><br>1 / 1 / 0<br><br>0 / 0 / 0              | <br><br>2 / 2 / 4<br><br>1 / 1 / 2<br><br>1 / 1 / 2<br><br>1 / 1 / 1 | CURRENT (2013) SEP: The OSA did not result in any changes to Figure 5-2 in the Radiological Accident Assessment and Support of Operational Accident Assessment Major Functional Area.<br><br>LAR PROPOSED CHANGES: The LAR proposes to change the response times for two 30-minute offsite survey responders, one 30-minute onsite (out-of-plant) survey responder and one in-plant survey responder from 30 minutes to 60 minutes. The Chemistry Technician response time of 60 minutes is unchanged. Installed instrumentation, dedicated on-shift dose assessor and ability to perform onsite surveys with on-shift personnel support the change in response time for four 30-minute Rad Protection responders to 60 minutes. The OSA identified no time critical RP or Chemistry tasks for the 90-minute period used in the analysis. The Shift Manager prioritizes tasks for the on-shift RP and Chemistry Technicians.<br><br>(Refer to Sections 4.2.4.3, 4.2.4.4 and 4.2.4.5 of Attachment 1) |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS   | POSITION TITLE OR EXPERTISE | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |           | COMMENTS   |
|---|-----------------------------|--|---|-----------|--|
|   |                             |  | 30 Min  | 60 Min    |  |
| Plant System Engineering, Repair, and Corrective Actions<br><br>- Technical Support | Core/Thermal Hydraulics     | 1* / 1* / 1*                           | 1 / 1 / 0   | 0 / 0 / 1 | <p>CURRENT (2013) SEP: The OSA resulted in the removal of concurrent and conflicting duties from the on-shift STA. The OSA did not result in any changes to Figure 5-2 in the Plant System Engineering, Repair, and Corrective Actions Major Functional Area for the Technical Support Major Task.</p> <p>LAR PROPOSED CHANGES: The LAR proposes to change the response time for the core/thermal hydraulics augmented responder from 30 to 60 minutes. Additional shift staffing and reassignment of tasks support the change in response time. The timing of the technical support role following an event is also considered. The augmented Electrical and Mechanical Engineer response times are unchanged.</p> <p>(Refer to Sections 4.2.5.1 and 4.2.5.2 of Attachment 1)</p> |
|   | Electrical                  | --                                     | --  | 1 / 1 / 1 |  |
|   | Mechanical                  | --                                     | --  | 1 / 1 / 1 |  |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS   | POSITION TITLE OR EXPERTISE             | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |           | COMMENTS   |
|---|---|--|---|-----------|--|
|   |   |  | 30 Min  | 60 Min    |  |
| Plant System Engineering, Repair, and Corrective Actions<br><br>- Repair and Corrective Actions | Mechanical Maintenance                  | 1* / 1* / 1*                           | --  | 1 / 1 / 1 | CURRENT (2013) SEP: The OSA resulted in the addition of two Nuclear Plant Operators to the SEP required shift complement. The OSA did not result in any changes to Figure 5-2 in the Plant System Engineering, Repair, and Corrective Actions Major Functional Area for the Repair and Corrective Actions Task.<br><br>LAR PROPOSED CHANGES: The LAR proposes to change the response times for one Electrical Technician and one I&C Technician from 30 minutes to 60 minutes. Nuclear Plant Operators are trained to perform repair and corrective action tasks in the initial stages of an event. The addition of two Nuclear Plant Operators as a result of the OSA is sufficient to perform these tasks for 90 minutes and supports the change in response times. The 60-minute response times for one Electrical and Mechanical augmented responders are unchanged.<br><br>(Refer to Section 4.2.5.3 of Attachment 1) |
|   | Radwaste Operator                       | --                                     | --  | 1 / 1 / 1 |  |
|   | Electrical Maintenance                  | 1* / 1* / 1*                           | 1 / 1 / 0   | 1 / 1 / 2 |  |
|   | Instrument and Control (I&C) Technician | --                                     | 1 / 1 / 0   | 0 / 0 / 1 |  |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS  | POSITION TITLE OR EXPERTISE | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |           | COMMENTS   |
|--|-----------------------------|--|---|-----------|--|
|  |                             |  | 30 Min  | 60 Min    |  |
| Protective Actions (In-Plant)<br><br>- Radiation Protection:<br><br>a. Access Control<br>b. RP Coverage<br>c. Personnel monitoring<br>d. Dosimetry | RP Technicians              | 2* / 2* / 2*                           | 2 / 2 / 0   | 2 / 2 / 4 | CURRENT (2013) SEP: The OSA did not result in any changes to Figure 5-2 in the Protective Actions (In-Plant) Major Functional Area.<br><br>LAR PROPOSED CHANGES: The LAR proposes to change the response times for two RP Technicians from 30 to 60 minutes. The response time change is supported by current access control, personnel monitoring, RP coverage and dosimetry issue processes and equipment, including the use of installed plant instrumentation and electronic alarming dosimetry.<br><br>(Refer to Section 4.2.6 of Attachment 1) |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS   | POSITION TITLE OR EXPERTISE | ON SHIFT STAFFING<br><br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |        | COMMENTS  |
|---|-----------------------------|--|---|--------|---|
|   |                             |  | 30 Min  | 60 Min |   |
| Fire Fighting   |                             | Fire Brigade per Technical Specifications  | Local Support   |        | CURRENT (2013) SEP: No changes for this functional area.<br><br>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.<br><br>(Refer to Section 4.2.7 of Attachment 1) |
| Rescue Operations and First-Aid   |                             | 2* / 2* / 2*                               | Local Support   |        | CURRENT (2013) SEP: No changes for this functional area.<br><br>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.<br><br>(Refer to Section 4.2.8 of Attachment 1) |
| Site Access Control and Personnel<br><br>- Security, fire fighting communications, personnel accountability | Security Personnel          | All per Security Plan                      |   |        | CURRENT (2013) SEP: No changes for this functional area.<br><br>LAR PROPOSED CHANGES: There are no proposed changes under the LAR for this functional area.<br><br>(Refer to Section 4.2.9 of Attachment 1) |

\* May be provided by shift personnel assigned other functions

## ATTACHMENT 2

### Summary of Shift Staffing and Augmentation Response Time Historical Requirements and Proposed Changes

| MAJOR FUNCTIONAL AREA AND MAJOR TASKS | POSITION TITLE OR EXPERTISE | ON SHIFT STAFFING<br>1982 / 2013 / LAR | STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES<br>1982 / 2013 / LAR |              | COMMENTS  |
|---------------------------------------|-----------------------------|--|---|--------------|---|
|                                       |                             |  | 30 Min  | 60 Min       |   |
|                                       | <b>TOTAL</b>                | 9 / 14 / 14                            | 11 / 11 / 0   | 15 / 15 / 26 | <p>1982 SEP: Nine on-shift responders were required. In 1993, an additional on-shift responder was added, bringing the total number of required on-shift responders to ten.</p> <p>CURRENT (2013) SEP: The OSA resulted in an additional on-shift staffing SEP commitment of four positions: One Control Room Supervisor, two Nuclear Plant Operators and a shift communicator.</p> <p>LAR PROPOSED CHANGES: The LAR proposes to change the response times for eleven 30-minute augmented responders to 60 minutes. There are no proposed changes under the LAR for the fifteen existing 60-minute augmented responders. The total number (26) of augmented responders is not changed under the LAR proposal.</p> |

\* May be provided by shift personnel assigned other functions

**ATTACHMENT 3**

**Proposed Revision to Palisades Nuclear Plant  
Site Emergency Plan Pages**

Site Emergency Plan Figure 5-2

### ATTACHMENT 3

#### Proposed Revision to Palisades Nuclear Plant Site Emergency Plan Pages

| <b>FIGURE 5-2<br/>PLANT STAFFING AND AUGMENTATION REQUIREMENTS</b>                       |  |   |             |   |
|--|--|---|-------------|---|
| MAJOR FUNCTIONAL AREA  | MAJOR TASKS  | POSITION TITLE<br>OR EXPERTISE                  | ON<br>SHIFT | STAFF AUGMENTATION<br>CAPABILITY AND<br>RESPONSE TIME |
|  |  |   |             | 60 Min  |
| Plant Operations and<br>Assessment of Operational<br>Aspects                             |  | Shift Engineer/Shift<br>Technical Advisor (SRO) | 1           | --  |
|  |  | Shift Manager (SRO)                             | 1           | --  |
|  |  | Control Room Supervisor<br>(SRO)                | 1           | --  |
|  |  | Control Room Operators                          | 2           | --  |
|  |  | Nuclear Plant Operators                         | 6           | --  |
| Emergency Director   |  | Shift Manager                                   | 1*          | --  |
| Notification/<br>Communication   | Notify licensee, state,<br>local, and federal<br>personnel and maintain<br>communication |   | 1           | 3   |
| Radiological Accident<br>Assessment and Support<br>of Operational Accident<br>Assessment | Emergency Operations<br>Facility (EOF) Director<br>Offsite Dose<br>Assessment            | Senior Manager                                  | --          | 1   |
|  |  | Senior Radiation Protection<br>(RP) Expertise   | 1*          | 1   |
|  | Offsite Surveys  | Rad Protection Technicians<br>Chem Technicians  | --          | 4   |
|  | Onsite (Out-of-Plant)  |   | --          | 2   |
|  | In-Plant Surveys   |   | 1           | 2   |
|  | Chemistry/Radiochemistry   |   | 1           | 1   |

\* May be provided by shift personnel assigned other functions.

### ATTACHMENT 3

#### Proposed Revision to Palisades Nuclear Plant Site Emergency Plan Pages

| <b>FIGURE 5-2<br/>PLANT STAFFING AND AUGMENTATION REQUIREMENTS</b> |   |  |   |   |
|--|---|--|---|---|
| MAJOR FUNCTIONAL AREA  | MAJOR TASKS   | POSITION TITLE<br>OR EXPERTISE             | ON<br>SHIFT                                     | STAFF AUGMENTATION<br>CAPABILITY AND<br>RESPONSE TIME |
|  |   |  |   | 60 Min  |
| Plant System<br>Engineering, Repair,<br>and Corrective Actions     | Technical Support   | Core/Thermal Hydraulics                    | 1*  | 1   |
|  |   | Electrical                                 | --  | 1   |
|  |   | Mechanical                                 | --  | 1   |
|  | Repair and Corrective<br>Actions  | Mechanical Maintenance                     | 1*  | 1   |
|  |   | Radwaste Operator                          | --  | 1   |
|  |   | Electrical Maintenance                     | 1*  | 2   |
|  |   | Instrument and Control<br>(I&C) Technician | --  | 1   |
| Protective Actions<br>(In-Plant)                                   | Radiation Protection:<br><br>a. Access Control<br>b. RP Coverage<br>c. Personnel monitoring<br>d. Dosimetry | RP Technicians                             | 2*  | 4   |
| Fire Fighting  | --  | --   | Fire Brigade<br>per Technical<br>Specifications | Local Support   |

\* May be provided by shift personnel assigned other functions.

### ATTACHMENT 3

#### Proposed Revision to Palisades Nuclear Plant Site Emergency Plan Pages

| <b>FIGURE 5-2<br/>PLANT STAFFING AND AUGMENTATION REQUIREMENTS</b> |  |                             |                       |   |
|--|--|-----------------------------|-----------------------|---|
| MAJOR FUNCTIONAL AREA  | MAJOR TASKS  | POSITION TITLE OR EXPERTISE | ON SHIFT              | STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME |
|  |  |                             |                       | 60 Min  |
| Rescue Operations and First-Aid                                    | --   | --                          | 2*                    | Local Support                                   |
| Site Access Control and Personnel                                  | Security, fire fighting communications, personnel accountability | Security Personnel          | All per Security Plan |   |
|  |  | <b>TOTAL</b>                | 14                    | 26  |

- NOTES:
1. Staff augmentation personnel are required to respond as quickly as possible, within the required response time.
  2. The Shift Manager may call out designated ERO members or the full ERO complement at any time in an emergency event regardless of classification.
  3. Even when they are not on duty, staff augmentation personnel are to respond to an emergency call out when they are fit for duty and otherwise available for timely response.
  4. The on-shift staffing requirements listed in this figure are a result of the Palisades Nuclear Plant On-shift Staffing Analysis Report, Revision 0, dated December 18, 2012, conducted in accordance with NEI 10-05 and required by 10CFR50 Appendix E, Section IV.A.9.

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\* May be provided by shift personnel assigned other functions.