Attachment 1

to

PNP 2017-034

Palisades Nuclear Plant

Description and Evaluation of the Proposed Changes

(35 Pages)
1.0 SUMMARY DESCRIPTION

Pursuant to Title 10 of the Code of Federal Regulations, Part 50, Section 90 (10 CFR 50.90), Entergy Nuclear Operations, Inc. (ENO) requests U.S. Nuclear Regulatory Commission (NRC) review and approval of a revision to the Palisades Nuclear Plant (PNP) Site Emergency Plan (SEP).

The proposed changes would revise the current PNP SEP and the on-shift and augmented Emergency Response Organization (ERO) staffing to support the pending permanent cessation of power operations at PNP, as certified in Reference 1, and the planned permanent removal of fuel from the PNP reactor vessel. The proposed reduction from current operating on-shift and augmented ERO staffing levels is commensurate with the need to safely store spent fuel at the facility in a manner that is protective of public health and safety.

ENO has reviewed the proposed changes against the planning standards in 10 CFR 50.47(b) and the requirements in 10 CFR Part 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” and concluded that the standards and requirements would continue to be met. Therefore, no exemption from 10 CFR 50.47 or 10 CFR 50, Appendix E, is requested.
2.0 DETAILED DESCRIPTION

The proposed changes would revise the current PNP SEP and the on-shift staffing and augmented ERO staffing to reflect the pending permanent cessation of power operations (Reference 1) and the planned permanent removal of fuel from the PNP reactor vessel. Specifically, the proposed changes would eliminate the on-shift positions not needed for the safe storage of spent fuel in the spent fuel pool (SFP) during the initial decommissioning period and eliminate the augmented staffing positions not necessary to effectively respond to credible accidents when in a permanently shut down and defueled condition.

Attachment 2 provides a tabular summary of the proposed changes to the PNP SEP. Attachment 3 provides the revised PNP SEP with the proposed changes shown in markup format. Attachment 4 provides a clean version of the revised PNP SEP. Any additional changes beyond those involving a reduction in staffing in Attachments 2, 3, and 4 are included for informational purposes only and will be dispositioned prior to implementation in accordance with the requirements in 10 CFR 50.54(q), “Emergency plans,” subparagraph (3), related to emergency preparedness, and specifically to making changes to emergency response plans.

Currently, PNP SEP Figure 5-2, “Plant Staffing and Augmentation Requirements,” specifies the on-shift and augmented staffing for certain positions in the following Major Functional Areas:

- Plant Operations and Assessment of Operational Aspects
- Emergency Direction
- Notification and Communication
- Radiological Accident Assessment and Support of Operational Accident Assessment
- Radiation Protection
- Plant System Engineering, Repair and Corrective Actions
- Field Monitoring Teams
- Fire Fighting
- Rescue Operations and First-Aid
- Site Access Control and Personnel

The proposed post-shutdown on-shift and augmented ERO staff will continue to address the Major Functional Areas.

On-Shift Staffing

The proposed changes to the PNP SEP will eliminate the following on-shift positions:

- One (1) Control Room Supervisor
- One (1) Shift Engineer/Shift Technical Advisor
- Two (2) Licensed Nuclear Control Operators
- Four (4) Non-Licensed Nuclear Plant Operators
- One (1) Communicator
- One (1) Radiation Protection Technician
- One (1) Chemistry Technician

The proposed post-shutdown Operations on-shift staff will continue to address the Major Functional Areas and will consist of:

- One (1) Shift Manager (qualified as a Certified Fuel Handler (CFH))
Two (2) Non-Certified Operators
One (1) Radiation Protection Technician

These staffing levels have been considered in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. The analysis is provided in Attachment 5 of this submittal.

Use of the title “Non-Certified Operator” is dependent upon NRC approval of proposed changes to the PNP Renewed Facility Operating License (Reference 2) that revise the minimum shift staffing requirements in the PNP Renewed Facility Operating License by replacing references to licensed and non-licensed operators with references to CFHs and Non-Certified Operators. However, implementation of the changes to the PNP SEP proposed in this submittal is not dependent upon prior NRC approval of the proposed changes to the PNP Renewed Facility Operating License.

An individual qualified as a CFH will supervise fuel handling operations while in the permanently shut down and defueled condition. Shift Managers will be qualified as CFHs. The Shift Manager requires additional qualification beyond the CFH training. Command and Control will remain with the Shift Manager, regardless of location of the individual designated as the Shift Manager. Non-Certified Operators will perform duties typically associated with those formerly performed by Non-Licensed Nuclear Plant Operators, such as manipulation and monitoring of plant equipment. Non-Certified Operators will also be assigned to monitor indications and communications in the Control Room. Reference 3 submitted a CFH training program for NRC approval. Reference 13 provided the NRC approval of Reference 3. Dedicated Licensed Nuclear Control Operators will not be utilized while in the permanently shut down and defueled condition.

The Non-Certified Operator position will include the post-shutdown duties of the current Non-Licensed Nuclear Plant Operator. The specific training requirements of the Non-Certified Operator position will be developed by the PNP Training Department and will be reviewed and approved by Operations management. The training program will be designed with an emphasis on systems and processes important to maintaining SFP cooling, and monitoring and controlling SFP parameters, such as SFP water level and temperature. Consequently, the Non-Certified Operators will be trained on pertinent Control Room indications and controls that will be monitored and operated to maintain SFP cooling and SFP water level, in addition to monitoring plant radiological conditions. The Non-Certified Operator training program will include training on applicable aspects of the PNP SEP-related Non-Certified Operator duties. Non-Certified Operators will be trained and qualified consistent with 10 CFR 50.120, “Training and qualification of nuclear power plant personnel,” in accordance with ENO training procedures.

Personnel assigned to fill the Non-Certified Operator positions during the post-shutdown period will include both previously licensed and non-licensed operators. Much of the required training for the Non-Certified Operator position will already have been completed by the formerly licensed operators, because they have previously been trained and qualified as Nuclear Control Operators to support power operations. The current Non-Licensed Nuclear Plant Operators have been trained and qualified as non-licensed operators only. Therefore, it is expected that the individuals assigned to fill the Non-Certified Operator positions will require additional training related to Control Room operations.

Once the specific training requirements for the Non-Certified Operator position have been identified, a gap analysis will be completed for all operators identified to fill the Non-Certified Operator position. Individualized training plans will be developed and completed to address
specific knowledge and skill areas for the selected Non-Certified Operator candidates. This will include training the currently qualified Non-Licensed Nuclear Plant Operators on Control Room indications, controls, and procedures. The initial training for any new Non-Certified Operators will include all training requirements for the Non-Certified Operator position to ensure the personnel are equipped with the required skills and knowledge to perform their required job functions.

The proposed changes to the on-shift organization are identified in the proposed changes to the PNP SEP Figure 5-2, included in Attachments 3 and 4, and are summarized in Attachment 2.

Augmented Emergency Response Organization Staffing

The proposed changes to the PNP SEP would eliminate augmented ERO positions currently identified in the PNP SEP, Figure 5-2 and Emergency Plan Implementing Procedures (EPIPs) describing the activation and operation of the Technical Support Center (TSC), Emergency Operations Facility (EOF), Operations Support Center (OSC), and Joint Information Center (JIC). Specific augmented ERO positions proposed for elimination are identified in Table 1 of this attachment.

Currently, PNP SEP, Figure 5-2 specifies the on-shift and augmented staffing for certain positions in the Major Functional Areas identified above. The proposed changes to the PNP SEP would eliminate the following augmented positions identified in Figure 5-2:

- State/County Communicator
- Chemistry Technician
- Four (4) Radiation Protection (RP) Technicians
- Core/Thermal Hydraulic Engineer
- Electrical Engineer
- Mechanical Engineer
- OSC Craft (one Electrical Maintenance Technician and one Instrument and Control (I&C) Technician)
- Radwaste Operator

After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. Thus, the need for augmenting engineers is reduced. The Engineering Coordinator in the TSC, tasked with performing engineering assessments of plant conditions and actions needed to mitigate damage to the plant, will provide the Major Task of Technical Support in the Major Functional Area of Plant System Engineering, Repair, and Corrective Actions in Figure 5-2. With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by augmenting qualified engineering resources. The Engineering Coordinator will continue to continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

The OSC Craft (Electrical and Mechanical) functions will continue to be performed by augmenting resources. PNP will maintain trained and qualified I&C personnel to respond to an emergency. These resources are discussed in more detail in Section 3.2.2.2.
2.1. Reason for the Proposed Changes

The proposed changes reflect the pending permanent cessation of power operations, which is anticipated to occur on October 1, 2018 (Reference 1), and the planned permanent defueling of the PNP reactor. After the reactor is permanently shut down, all fuel assemblies will be removed from the reactor vessel and placed in the SFP. The irradiated fuel will be stored in the SFP and in the Independent Spent Fuel Storage Installation (ISFSI) until it is removed by the Department of Energy (DOE). Upon docketing of the certifications for permanent cessation of power operations (10 CFR 50.82(a)(1)(i)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel.

The proposed revisions to the PNP SEP are commensurate with the reduction in hazards associated with the permanently shut down and defueled condition, and will allow PNP to transition from an appropriate staffing level required for an operating facility to staffing levels required for a permanently shut down and defueled facility. The proposed changes are required to properly reflect the conditions of the facility while continuing to maintain the effectiveness of the PNP SEP and preserve the PNP Decommissioning Trust Fund.

2.2. Background

The on-site emergency plan standards in 10 CFR 50.47(b)(2) state, in part, that “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, [and] timely augmentation of response capabilities is available.”

NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” (Reference 4), Section II.B, “Onsite Emergency Organization,” presents guidance for meeting the planning standards and requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, Section IV.A. 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., firefighting 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 personnel arrive in accordance with the site’s emergency plan commitments. The augmenting responders assume managerial, engineering, and administrative duties from the on-shift personnel, allowing on-shift personnel to focus on their assigned functions.

On November 23, 2011, the NRC published a final rule in the Federal Register amending certain emergency preparedness requirements in its regulations that govern domestic licensing of production and utilization facilities (Reference 5). 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 Part 50, Appendix E, Section IV.A.9, the NRC issued NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (ISG-01) (Reference 6). This Interim Staff Guidance (ISG) provides information relevant to performing the on-shift staffing analysis. The ISG states that the NEI developed NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” (Reference 7) 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) for review.

2.3 PNP Specific Background

On-Shift Staffing

In August 2015, PNP updated its On-Shift Staffing Analysis in accordance with the 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 on-shift staff provided in Figure 5-2 of the PNP SEP to perform the key emergency response actions for events described in NSIR/DPR-ISG-01 until augmenting staff arrive. The analysis was conducted by a cross disciplinary team of corporate Emergency Preparedness personnel and station personnel from the Operations, Training, Radiation Protection, Chemistry, Engineering, Regulatory Assurance, and Emergency Planning departments. Additionally, members of the Security staff provided input to the analysis.

The emergency response to each of the events described in NSIR/DPR-ISG-01 was determined by conducting a tabletop of the event using the emergency plan and procedures and the applicable departmental procedures such as emergency and abnormal operating procedures.

Each scenario was reviewed by the cross disciplinary team to determine the required plant actions and emergency plan implementation actions based on plant procedures prior to staff augmentation. These actions were then compared to the minimum on-shift staffing for emergency response implementation as described in Figure 5-2 of the PNP SEP, 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 Design Basis Accident (DBA) scenarios considered in the analysis were the Design Basis Threat (DBT), control rod ejection accident, small line break outside containment, loss of coolant accident (LOCA), fuel handling accident (FHA), main steam line break inside containment (MSLB) accident, waste tank rupture, aircraft probable threat, Control Room fire requiring evacuation and remote shutdown, station blackout, and steam generator tube rupture (SGTR) with concurrent loss of off-site power.

The analysis concluded that an on-shift staff of fifteen (15) is required to respond to the most limiting accident scenario reviewed, which was determined to be the aircraft probable threat.

PNP SEP Figure 5-2 specifies the minimum staffing requirements for the PNP on-shift staff, defines the positions initially responsible for satisfying key ERO functions, and specifies positions that will augment the on-shift staff.
Augmented Emergency Response Organization Staffing

The PNP SEP defines four classes of emergency events: Notification of Unusual Event (UE), Alert, Site Area Emergency (SAE) and General Emergency (GE). Because on-shift personnel can normally address an emergency response to UEs without additional support, staff augmentation may not be activated for an UE declaration. The Operations Shift Manager maintains command and control responsibility during UEs, unless the EOF has been activated. An Alert declaration results in the activation of the EOF, TSC, OSC, and discretionary activation of the JIC. All Emergency Response Facilities (ERFs) are activated at a SAE or GE declaration. Overall responsibility for the event is assumed by the Emergency Director in the EOF when the EOF is declared operational. When the ERO is activated, notification is sent to those required to respond to their assigned ERF.

PNP SEP, Section 5.0, “Organizational Control of Emergencies,” describes how the normal plant operating organization transitions into an ERO to effectively deal with any incident at PNP.

The PNP onsite emergency organization is described in Section 5.3, “Palisades Emergency Response Organization,” and the operating and engineering organization is described in Section 5.2 of the PNP SEP. If initiating conditions exist that result in the declaration of an emergency, the Shift Manager assumes the role of Emergency Director and is responsible for emergency direction and coordination. The normal operating organization assumes their pre-assigned emergency response roles. This is considered to be a short-term response organization that will be augmented within one hour after call-out by additional plant personnel.

If an Alert, SAE, or GE is declared, or if the minimum shift crew requires assistance during an UE, the onsite emergency organization will be augmented by additional plant personnel as described in Section 5.3 of the PNP SEP, “Palisades Emergency Response Organization.” The PNP SEP describes the augmented emergency organization that will staff and operate the EOF, TSC, OSC, and JIC within one hour of the request for activation.

Plans and procedures have been put into place to ensure the timely activation of emergency response facilities. PNP SEP Figure 5-1 identifies the interfaces among the various emergency organizations.

3.0 TECHNICAL EVALUATION

3.1 Accident Analysis

Chapter 14 of the PNP Final Safety Analysis Report (FSAR) describes safety analyses for postulated DBAs under which the PNP is licensed. Upon docketing of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii), the 10 CFR Part 50 license for PNP will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). Therefore, most of the accident scenarios postulated in the FSAR will no longer be applicable once PNP is in the permanently shut down and defueled condition.

The postulated DBAs that will remain applicable to PNP in its permanently shut down and defueled condition are the Cask Drop in the SFP (FSAR Section 14.11) and a FHA in the SFP area (FSAR Section 14.19). FSAR Section 14 will be revised to eliminate the DBAs that will not be applicable in the permanently shut down and defueled condition.
It was determined that no emergency declaration would be expected for the FSAR Section 14.11 event. Therefore, the FSAR Section 14.11 event was not considered in the analysis of proposed post-shutdown on-shift staffing. Additionally, the Station Blackout (SBO) event was not considered in the analysis of proposed post-shutdown on-shift staffing. Once the certifications required by 10 CFR 50.82(a)(1)(i) and (ii) are docketed, PNP will no longer be licensed to operate and 10 CFR 50.63 (the SBO rule) will no longer be applicable pursuant to 10 CFR 50.63(a)(1).

An evaluation was performed to determine if sufficient on-shift staffing would be available to implement emergency response actions in response to potential aircraft impacts in accordance with 10 CFR 50.54(hh)(1). In the permanently shut down and defueled condition, the Fire Brigade will relocate away from target areas and prepare for reentry. The task of maintaining communications during this event are transferred to the Non-Certified Operator trained and qualified to perform this function. Therefore, sufficient staffing is available to promptly implement response actions required under 10 CFR 50.54(hh)(1) without impacting the performance of designated emergency plan functions.

In the permanently shut down and defueled condition, the PNP Fire Brigade will be responsible for implementing the SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). PNP will continue to maintain a trained and qualified Fire Brigade responsible for implementation of the SFP inventory makeup strategies. The Fire Brigade personnel identified in the PNP Post-Shutdown Emergency Plan (PSEP) are separate and distinct from those responsible for implementing the major elements of the emergency plan including command and control, emergency classification, offsite notifications, and dose assessment/protective action recommendation development. Therefore, sufficient staffing is available to promptly implement SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2) without impacting the performance of designated emergency plan functions.

As described in Section 3.2.2.2, events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). These strategies will continue to be maintained to satisfy applicable portions of Condition 2.C.(6).b of the PNP Renewed Facility Operating License.

3.2 Analysis of Proposed Changes

3.2.1 On-Shift Staffing

To support reduced staffing following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents that could occur in the permanently shut down and defueled condition (Attachment 5). The analysis of proposed post-shutdown on-shift staffing considered the cask drop in the SFP (FSAR Section 14.11) and the FHA as the applicable DBAs. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition one on-shift Shift Manager, two Non-Certified Operators, and one Radiation Protection Technician can perform all required Emergency Plan actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. The Fire Brigade complement considered in the analysis of proposed post-shutdown on-shift staffing was consistent with the requirements from the Fire Hazard Analysis.

Accident Scenarios

For the analysis of proposed post-shutdown on-shift staffing, the following accident scenarios were considered:
Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the augmented ERO is staffed, no radiological release, and no fire that requires firefighting response before the augmented ERO is staffed.

Fuel Handling Accident

The DBA FHA is assumed to occur as a consequence of a failure of the fuel assembly lifting mechanism, resulting in the dropping of a raised fuel assembly onto stored fuel bundles. The FHA is assumed to occur in containment two days after shutdown. An Alert emergency declaration was assumed to be declared due to the event.

Aircraft Probable Threat (50.54(hh))

Notification is received from the NRC that a probable aircraft threat exists (>5 minutes, <30 minutes).

Control Room Fire Requiring Evacuation and Maintain SFP Cooling

A fire occurs in the Control Room requiring the evacuation and actions implemented to control spent fuel pool cooling from a remote location.

General Emergency (GE) with radioactive release and PAR (assumed for analysis purposes)

This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the Environmental Protection Agency’s (EPA) Protective Action Guides (PAGs) beyond the site boundary, and thus necessitates promulgation of a PAR.

In addition to the events described above, a Cask Drop in the SFP (FSAR Section 14.11) analyzed dropped cask events and determined that no emergency declaration would be expected for this event.

The analysis of proposed post-shutdown on-shift staffing indicates that the proposed on-shift personnel can satisfactorily implement all emergency plan functions as required by regulation without augmented personnel for at least 90 minutes following an emergency declaration. The analysis confirmed that no chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. The 90-minute capability exceeds the PNP SEP requirements that augmented staff respond in 60 minutes. ENO is not requesting an extension to the current 60-minute augmentation capability.

The proposed on-shift staffing changes do not impact the capabilities of the on-shift staff to respond to an emergency and continues to comply with the PNP SEP, site commitments, and applicable regulations.

Additional analysis for each of the proposed on-shift staffing changes associated with PNP SEP Figure 5-2 is provided for each major functional area in Sections 3.2.1.1 through 3.2.1.10. Additionally, because Figure 5-2 of the PNP SEP includes 60-minute and 90-minute staff
augmentation capabilities, the proposed revisions to the ERO impacting each major functional area are also addressed in Sections 3.2.1.1 through 3.2.1.10.

3.2.1.1 Major Functional Area: Plant Operations and Assessment of Operational Aspects

Current Staffing Requirement

During normal operations, the minimum staff on duty at the plant during all shifts to satisfy this Major Functional Area consists of:

- One (1) Control Room Supervisor
- One (1) Shift Engineer/Shift Technical Advisor
- One (1) Shift Manager
- Two (2) Licensed Nuclear Control Operators
- Six (6) Non-Licensed Nuclear Plant Operators

Proposed Change

The proposed changes to the PNP Emergency Plan will eliminate the following on-shift positions:

- One (1) Control Room Supervisor
- One (1) Shift Engineer/Shift Technical Advisor
- Two (2) Licensed Nuclear Control Operators
- Four (4) Non-Licensed Nuclear Plant Operators

Credited on-shift personnel will consist of one Shift Manager and two Non-Certified Operators. Use of the titles, CFH and Non-Certified Operator, are dependent upon NRC approval of proposed changes to the PNP Technical Specifications (Reference 2). Implementation of the PNP PSEP, as proposed for revision in this submittal, is not dependent upon prior NRC approval of the proposed changes to the PNP Technical Specifications.

Analysis

Because of the reduced number of possible events requiring mitigating actions in the permanently shut down and defueled condition and the limited number of actions to be performed by the Control Room positions in a permanently shut down and defueled condition, no Licensed Nuclear Control Operators or Shift Engineer/Shift Technical Advisor job tasks were noted as being required for any of the events analyzed in the analysis of proposed post-shutdown on-shift staffing. Therefore, the Licensed Nuclear Control Operator and Shift Engineer/Shift Technical Advisor positions can be eliminated without reducing the effectiveness of the PNP SEP.

The regulatory standard for minimum staffing requirements for NRC licensees is documented in NUREG-0654. The total minimum on-shift staffing expressed in NUREG-0654, Table B-1, is ten personnel. Plant Operations shift staffing, as implemented previously, was based on an operating philosophy that provided defense in depth. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the on-shift Shift Manager and two Non-Certified Operators can perform all required PSEP actions in a timely manner and there are no collateral duties
that would prevent the timely performance of emergency plan functions. Therefore, this deviation from the guidance presented in NUREG-0654, Table B-1 is acceptable.

3.2.1.2 Major Functional Area: Emergency Director

*Current Staffing Requirement*

The minimum staff on duty at the plant during all shifts to satisfy this Major Functional Area consists of the Shift Manager.

*Proposed Change*

No proposed changes in staffing.

*Analysis*

PNP proposes no changes to the Emergency Director staffing.

3.2.1.3 Major Functional Area: Notification/Communication

*Major Tasks: Notify licensee, State, Local, and Federal personnel and maintain communications*

*Current Staffing Requirement*

The Shift Manager and an on-shift Communicator perform the function of on-shift notification/communication.

Augmentation of the notification/communication capability is accomplished by the Offsite Communicator and the State/County Communicator in the EOF, and the ENS Communicator in the TSC within 60 minutes.

*Proposed Change*

Replace the On-shift Communicator with a Non-Certified Operator.

Elimination of the augmenting EOF State/County Communicator position.

*Analysis*

This function is currently performed by an on-shift staff position performing emergency plan Communicator requirements. This function is currently augmented by TSC and EOF designated communications positions when those facilities assume communications responsibilities.

Initial notification to offsite authorities are required to occur within 15 minutes of declaration of an emergency and initial NRC notification is required to occur immediately after notification of the appropriate State or County agencies and not later than 60 minutes after the time of the emergency declaration. Subsequent notifications are made, should the event escalate and to provide informational updates. The resource commitment to support the communication function is not full time so there is time to support performance of collateral duties during the first 60 minutes until staff augmentation can occur. The on-shift and offsite
communicators have advanced communications capabilities available as illustrated in PNP SEP Table 7-1, “Palisades SEP Communications Matrix.” Communications with the NRC take place over dedicated telephone lines provided for and maintained by the NRC (Emergency Notification System (ENS)). For purposes of the analysis of proposed post-shutdown on-shift staffing, 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 headsets enables these notifications to be performed by the same on-shift communicator who performs the State and County notifications.

The Shift Manager initially approves the content of the communication with the State and Federal agencies until relieved of this function by the EOF. The PNP SEP goal is to activate the EOF within approximately 60 minutes. The EOF assumes the communication responsibility concurrent with activation. Therefore, the current communication protocol may remain within the Control Room for the first 60 minutes, regardless of the presence of any prior ERO augmentation.

The elimination of the State/County Communicator position in the EOF does not impact the capabilities of the on-shift staffing or augmented response. The position can be eliminated without placing an undue burden on the remaining ERO positions in the EOF and without increasing the risk to public health and safety. Attachment 6 contains an analysis of all ERO positions proposed for elimination and evaluates the transfer of tasks currently assigned to the State/County Communicator following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. The EOF will continue to be activated at an Alert or higher declaration. Functional responsibilities of the State/County Communicator position are either currently performed by other positions or will be reassigned to remaining positions. The proposed ERO staffing reductions continue to address the risks to public health and safety, comply with the PNP SEP, site commitments, and applicable regulations.

In the post-shutdown condition, the task of notifying and communicating with offsite authorities will be transferred to the Non-Certified Operators. This change is acceptable because the analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the Non-Certified Operator can perform this required PNP SEP action in a timely manner and there are no collateral duties that would prevent the timely performance of this emergency plan function.

3.2.1.4 Major Functional Area: Radiological Accident Assessment and Support of Operational Accident Assessment

Major Tasks: Emergency Operations Facility (EOF) Director, Offsite Dose Assessment, and Chemistry/Radiochemistry

Current Staffing Requirement

On-shift Senior Radiation Protection Expertise (provided by shift personnel assigned other functions)

On-shift Chemistry Technician

Augmentation with the Senior Manager (EOF Director) within 60 minutes
Augmentation with Senior Radiation Protection expertise within 60 minutes (Radiological Assessment Coordinator in TSC or Radiological Assessment Coordinator in EOF)

Augmentation with one Chemistry Technician within 60 minutes

Proposed Change

Elimination of the on-shift Chemistry Technician.

Elimination of the augmenting Chemistry Technician.

Analysis

The elimination of the on-shift and augmenting Chemistry Technician positions does not impact the ability of the on-shift or augmented ERO to perform dose assessment. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the on-shift Shift Manager and two Non-Certified Operators can perform all required PNP SEP actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. Control Room personnel can perform initial dose assessment using existing EPIPs.

Currently, the Chemistry Technician is an on-shift position per PNP SEP Figure 5-2 so that a technician is always available to immediately collect and analyze a liquid sample if the applicable radiation monitor is not available during a release, or as directed by the Shift Manager. When the on-shift Chemistry Technician position is eliminated, the on-shift Radiation Protection Technician will be able to perform sampling and analysis, so as not to delay information potentially needed by the Shift Manager to determine if an emergency declaration is required. A gap analysis will be performed to determine any differences between current Radiation Protection Technician training requirements and any new specific knowledge requirements associated with emergency plan sampling and analysis. Such specific knowledge requirements would include how to obtain specific liquid samples. For gaseous releases, the only credible scenario for releasing gas would be to mechanically damage spent fuel during handling or by impact of a heavy object. Activities that could cause mechanical damage will require that a Chemistry Technician be on-site or the radiation monitor listed in gaseous effluent Emergency Action Levels (EALs) is in service, thereby alleviating any reliance on a potentially delayed sample analysis to determine EAL applicability. A new regulatory commitment to revise applicable fuel handling procedures to incorporate this prerequisite is included in Attachment 7.

Once the specific training requirements for the Radiation Protection Technician position have been identified using a systems approach to training, as required by 10 CFR 50.120, a formal gap analysis will be completed for all personnel identified to fill the Radiation Protection Technician position. Individualized training plans will be developed and completed to address specific knowledge and skills areas for each of the selected Radiation Protection Technician candidates. The initial training for all incumbent Radiation Protection Technicians will include all training requirements to perform liquid sampling and analysis to support an emergency declaration.

The initial training requirements for any new Radiation Protection Technician will include all training modules to ensure they are equipped with the required skills and knowledge to perform the required liquid sampling and analysis. These training modules will be specifically identified in the training program description for the Radiation Protection
Technician position. This document will be developed in accordance with the requirements of 10 CFR 50.120.

Based on the above, the proposed change in on-shift operations staffing and elimination of the on-shift Chemistry Technician are appropriate given the cessation of power operations and permanent removal of fuel from the reactor vessel.

3.2.1.5 Major Functional Area: Radiation Protection


Current Staffing Requirement

Two on-shift Radiation Protection Technicians.

Augmentation by three Radiation Protection Technicians within 60 minutes.

Augmentation by an additional three Radiation Protection Technicians within 90 minutes.

Proposed Change

Eliminate one on-shift Radiation Protection Technician position.

Eliminate one 60-minute augmenting Radiation Protection Technician position.

Eliminate three 90-minute augmenting Radiation Protection Technician position.

Analysis

The function of these resources is to provide radiation protection oversight of the on-shift complement of personnel and augmented personnel who are expected to respond to emergency events for damage repair, corrective actions, search and rescue, first aid, firefighting and personnel monitoring. They can also be expected to provide for access control and the issuance of dosimetry.

PNP will no longer be an operating nuclear power plant. In accordance with 10 CFR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. If additional resources are determined to be necessary during an emergency, PNP maintains the necessary staffing to provide sufficient personnel trained in radiation protection to respond and perform the required actions, if necessary, in the post-shutdown condition.
During a declared emergency, RWPs and dose setpoints will change depending on the emergency situation and plant conditions. Both systems have been used by plant workers for several years. Worker dose margins and training qualifications are also automatically verified when the RWP 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. In an emergency situation, approval to exceed dose margins is required. 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 Radiation Protection (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 Radiologically Controlled Area (RCA). 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 the RCA. No RP involvement is necessary for this contamination monitoring activity because workers are trained to perform this task without supervision or oversight. However, contaminated personnel exiting the RCA will require RP oversight.

The analysis of proposed post-shutdown staffing concluded that in a permanently shut down and defueled condition, Non-Certified Operators can perform this required action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

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. Because entry is expected to be limited to those areas where maintenance necessary to maintain SFP cooling is required and the areas potentially affected by an accident involving the SFP are limited, there is a significant decrease in areas potentially requiring RP coverage in a permanently shut down and defueled condition. If RP coverage is deemed necessary, multiple emergency teams can be covered by the on-shift RP Technician. 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.

Tasks requiring the issuance of dosimetry are not expected in the initial stages of an event, but during the recovery phase. Prior to self-issuance of dosimetry, workers are assigned a RWP, setpoints are adjusted, and briefings are conducted by RP.

The analysis of proposed post-shutdown on-shift staffing 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.

Activities related to the conduct of surveys or radiological assessment of the area surrounding PNP are performed by the Field Team Technicians identified in the Field Monitoring Team (FMT) Major Functional Area of Figure 5-2 of the PNP SEP, independent of the augmenting RP Technician positions.

PNP proposes reducing the number of augmenting RP Technicians listed in the Major Functional Area of Radiation Protection in Figure 5-2 of the PNP SEP from six to two. As previously described, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

3.2.1.6 Major Functional Area: Plant System Engineering, Repair and Corrective Actions

**Major Tasks: Technical Support, Repair, and Corrective Actions**

**Current Staffing Requirement**

The on-shift Shift Engineer/Shift Technical Advisor performs the major task of Technical Support.

Augment the on-shift core/thermal hydraulics capability by one within 60 minutes (TSC Reactor Engineer).

Augment the Shift Engineer/Shift Technical Advisor with the Mechanical Engineer and Electrical Engineer within 60 minutes.

OSC staff (Mechanical Maintenance, Radwaste Operator, Electrical Maintenance, I&C Technicians) augmentation within 60 minutes to perform repair and corrective actions.

**Proposed Change**

Eliminate the on-shift Shift Engineer/Shift Technical Advisor position.

Eliminate the TSC Reactor Engineer ERO position.

Replace the Mechanical Engineer and Electrical Engineer ERO positions with the Engineering Coordinator ERO position (augmenting within 60 minutes).

Eliminate the Radwaste Operator, one Electrical Technician, and the I&C Technician from Repair and Corrective Action staffing (augmenting within 60 minutes).

**Analysis**

The Shift Engineer/Shift Technical Advisor 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. The Shift Engineer/Shift Technical Advisor also contributes to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the Shift Engineer/Shift Technical Advisor can focus on preventative actions to mitigate the consequences of an accident.

Because of the permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the Shift Engineer/Shift Technical Advisor position is no longer necessary for technical and analytical assistance. The Technical Support function will be assumed by the remaining Control Room personnel.

The analysis of proposed post-shutdown on-shift staffing concluded that the on-shift Shift Manager and two Non-Certified Operators can perform any required technical analysis, until augmented by the TSC, in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

The function of the TSC Reactor Engineer is to provide confirmation of adequacy of core cooling, maintenance of coolable core geometry, and to verify that actual plant response to the event is as expected. This function is initially performed by the on-shift Shift Engineer/Shift Technical Advisor under the guidance of the Shift Manager. The TSC Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shut down and defueled condition.

The primary duties of the TSC Engineer positions include: responding to engineering requests from the Engineering Coordinator, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by other members of the post-shutdown ERO.

The Engineering Coordinator is tasked with performing an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant. With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by augmenting qualified engineering resources. The Engineering Coordinator will continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in additional qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform.
The Radwaste Operator position is no longer required in the post shutdown and permanently shut down and defueled condition. Electrical Maintenance Technician duties include providing repairs and corrective actions for plant electrical equipment, as directed. I&C Technician duties include providing repairs and corrective actions to plant instrumentation, as directed. The OSC Manager will continuously evaluate the need for resources and coordinate with the EOF Technical Advisor to call in additional qualified personnel. OSC resources will continue to be augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. The elimination of the OSC craft positions described above is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the OSC must perform. Additionally, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

3.2.1.7 Major Functional Area: Field Monitoring Teams (FMTs)

Major Tasks: Onsite FMT, Offsite FMT, and Transportation

Current Staffing Requirement

Augmentation by two Radiation Protection Technicians within 60 minutes and one additional Radiation Protection Technician within 90 minutes.

Augmentation of two drivers – one within 60 minutes and one within 90 minutes.

Proposed Change

No proposed changes in staffing.

Analysis

PNP proposes no changes to the FMT staffing.

3.2.1.8 Major Functional Area: Fire Fighting

Current Staffing Requirement

The Fire Brigade complement currently consists of five (5) responders, one of which acts as the Plant Fire Brigade Leader.

Proposed Change

No proposed changes in staffing. The Fire Brigade complement will continue to consist of a minimum of five (5) responders, including a Fire Brigade Leader and a minimum of four (4) trained and qualified Fire Brigade Members in compliance with the PNP fire protection program.
Analysis

The Fire Brigade will continue to be staffed in accordance with Technical Specifications. All Fire Brigade training and qualification requirements will be maintained using the Fire Hazards Analysis requirements. The Fire Brigade will continue to perform the task of firefighting in the permanently shut down and defueled condition. The Fire Brigade will be available to promptly implement SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2) without impacting the performance of designated emergency plan functions.

3.2.1.9 Major Functional Area: Rescue Operations and First Aid

Current Staffing Requirement

The minimum staff on duty at the plant during all shifts to satisfy this Major Functional Area consists of two (2) on-shift personnel assigned other functions.

Proposed Change

No proposed changes in staffing.

Analysis

PNP proposes no staffing changes to the Rescue Operations and First Aid staffing Major Functional Area.

3.2.1.10 Major Functional Area: Site Access Control and Personnel

Major Tasks: Security, firefighting, communications, personnel accountability

Current Staffing Requirement

Staffing in accordance with the Security Plan

Proposed Change

No proposed changes in staffing.

Analysis

PNP proposes no staffing changes to the Site Access Control and Personnel Major Functional Area.

3.2.2 Augmented ERO Staffing

Prior to an emergency declaration, the normal plant operating organization is in place. The initial classification of an off-normal event and declaration are performed by the Shift Manager. Upon classification and declaration of an emergency, the Shift Manager assumes the role of Emergency Director and retains that role until another designated Emergency Director can assume control. The onsite emergency organization is activated by personnel notification or when the station alarm is sounded and the emergency is announced over the public address system. Initially, the ERO consists of the normal operating shift personnel who function as the emergency team members.
The normal operating staff is augmented by qualified plant personnel. Those personnel onsite respond when the station alarm is sounded and the announcement is made or when individuals are notified by another means. Personnel not onsite during off-hours operations will be notified via an ERO notification system. A designated on-shift plant employee completes the notifications.

In the permanently shut down and defueled condition, PNP will continue to maintain ERO teams to respond to an emergency declaration. When the Shift Manager directs the activation of the ERO call out system, ERO members are notified to ensure adequate coverage of ERO positions at each ERF. ERO members not on-call are expected to respond unless they are unavailable.

PNP requires ERO personnel to act promptly in reporting to their assigned ERF even when not on duty. During duty periods, procedures further require that team members respond within the required response time for their ERF (unless a longer time frame is specified for their specific ERO position) and that they remain fit for duty throughout the duty assignment. Individuals are trained to respond to their ERF even if they are not on duty. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift. This conservative policy ensures timely activation because some off-duty personnel may respond sooner than the on-duty personnel.

The proposed revisions to the PNP SEP will not change the requirements described above. Management’s continued expectation is that duty and support ERO members report to their respective ERF as quickly as possible. ERO personnel are expected to respond when notified by the ERO notification system. Current augmented ERO positions are identified, and the associated duties are captured, in the ERO Task Analysis provided in Attachment 6. Each of the positions proposed for elimination were analyzed to identify the key duties associated with the position and the duties were then evaluated against the planning standards in NUREG-0654.

During the development of the proposed changes to the augmented ERO staffing, documented in Attachment 6, PNP initiated a multi-disciplined team review of each aspect of the augmented ERO staffing changes. This team included participants from Operations, Training, Engineering, Chemistry, Radiation Protection, and Emergency Planning. Each proposed change in task alignment was vetted by this group.

The Table provided in Attachment 6 contains columns with headings "Implementing Actions" and "Task Assigned To?". These columns provide the details regarding the disposition of each task. Some of the duties are identified as being eliminated because they become unnecessary following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. Other duties are identified as eliminated because the duties are performed redundantly by other positions in the ERO and will continue to be performed by these positions in the post-shutdown ERO.

Procedures and training materials depicting the changes presented in Attachment 6 will be developed to align with the revised task assignments. These procedures will be used to support training of post-shutdown ERO staff and the conduct of drills that will be used to validate the staffing and assignment of tasks.

The proposed changes to the PNP SEP, including the changes made to develop the post-shutdown ERO, have been evaluated for impacts on the ERO and for the ability of offsite response organizations (OROs) to implement their U.S. Federal Emergency Management Agency (FEMA)-approved Radiological Emergency Preparedness (REP) Plans. Potential impacts on the ability of State and County response organizations to effectively implement their FEMA-approved REPs do
ATTACHMENT 1
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

not exist because no tasks that require interfacing with State and County response organizations are proposed for elimination. PNP has appropriately addressed elimination of augmented ERO positions that interface with offsite representatives by transferring the necessary tasks to remaining post-shutdown augmented ERO positions. In addition, the PNP ERO includes technical support staff that have dedicated responsibilities for interfacing with State and County representatives. During an emergency, these personnel are dispatched to the State and County EOCs to act as communication and technical liaisons between the EOCs and plant technical staff to provide clarification of emergency response information. These positions will remain as part of the PNP ERO in the post-shutdown period. See Attachment 8 for correspondence from the State and Local agencies.

To validate the results of the proposed changes to the augmented ERO described within, and the analysis presented in Attachment 6, one or more drills will be developed and conducted prior to implementation of the changes described within this LAR. The drills will be conducted to confirm the ability of the post-shutdown augmented ERO to perform the necessary functions of each ERF and will utilize the post-shutdown procedures that will be developed depicting the revised assignment of duties. The drills will be used to train and qualify post-shutdown augmented ERO members, evaluate and validate the ability to accomplish the stated mission of each ERF, and ensure that the planning standard functions are preserved with no degradation in time-sensitive activities or in the ability to communicate with OROs. The drills will also validate that the post-shutdown augmented ERO continues to address the risks to public health and safety and comply with the PNP SEP, site commitments, and applicable regulations. Implementing procedures will be revised to address the permanently shut down and defueled conditions. The revised procedures will be used to support training of augmented ERO staff and the conduct of the drills described above.

Training and draft procedures will be developed and in place prior to performing post-shutdown ERO validation drills. The drill scenarios will include SFP events and will be designed to test the major elements of the PNP Post-Shutdown Emergency Plan (PSEP). Major elements to be tested will include communications and coordination with OROs, including the JIC. State, County, and Federal response organizations will be provided the opportunity to participate in or observe the drills, as applicable. New regulatory commitments for scenario elements and communication with offsite agencies are included in Attachment 7.

PNP has not yet finalized a schedule of drills that will be conducted. When the dates are finalized, the NRC Project Manager will be notified and provided with a schedule. PNP will provide the schedule to the NRC with appropriate advanced notice, thereby allowing the NRC and FEMA an opportunity to observe each drill. A new regulatory commitment to provide the schedule to the NRC Project Manager is included in Attachment 7.
### Table 1 - Proposed Post-Shutdown Augmented ERO Staffing

<table>
<thead>
<tr>
<th>Current PNP Augmented ERO Positions</th>
<th>Proposed Post-Shutdown Augmented ERO Positions</th>
<th>Justification for Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Support Center</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Plant Manager</td>
<td>Emergency Plant Manager</td>
<td>Not Applicable (N/A) -- Position Retained</td>
</tr>
<tr>
<td>TSC Manager</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Operations Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>TSC Reactor Engineer</td>
<td>--</td>
<td>No remaining functions</td>
</tr>
<tr>
<td>Engineering Coordinator</td>
<td>Engineering Coordinator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>TSC Engineers (Electrical, I&amp;C, Mechanical)</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>TSC Communicator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Radiological Assessment Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Security Coordinator</td>
<td>Security Coordinator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Maintenance Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>ENS Communicator</td>
<td>ENS Communicator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>TSC Admin Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>TSC Log Keeper</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td><strong>Operations Support Center</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSC Manager</td>
<td>OSC Manager</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>OSC Operations Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Work Control Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Mechanical and I&amp;C/Electrical Coordinators</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Rad/Chem Coordinator</td>
<td>Rad/Chem Coordinator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>OSC Staff (Electrical, I&amp;C, Mechanical Maintenance, RP/HP, Chemistry)</td>
<td>OSC Staff (Electrical, Mechanical Maintenance, RP/HP Technicians)</td>
<td>N/A – Positions Retained, tasks transferred, or tasks are no longer necessary</td>
</tr>
<tr>
<td>OSC Log Keeper</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>OSC Radio Communicator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>OSC Admin Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Onsite Monitoring Team</td>
<td>Onsite Monitoring Teams</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Offsite Monitoring Teams</td>
<td>Offsite Monitoring Teams</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td><strong>Emergency Operations Facility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Director</td>
<td>Emergency Director</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>EOF Manager</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>EOF Technical Advisor</td>
<td>EOF Technical Advisor</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>EOF Log Keeper</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Radiological Assessment Coordinator</td>
<td>Radiological Assessment Coordinator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Offsite Communicator</td>
<td>Offsite Communicator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Lead Offsite Liaison</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Offsite Team Coordinator</td>
<td>Offsite Team Coordinator</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Administration and Logistics Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>IT Specialist</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Dose Assessor</td>
<td>Dose Assessor</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Offsite Liaisons (1 State/3 County)</td>
<td>Offsite Liaisons (1 State/3 County)</td>
<td>N/A – Positions Retained</td>
</tr>
</tbody>
</table>
ATTACHMENT 1
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

<table>
<thead>
<tr>
<th>Current PNP Augmented ERO Positions</th>
<th>Proposed Post-Shutdown Augmented ERO Positions</th>
<th>Justification for Elimination¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOF Communicator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>State/County Communicator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Security Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Security Staff</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>EOF Admin Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
</tbody>
</table>

Joint Information Center

<table>
<thead>
<tr>
<th>Current PNP Augmented ERO Positions</th>
<th>Proposed Post-Shutdown Augmented ERO Positions</th>
<th>Justification for Elimination¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOF Admin Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>JIC Manager</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Technical Advisor</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>JIC Logistics Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Information Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>JIC Media Liaison</td>
<td>JIC Media Liaison</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>JIC Log Keeper</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>JIC Technical Assistant</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Press Release Writer</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Media Monitor</td>
<td>Media Monitor</td>
<td>N/A – Position Retained</td>
</tr>
<tr>
<td>Inquiry Response Coordinator</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
<tr>
<td>Public Inquiry Responders (2)</td>
<td>Public Inquiry Responder</td>
<td>Reduced responsibilities can be performed by remaining positions</td>
</tr>
<tr>
<td>JIC Admin Support</td>
<td>--</td>
<td>Tasks transferred</td>
</tr>
</tbody>
</table>

¹ A dash (--) Indicates the position is proposed for elimination upon implementation of the Post-Shutdown Emergency Plan.
² Detailed information regarding the proposed elimination of each position is provide in Section 3.2.2.1 through 3.2.2.4 and Attachment 6.

The intent of Table 1 is to compare the current augmented ERO positions against the proposed post-shutdown augmented ERO positions. As an example, the TSC Reactor Engineer is a position that is proposed for elimination in the post-shutdown ERO, because in a permanently shut down and defueled condition the responsibilities associated with a reactor core no longer need to be maintained. The proposed elimination of augmented ERO positions are described in greater detail in the following sections. Those augmented ERO positions identified in procedures as typical minimum staffing positions to declare the ERFs operational are described in greater detail. Other augmented ERO positions proposed for elimination, but not identified in procedure as typical minimum staffing positions to declare the ERFs operational, are also addressed in the following sections.

Additional analysis for each of the augmented ERO staffing changes that impact the content of PNP SEP Figure 5-2 was previously addressed by Major Functional Area in Sections 3.2.1.1 through 3.2.1.10.

Attachment 6 contains an analysis of all augmented ERO positions proposed for elimination and evaluates the transfer of tasks to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.
3.2.2.1 Technical Support Center

The TSC has been designed to meet the intent of the guidance in NUREG-0696, “Functional Criteria for Emergency Response Facilities,” and the clarification in NUREG-0737, Supplement 1, “Clarification of TMI Action Plan Requirements,” as applicable. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the TSC will continue to be located in the area immediately adjacent to the Control Room. The changes proposed to the PNP SEP do not involve any physical modifications to, or layout/configuration changes in, the TSC.

The current PNP SEP is intended to address the risks to public health and safety inherent with an operating reactor. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible.

The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform. Therefore, the TSC Manager, Operations Coordinator, TSC Reactor Engineer, TSC Engineers, TSC Communicator, Radiological Assessment Coordinator, Maintenance Coordinator, TSC Admin Support, and TSC Log Keeper positions can be eliminated without placing an undue burden on the remaining ERO positions in the TSC and without increasing the risk to public health and safety. Attachment 6 contains an analysis of all augmented ERO positions being eliminated and evaluates the transfer of tasks to remaining augmented ERO positions following permanent cessation of power operations. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety, comply with the PNP SEP, site commitments, and applicable regulations.

The proposed staffing changes eliminate the following ERO positions in the TSC described in procedure as typical minimum staffing that could be considered necessary to declare the TSC operational: the Reactor Engineer (Technical Support - Core/Thermal Hydraulics), TSC Engineers (Electrical, I&C, and Mechanical), and the Radiological Assessment Coordinator.

TSC Reactor Engineer

The primary duties of the TSC Reactor Engineer include: monitoring plant conditions for any indication of core damage, assisting in clarifying core parameter information to the Engineering Team, and assisting in the implementation of Severe Accident Management Guidelines. In a permanently shut down and defueled condition, responsibilities associated with a reactor core no longer need to be maintained. Elimination of the TSC Reactor Engineer position will have no effect on emergency response in a permanently shut down and defueled condition because the position is not required to assess the condition of fuel in the SFP during an emergency. The TSC Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary or possible in a permanently shut down and defueled condition.

TSC Engineers (Electrical, I&C, and Mechanical)

The primary duties of the TSC Engineer positions include responding to engineering requests from the Engineering Coordinator, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by the Engineering Coordinator. The Engineering Coordinator is tasked with performing
an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant.

With respect to responding to engineering requests from the Engineering Coordinator, this function will continue to be performed by augmenting qualified engineering resources. The Engineering Coordinator will continuously evaluate the need for engineering resources and coordinate with the EOF Technical Advisor to call in qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmenting positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the permanently shut down and defueled condition. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform. Attachment 6 contains an analysis of the TSC Engineer positions and evaluates the transfer of tasks to remaining ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

Radiological Assessment Coordinator

The primary duties of the Radiological Assessment Coordinator is to coordinate Radiation Protection activities, including onsite radiological assessment, personnel exposure control and radiation protection programs. The Radiological Assessment Coordinator functions overlap with those of the Rad/Chem Coordinator in the OSC (position maintained in the post-shutdown ERO). In an operating plant, the number and type of Radiation Protection activities supports this redundancy and overlap in function. In the permanently shut down and defueled condition, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant and redundant functions is no longer necessary to ensure performance. The Radiological Assessment Coordinator position can be eliminated without increasing the risk to public health and safety because the major task of coordinating Radiation Protection activities is provided by the Rad/Chem Coordinator in the OSC.

In addition to the positions described above, the following TSC positions are also proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- TSC Manager
- Operations Coordinator
- TSC Maintenance Coordinator
- TSC Communicator
- TSC Admin Support
- TSC Log Keeper

The TSC Manager is currently responsible for ensuring the TSC is activated in accordance with applicable procedures and ensuring notification of the ERO has been made. This position also advises the Emergency Plant Manager on proposed corrective actions and emergency
classification from a technical standpoint (i.e., plant system damage, core damage, etc.).
Functional responsibilities of the TSC Manager position that remain applicable in a permanently
shut down and defueled condition will be reassigned to remaining positions in the TSC.

The primary duties of the Operations Coordinator are to monitor plant data communications
between the Control Room and other ERFs, inform the TSC of the overall plant condition and
significant changes to system and equipment status, provide technical assistance to the Shift
Manager, monitor fission product barrier and plant status, and coordinate TSC efforts in support of
Control Room actions. These duties are either no longer necessary in a permanently shut down
and defueled condition, or they will be performed by other members of the post shutdown ERO,
including the Emergency Plant Manager and the Engineering Coordinator.

The primary duties of the TSC Maintenance Coordinator are to communicate requests for repair
and corrective action teams to the OSC, and assist the OSC in prioritizing the requests. These
duties are either no longer necessary in a permanently shut down and defueled condition, or they
will be performed by other members of the post shutdown ERO.

The elimination of the TSC Admin Support, TSC Communicator, and TSC Log Keeper positions
does not impact the capabilities of the on-shift staffing or augmented response. The TSC will
continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions
eliminated as a result of the changes will be reassigned to remaining positions, as necessary. The
proposed augmented ERO staffing reductions continue to address the risks to public health and
safety, comply with the PNP Emergency Plan, site commitments, and applicable regulations.

3.2.2.2 Operations Support Center

The OSC has been designed to meet the intent of the guidance in NUREG-0696, “Functional
Criteria for Emergency Response Facilities,” and the clarification in NUREG-0737, Supplement 1,
“Clarification of TMI Action Plan Requirements,” as applicable. Following permanent cessation of
power operations and permanent removal of fuel from the reactor vessel, the OSC will continue to
be located near the men's locker room in the Service Building. The proposed changes to the PNP
SEP do not involve any physical modifications to, or layout/configuration changes in, the OSC.

The OSC Manager is responsible for ensuring adequate staffing of the OSC to support the
emergency; working with the Emergency Plant Manager to set priorities for the OSC; and directing
the activities of the OSC to support the emergency response. If at any time the OSC Manager
determines additional manpower is necessary to accomplish the mission of the OSC, the OSC
Manager will contact the EOF Technical Advisor to arrange for augmentation by additional
personnel to support the emergency response functions of the OSC.

In the permanently shut down and defueled condition, the primary functions of the OSC will remain
dispatching of, and accounting for, Repair and Corrective Action Teams and dispatching of Onsite
and Offsite Monitoring Teams. The OSC Craft functions will continue to be performed by
augmenting qualified resources. The OSC Manager will continue to continuously evaluate the
need for resources and coordinate with the EOF Technical Advisor to call in additional assistance.
OSC resources will continue to be augmented positions with specific training and qualification
requirements for assigned personnel in accordance with the site training program. The required
training courses and requalification frequencies will be unchanged in the post-shutdown condition.

The proposed staffing changes do not eliminate any ERO positions in the OSC described in
procedure as typical minimum staffing that could be considered necessary to declare the OSC
operational. The following OSC positions are proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- OSC Operations Support
- Work Control Coordinator
- Mechanical and I&C/Electrical Coordinators
- OSC Log Keeper
- OSC Radio Communicator
- OSC Admin Support

Additionally, the proposed staffing changes eliminate the augmenting Radwaste Operator, one augmenting electrical technician, and the augmenting I&C Technician. These positions are included in PNP SEP Figure 5-2 as 60-minute augmenting responders. Electrical Maintenance Technician duties include providing repairs and corrective actions for plant electrical equipment, as directed. I&C Technician duties include providing repairs and corrective actions to plant instrumentation, as directed. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. Therefore, the duties and coverage required for these positions are reduced.

The proposed augmented ERO staffing continues to address the risks to public health and safety, comply with the PNP Emergency Plan, site commitments, and applicable regulations.

In the permanently shut down and defueled condition, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The primary events of concern in the immediate post-shutdown and defueled condition will be a dropped cask in the SFP, a FHA, and a loss of SFP cooling and/or water inventory. Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). These strategies will continue to be maintained as a license condition. OSC staff is not relied upon to implement SFP inventory makeup.

Restoration of equipment supporting SFP cooling and inventory will be the primary focus of emergency mitigation actions for the TSC and OSC in a permanently shut down and defueled condition. Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. The proposed changes do not impact the capability to assess and monitor actual or potential offsite consequences of a radiological emergency or provide information to offsite authorities in a timely manner. Therefore, the OSC Operations Support, Work Control Coordinator, Mechanical and I&C/Electrical Coordinators, OSC Log Keeper, OSC Radio Communicator, and OSC Admin Support positions can be eliminated without placing an undue burden on the remaining ERO positions in the OSC and without increasing the risk to public health and safety.

3.2.2.3 Emergency Operations Facility

The EOF functions to maintain overall management of Entergy’s emergency response and recovery resources; evaluate, coordinate, and communicate emergency response activities with Federal, State, and County emergency response organizations; evaluate offsite accident conditions; and make recommendations to offsite agencies regarding protective actions. Federal, State, and County representatives are provided space and communications at the EOF and staff this facility at an Alert or higher classification.
The EOF has been designed to meet the intent of the guidance in NUREG-0696, “Functional Criteria for Emergency Response Facilities,” and the clarification in NUREG-0737, Supplement 1, “Clarification of TMI Action Plan Requirements,” as applicable. Following permanent cessation of power operations, the EOF will continue to be located in downtown Benton Harbor, approximately 16 miles south southwest from the plant site. The proposed changes to the PNP SEP do not involve any physical modifications to, or layout/configuration changes in, the EOF.

The EOF maintains extensive communications capability with all ERFs and direct links are established between the EOF, the State and County Emergency Operations Centers (EOCs), and the JIC to provide up-to-date emergency status reports. The proposed changes to the PNP SEP do not involve changes to the ability of offsite authorities to report to the EOF or the JIC, and as a result, do not impact the ability of the offsite authorities to mobilize to, or operate from, the EOF and JIC.

When activated, the Emergency Director reports to the EOF and directs the activities of the augmented ERO throughout the emergency and until the recovery activities have been terminated. The Emergency Director, or a designated alternate, issues periodic status reports of the event to offsite representatives located in the EOF. The Radiological Assessment Coordinator and Technical Advisor will provide and interpret plant information to the offsite representatives in the EOF. Additionally, technical support staff are dispatched to the State and County EOCs when requested and appropriate, or generally, during an Alert or higher declaration to act as a liaison with the plant technical staff so the magnitude of the emergency can be more clearly conveyed to the EOCs staff. The proposed changes do not reduce the ability of PNP to provide the necessary information regarding the status and progression of an event or in the frequency at which event information updates are provided. Nor do the changes impact the ability to dispatch additional technical support to the EOCs. As a result, the proposed changes do not impact the ability of PNP to communicate with the OROs.

Centralized coordination of the offsite radiological assessment effort with all organizations interested in, and/or performing, assessments is necessary to ensure that the data and its interpretation are reviewed by PNP and OROs with monitoring and assessment responsibilities. The number and type of organizations performing this effort vary with time and following emergency declarations and offsite notification. Initially, plant emergency response personnel are the only organization performing this function and they are directed from, and their results evaluated, at the EOF. State and Federal response agencies would augment plant assessment efforts. The proposed changes to the PNP SEP do not impact the ability of OROs to monitor and assess a potential release and effectively implement their emergency plans.

PNP will continue to maintain the capability to display plant and meteorological data in the EOF, maintain offsite monitoring equipment at the EOF and maintain the current dose assessment capabilities at the EOF. Additionally, PNP will maintain a goal of sixty (60) minutes after declaration of an emergency to activate the EOF.

The proposed staffing changes do not eliminate any ERO positions in the EOF described in procedure as typical minimum staffing that could be considered necessary to declare the EOF operational. The following EOF positions are proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- EOF Manager
- EOF Log Keeper
ATTACHMENT 1
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

- Lead Offsite Liaison
- Administration and Logistics Coordinator
- IT Specialist
- EOF Communicator
- State/County Communicator
- Security Coordinator
- Security Staff
- EOF Admin Support

The proposed elimination of the EOF staffing listed above does not impact the capabilities of the on-shift staffing or augmented response. The positions can be eliminated without placing an undue burden on the remaining ERO positions in the EOF and without increasing the risk to public health and safety. The EOF will continue to be activated at an Alert or higher declaration. Functional responsibilities of the positions proposed for elimination will be reassigned to remaining positions. The proposed augmented ERO staffing continue to address the risks to public health and safety, comply with the PNP SEP, site commitments, and applicable regulations. The proposed changes to the ERO staffing in the EOF do not impact the ability of the State and County response organizations to effectively implement their FEMA-approved REP Plans. Additional discussion of the potential impact on OROs is included in Section 3.2.3.

3.2.2.4 Joint Information Center

The PNP JIC is co-located with the EOF in Benton Harbor. The JIC provides a location for the news media to receive information from all involved agencies and companies during an emergency and provide it to the public. The JIC is equipped to accommodate the news media for large briefings and conferences and contains extensive communications systems. Media monitoring and rumor control are also accomplished at the JIC, allowing Entergy and State representatives to address incorrect information or rumors. Responses to media telephone inquiries are also addressed at the JIC.

The JIC meets the intent of the guidance in Planning Standard G of NUREG-0654. Following permanent cessation of operations and permanent removal of fuel from the reactor vessel, the JIC will continue to be located in Benton Harbor. The proposed changes to the PNP SEP do not involve any physical modifications to, or layout/configuration changes in, the JIC.

The following JIC positions are proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- JIC Manager
- Technical Advisor
- JIC Logistics Coordinator
- Information Coordinator
- JIC Log Keeper
- JIC Technical Assistant
- Press Release Writer
- Inquiry Response Coordinator
- JIC Admin Support

In the permanently shut down and defueled condition, media briefings and rumor control will continue to be conducted regularly during an emergency to provide accurate and timely information to the public. The proposed JIC staffing changes described above do not impact the capabilities of
the on-shift staffing or augmented response. The positions can be eliminated without placing an undue burden on the remaining ERO positions in the JIC and without increasing the risk to public health and safety. Functional responsibilities of the positions proposed for elimination will be reassigned to remaining positions. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety, comply with the PNP SEP, site commitments, and applicable regulations.

3.2.3 Impact on Off-Site Response Organizations

Because of the location of PNP, the planning and responsibilities at the State and County level involve coordination with the State of Michigan, Berrien County, Allegan County, and Van Buren County. Table 7-1 of the PNP SEP describes the extensive communications network maintained between PNP, Federal, State, and County agencies as a means of promptly notifying and maintaining communications with appropriate authorities. The coordination effort with offsite authorities is initiated by notifying the State of Michigan and Van Buren County and providing them with key information regarding an emergency. The proposed changes to the PNP SEP do not involve changes to this communications network, and as a result, do not impact the ability of PNP to promptly notify and initiate coordination with the offsite authorities.

Formal offsite REP plans, approved by the FEMA in accordance with 44 CFR 350, are required to be maintained in effect until the NRC approves an exemption from formal offsite emergency preparedness requirements. Because the changes proposed by ENO, specifically in regards to ERO staffing of the EOF and JIC, have the potential to adversely impact the effective implementation of the State and County REP plans, the proposed changes to the PNP SEP were evaluated for impacts on the ability of the State and County response organizations to effectively implement their FEMA-approved REP Plans. This evaluation included a review of the State of Michigan Radiological Emergency Response Plan, the Berrien County Radiological Emergency Response Plan, the Allegan County Radiological Emergency Response Plan, and the Van Buren County Emergency Preparedness Plan. The review of the State and County REPs did not identify any specific references to PNP ERO positions proposed for elimination. Therefore, the conclusion was made that the proposed changes have no effect on the State or counties’ ability to implement their FEMA-approved REP plans. On June 6, 2017, a meeting with these various Federal, State, and local agencies was conducted to discuss the proposed changes. Feedback from the State and local agencies is provided in Attachment 8.

PNP technical support staff is dispatched to the State and County EOCs when requested and appropriate, or generally, during a SAE or GE to act as a liaison with the plant technical staff to clearly convey the magnitude of the emergency to the EOC’s staff. These positions are retained in the Post-Shutdown ERO. The proposed changes do not reduce the ability of PNP to provide the necessary information regarding the status and progression of an event or in the frequency at which event information updates are provided. Nor do the changes impact the ability to dispatch additional technical support to the EOCs. As a result, the proposed changes do not impact the ability of PNP to communicate with the OROs or the ability of the State and County response organizations to effectively implement their FEMA-approved REP Plans.

3.3 Summary

ENO performed an analysis to evaluate the ability of the proposed post-shutdown on-shift staffing to implement all regulatory required emergency plan functions in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. Additionally, an analysis of all augmented ERO positions was performed to analyze the transfer of tasks from
those positions proposed for elimination to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor.

The proposed augmented ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated within approximately 60 minutes of an Alert or higher declaration. The remaining post-shutdown functional responsibilities of the positions proposed for elimination are being reassigned to remaining positions. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety and comply with the PNP SEP, site commitments, and applicable regulations.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

On-Shift and Augmented ERO Staffing

The specific standards for establishing an onsite emergency organization to respond to emergency events appears in 10 CFR 50.47(b) and 10 CFR 50, Appendix E, Section IV.A. Specifically:

- 10 CFR 50.47(b)(1): 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.

- 10 CFR 50.47(b)(2): 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.

- 10 CFR 50, Appendix E Section IV.A.1: [E-Plans must contain] A description of the normal plant operating organization.

- 10 CFR 50, Appendix E Section IV.A.2: [E-Plans must contain] A description of the onsite emergency response organization with a detailed discussion of:
  - Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency;
  - Plant staff emergency assignments;
  - Authorities, responsibilities, and duties on an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures;

NUREG-0654 (Reference 4), 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.”
10 CFR Part 50, Appendix E, 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.”

NSIR/DPR-ISG-01, “Interim Staff Guidance – Emergency Planning for Nuclear Power Plants” (Reference 6) provides information relevant to performing the on-shift staffing analysis. The ISG states that NEI 10-05, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” is an acceptable methodology for performing the staffing analysis. 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).

NRC Regulatory Guide 1.101, “Emergency Response Planning and Preparedness for Nuclear Power Reactors,” (Reference 8) Section C, states 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."

Regulatory Guide 1.219, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors,” November 2011 (Reference 9), 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.

Regulatory Issue Summary 2005-02, "Clarifying the Process for Making Emergency Plan Changes," Revision 1 (Reference 10) was issued by the NRC to clarify the meaning of "decrease in effectiveness" and the process for making changes to emergency plans, and to provide some examples of changes that are considered to be a decrease in effectiveness.

4.2 Precedent

The requested changes to the on-shift staffing and augmented ERO staffing are similar in nature to the post-shutdown changes approved by the NRC and implemented by Vermont Yankee Nuclear Power Station (Reference 11) and Ft. Calhoun Station (Reference 12).

4.3 No Significant Hazards Consideration

Pursuant to 10 CFR 50.92, Entergy Nuclear Operations, Inc. (ENO) has reviewed the proposed changes and concludes that the changes do not involve a significant hazards consideration because the proposed changes satisfy the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed changes would revise the Palisades Nuclear Plant (PNP) Site Emergency Plan (SEP) to reduce the number of on-shift and augmented emergency response organization (ERO)
positions commensurate with the hazards associated with a permanently shut down and defueled
classification.

The discussion below addresses each of these criteria and demonstrates that the proposed
amendment does not constitute a significant hazard.

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

   Response: No.

   The proposed changes to the PNP SEP do not impact the function of plant structures,
systems, or components (SSCs). The proposed changes do not affect accident initiators or
precursors, nor does it alter design assumptions. The proposed changes do not prevent the
ability of the on-shift staff and augmented ERO to perform their intended functions to
mitigate the consequences of any accident or event that will be credible in the permanently
shut down and defueled condition. The proposed changes only remove positions that will
no longer be credited in the PNP SEP.

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

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

   Response: No.

   The proposed changes reduce the number of on-shift and augmented ERO positions
commensurate with the hazards associated with a permanently shut down and defueled
facility. The proposed changes do not involve installation of new equipment or modification
of existing equipment, so that no new equipment failure modes are introduced. Also, the
proposed changes do not result in a change to the way that the equipment or facility is
operated so that no new accident initiators are created.

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

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

   Response: No.

   Margin of safety is associated with confidence in the ability of the fission product barriers
(i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure)
to limit the level of radiation dose to the public. The proposed changes are associated with
the PNP SEP and do not impact operation of the plant or its response to transients or
accidents. The change does not affect the Technical Specifications. The proposed changes
do not involve a change in the method of plant operation, and no accident analyses will be
affected by the proposed changes. Safety analysis acceptance criteria are not affected by
the proposed changes. The revised PNP SEP will continue to provide the necessary
response staff with the proposed changes.
Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

4.4 Conclusion

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.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10 CFR 51.22(c)(9) as follows:

(i) The amendment involves no significant hazards consideration.

As described in Section 4.3 of this evaluation, the proposed changes involve no significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a change in the type or amount of effluent release offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, ENO concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 REFERENCES


7. NEI 10-05, Rev. 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities” (ADAMS Accession Number ML111751698)


12. Letter, USNRC to Omaha Public Power District, “Fort Calhoun Station – Unit 1 – Issuance of Amendment Re: Revise Emergency Plan to Address the Permanently Defueled Condition (CAC No. MF8326),” dated July 27, 2017 (ADAMS Accession Number ML17123A348)

13. Letter, USNRC to ENO, “Palisades Nuclear Plant – Approval of Certified Fuel Handler Training and Retraining Program (CAC No. MF9500),” dated August 21, 2017 (ADAMS Accession Number ML17151A350)
Attachment 2

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

Tabular Summary of Proposed Changes to the Palisades Nuclear Plant Site Emergency Plan

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<td>Palisades Nuclear Plant Post-Shutdown Emergency Plan&lt;br&gt;Procedure No SEP&lt;br&gt;Revision TBD</td>
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<td>New Procedure/Revision Summary</td>
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<td>Table of Contents, 2.4.3</td>
<td>Objectives of the Palisades Site Emergency Plan</td>
<td>Objectives of the Palisades Post-Shutdown Emergency Plan</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 2.5.1</td>
<td>Site Emergency Plan Supplement 1</td>
<td>Post-Shutdown Emergency Plan Supplement 1</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 2.5.2</td>
<td>Site Emergency Plan Supplement 2</td>
<td>Post-Shutdown Emergency Plan Supplement 2</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 3.0</td>
<td>Site Emergency Plan Summary</td>
<td>Post-Shutdown Emergency Plan Summary</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 3.1</td>
<td>Emergency Plan Steps</td>
<td>Post-Shutdown Emergency Plan Steps</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 4.0</td>
<td>Emergency Conditions</td>
<td>Post-Shutdown Emergency Conditions</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, 5.2.7</td>
<td>Shift Engineers/Shift Technical Advisors (SE/STA)</td>
<td>DELETED</td>
<td>The Shift Engineer/Shift Technical Advisor will not exist in the post-shutdown on-shift staff.</td>
</tr>
<tr>
<td>Table of Contents, 8.3</td>
<td>Review and Updating of the Emergency Plan and Implementing Procedures</td>
<td>Review and Updating of the Post-Shutdown Emergency Plan and Implementing Procedures</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Table of Contents, Supp 1</td>
<td>SEP, Supp 1, “Site Emergency Plan Supplement 1 – EAL Wall Charts” (Note: SEP Supp 1 is under separate)</td>
<td>PSEP, Supp 1, “Post-Shutdown Emergency Plan Supplement 1 – EAL Wall Charts” (Note: PSEP Supp 1 is under separate)</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
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<td>Reason for Change</td>
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<tr>
<td>Table of Contents, Supp 2</td>
<td>SEP Supp 2, “Evacuation Time Estimates,” Revision 1, August 2012 (Note: SEP Supp 2 will be maintained in the same binder as the Site Emergency Plan with its own revisions number.)</td>
<td>PSEP Supp 2, “Evacuation Time Estimates,” Revision 1, August 2012 (Note: PSEP Supp 2 will be maintained in the same binder as the Post-Shutdown Emergency Plan with its own revisions number.)</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Reference Documents, 62</td>
<td>SEP, Supp 1, “Site Emergency Plan Supplement 1 – EAL Wall Charts” (Note: SEP Supp 1 is under separate cover with its own revision number.)</td>
<td>PSEP, Supp 1, “Post-Shutdown Emergency Plan Supplement 1 – EAL Wall Charts” (Note: PSEP Supp 1 is under separate cover with its own revision number.)</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Reference Documents, 63</td>
<td>SEP Supp 2, “Evacuation Time Estimates,” Revision 1, August 2012 (Note: SEP Supp 2 will be maintained in the same binder as the Site Emergency Plan with its own revisions number.)</td>
<td>PSEP Supp 2, “Evacuation Time Estimates,” Revision 1, August 2012 (Note: PSEP Supp 2 will be maintained in the same binder as the Post-Shutdown Emergency Plan with its own revisions number.)</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Reference Documents, 65</td>
<td>Entergy Procedure EN-TQ-110, “Evacuation Time Estimates,” Revision 1, August 2012 (Note: SEP Supp 2 will be maintained in the same binder as the Site Emergency Plan with its own revisions number.)</td>
<td>P-EN-TQ-110, “Emergency Response Organization Training”</td>
<td>Fleet procedure revised to be site specific following shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
<td>After (Pending Revision Number)</td>
<td>Reason for Change</td>
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<tr>
<td>“Emergency Response Organization Training”</td>
<td>Organization Training”</td>
<td>specific following shutdown.</td>
<td></td>
</tr>
<tr>
<td>Reference Documents, 69</td>
<td>Palisades Nuclear Station On-Shift Staffing Analysis, Revision 4, dated July 28, 2017 conducted in accordance with NEI 10-05 and required by 10CFR50, Appendix E, Section IV.A</td>
<td>Palisades Nuclear Plant Analysis of Proposed Post-Shutdown On-Shift Staffing, Revision 0, dated August, 2017 conducted as required by 10CFR50, Appendix E, Section IV.A</td>
<td>Updated for Post-Shutdown Analysis.</td>
</tr>
<tr>
<td>1.0, Introduction, 1st paragraph</td>
<td>The purpose of the Palisades Site Emergency Plan (SEP) is to aid in protecting members of the general public, persons temporarily visiting the site, and site employees.</td>
<td>The purpose of the Palisades Post-Shutdown Emergency Plan (PSEP) is to aid in protecting members of the general public, persons temporarily visiting the site, and site employees.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>1.0, Introduction, last paragraph</td>
<td>Detailed procedures concerning the implementation of the Site Emergency Plan are not included here, but are included in the Palisades Nuclear Plant Emergency Implementing Procedures and Entergy Fleet Emergency Preparedness Procedures. These procedures describe the duties and actions of individuals and groups in the event of an emergency and also</td>
<td>Detailed procedures concerning the implementation of the Post-Shutdown Emergency Plan are not included here, but are included in the Palisades Nuclear Plant Emergency Implementing Procedures. These procedures describe the duties and actions of individuals and groups in the event of an emergency and also serve as an interface of the Post-Shutdown</td>
<td>Reflect the change to Post-Shutdown and conversion of Entergy Fleet procedures to site-specific procedures.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
<td>After (Pending Revision Number)</td>
<td>Reason for Change</td>
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</tr>
<tr>
<td>1.1.9, Control Room</td>
<td>The location at Palisades Plant from which the Reactor and its auxiliary systems are controlled. The assembly area for Control Room personnel.</td>
<td>The location at Palisades Plant from which systems are controlled. The assembly area for Control Room personnel.</td>
<td>After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel.</td>
</tr>
<tr>
<td>1.1.10, Control Room Personnel</td>
<td>Shift Manager, Nuclear Control Operators, Nuclear Plant Operators, Shift Engineer/Shift Technical Advisor, and Control Room Supervisor.</td>
<td>The credited on-shift complement consists of a Shift Manager (qualified as a Certified Fuel Handler (CFH)) and two (2) Non-Certified Operators.</td>
<td>Palisades will no longer be an operating nuclear power plant. The following Control Room on-shift positions will be eliminated:</td>
</tr>
</tbody>
</table>
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   - Shift Engineer/Shift Technical Advisor  
  - Nuclear Control Operators                                                                                                                                                                                                                     | Following permanent cessation of power operations and removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one (1) Shift Manager and two (2) Non-Certified Operators. Use of the title, Non-Certified Operations will be eliminated. |
### PNP Emergency Plan Change Summary

<table>
<thead>
<tr>
<th>Emergency Plan Section</th>
<th>Before (Rev. 29)</th>
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<th>Reason for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.16</td>
<td>Specific procedures providing specific actions to implement the Site Emergency Plan in order to mitigate or terminate an emergency situation.</td>
<td>Specific procedures providing specific actions to implement the Post-Shutdown Emergency Plan in order to mitigate or terminate an emergency situation.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>2.1, General Information and Site Description, 2nd paragraph</td>
<td>The design of the Palisades Nuclear Plant is that of a pressurized water type nuclear steam supply system supplied and manufactured by Combustion Engineering. The system uses chemical shims and control rods for reactivity control and U-tube steam generators. Maps identifying Palisades Plant facilities are provided in Figures 2-2 and 2-3.</td>
<td>The Palisades Nuclear Power Plant (PNP) ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). On January 4, 2017, Entergy Nuclear Operations (ENO) submitted a certification of permanent cessation of power operations pursuant to 10 CFR 50.82(a)(1)(i). ENO has submitted written certification to the NRC in accordance with 10 CFR 50.82(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9) certifying that fuel has been permanently removed from the reactor vessel. Upon</td>
<td>Palisades will no longer be an operating nuclear power plant. The Site description has been revised to indicate the permanently shut down and defueled condition.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
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<tr>
<td>2.1. General Information and Site Description, 3rd paragraph (new)</td>
<td></td>
<td>With irradiated fuel being stored in the Spent Fuel Pool and the Independent Spent Fuel Storage Installation (ISFSI), the reactor coolant system and secondary systems have no function related to the storage of the irradiated fuel. Therefore, the postulated accidents involving failure or malfunction of the reactor and reactor coolant system or secondary systems are no longer applicable.</td>
<td>Palisades will no longer be an operating nuclear power plant. The Site description has been revised to indicate the permanently shut down and defueled condition.</td>
</tr>
<tr>
<td>2.2, Population Distribution and Evacuation Times</td>
<td>The area within a 10-mile radius surrounding the Palisades Plant is designated as the plume exposure Emergency Planning Zone (EPZ). A comprehensive population study was prepared in August 2012 by KLD Engineering. The Evacuation Time Estimates for the plume EPZ are adopted as a progeny procedure to Palisades Site Emergency Plan. See</td>
<td>The area within a 10-mile radius surrounding the Palisades Plant is designated as the plume exposure Emergency Planning Zone (EPZ). A comprehensive population study was prepared in August 2012 by KLD Engineering. The Evacuation Time Estimates for the plume EPZ are adopted as a progeny procedure to Palisades Post-Shutdown Emergency</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>2.4.3 Objectives of the Palisades Site Emergency Plan</td>
<td>SEP Supp 2, &quot;Evacuation Time Estimates.&quot;</td>
<td>Objectives of the Palisades Post-Shutdown Emergency Plan</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>2.5.1 Site Emergency Plan Supplement 1</td>
<td>Site Emergency Plan Supplement 1 - &quot;EAL Wall Charts&quot; contains the Palisades Emergency Action Levels in a wall chart format. It is part of the Site Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Site Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the SEP's revision number. The &quot;Site Emergency Plan Supplement 1 - EAL Wall Charts&quot; will be maintained in the same binder as the Site Emergency Plan.</td>
<td>Post-Shutdown Emergency Plan Supplement 1 - &quot;EAL Wall Charts&quot; contains the Palisades Emergency Action Levels in a wall chart format. It is part of the Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP's revision number.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>2.5.2 Site Emergency Plan Supplement 2</td>
<td>Site Emergency Plan Supplement 2 - &quot;Evacuation Time Estimates (Revision 1, August 2012)&quot;</td>
<td>Post-Shutdown Emergency Plan Supplement 2 - &quot;Evacuation Time Estimates.&quot;</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<td>contains the Palisades updated Evacuation Time Estimates study (Revision 1, August 2012). It is part of the Site Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Site Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the SEP’s revision number. The Site Emergency Plan Supplement 2 - &quot;Evacuation Time Estimates&quot; will be maintained in the same binder as the Site Emergency Plan.</td>
<td>Estimates (Revision 1, August 2012)&quot; contains the Palisades updated Evacuation Time Estimates study (Revision 1, August 2012). It is part of the Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP’s revision number. The Post-Shutdown Emergency Plan Supplement 2 - &quot;Evacuation Time Estimates&quot; will be maintained in the same binder as the Post-Shutdown Emergency Plan.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>2.5.4, Related Plans, Programs, and Procedures, 1st paragraph</td>
<td>Several plans, programs, and procedures have been developed to assure the safe operation of the Plant. The Site Emergency Plan and Emergency Implementing Procedures have been written to coordinate these plans with other programs and procedures. During emergency situations, the coordination and utilization of all plans and procedures are essential.</td>
<td>Several plans, programs, and procedures have been developed to assure the safe operation of the Plant. The Post-Shutdown Emergency Plan and Emergency Implementing Procedures have been written to coordinate these plans with other programs and procedures. During emergency situations, the coordination and utilization of all plans and procedures are essential.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>2.5.4, Related Plans, Programs, and Procedures, 2nd paragraph</td>
<td>The Safeguards Contingency Procedures have been coordinated</td>
<td>The Safeguards Contingency Procedures have been coordinated</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
</tbody>
</table>
# PNP Emergency Plan Change Summary

<table>
<thead>
<tr>
<th>Emergency Plan Section</th>
<th>Before (Rev. 29)</th>
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<tbody>
<tr>
<td></td>
<td>with the Site Emergency Plan and Emergency Implementing Procedures to minimize the consequences of an emergency situation. Security procedures contain an explanation of the duties and responsibilities for security personnel in the event of an emergency.</td>
<td>with the Post-Shutdown Emergency Plan and Emergency Implementing Procedures to minimize the consequences of an emergency situation. Security procedures contain an explanation of the duties and responsibilities for security personnel in the event of an emergency.</td>
<td></td>
</tr>
<tr>
<td>2.5.4, Related Plans, Programs, and Procedures, 4th paragraph</td>
<td>The Palisades Emergency Operating Procedures have been developed to control Plant operation during emergency situations. These emergency procedures work in conjunction with the Emergency Plan Implementing Procedures.</td>
<td>DELETED</td>
<td>EOPs are not applicable in the permanently shut down and defueled condition.</td>
</tr>
</tbody>
</table>
| 3.0, title and 1st paragraph | **SITE EMERGENCY PLAN SUMMARY**  
The Emergency Plan establishes the basic steps that will be used to determine the response of the emergency organization for each of four emergency classes. The emergency classes are as follows: Unusual Event, Alert, Site Area Emergency, and General Emergency. The conditions that must exist for the declaration of a specific emergency class are presented in the Site Emergency Plan, Supplement 1 - EAL Wall Charts. | **POST-SHUTDOWN EMERGENCY PLAN SUMMARY**  
The Post-Shutdown Emergency Plan establishes the basic steps that will be used to determine the response of the emergency organization for each of four emergency classes. The emergency classes are as follows: Unusual Event, Alert, Site Area Emergency, and General Emergency. The conditions that must exist for the declaration of a specific emergency class are presented in the Post-Shutdown Emergency Plan, Supplement 1 - EAL Wall Charts. | Reflect the change to Post-Shutdown.                                                                                                                                                    |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>3.0, 2(^{nd}) paragraph</td>
<td>The declaration of each class will lead to specific notification of offsite authorities. Emergency facilities shall be activated as described in Table 3-1, &quot;Emergency Classifications and the Level of Response by Participating Groups,&quot; and staffed as presented in Section 5 of the Palisades Site Emergency Plan. In response to a particular event, certain protective actions may be initiated or certain offsite agencies may be activated. These actions are detailed in Section 6 of the Palisades Site Emergency Plan. Palisades maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level.</td>
<td>The declaration of each class will lead to specific notification of offsite authorities. Emergency facilities shall be activated as described in Table 3-1, &quot;Emergency Classifications and the Level of Response by Participating Groups,&quot; and staffed as presented in Section 5 of the Palisades Post-Shutdown Emergency Plan. In response to a particular event, certain protective actions may be initiated or certain offsite agencies may be activated. These actions are detailed in Section 6 of the Palisades Post-Shutdown Emergency Plan. Palisades maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.0, 3(^{rd}) paragraph</td>
<td>For emergencies that result in (1) the release of radioactive materials greater than specified levels, or (2) the degradation of barriers to the release of radioactive materials, assessments of the offsite consequences or the projected</td>
<td>For emergencies that result in (1) the release of radioactive materials greater than specified levels, or (2) the degradation of barriers to the release of radioactive materials, assessments of the offsite consequences or the projected</td>
<td>Reflect the change to Post-Shutdown.</td>
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<td>Emergency Plan Section</td>
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<td>offsite consequences shall be made. These assessments will be transmitted to the offsite authorities responsible for taking protective actions on behalf of the general public. Recommendations to these offsite authorities will be based on the protective actions identified in Table 6-2 from the Palisades Site Emergency Plan.</td>
<td>offsite consequences shall be made. These assessments will be transmitted to the offsite authorities responsible for taking protective actions on behalf of the general public. Recommendations to these offsite authorities will be based on the protective actions identified in Table 6-2 from the Palisades Post-Shutdown Emergency Plan.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.1</td>
<td>EMERGENCY PLAN STEPS</td>
<td>POST-SHUTDOWN EMERGENCY PLAN STEPS</td>
<td></td>
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<tr>
<td></td>
<td>In general, the Emergency Plan encompasses the following basic steps:</td>
<td>In general, the Post-Shutdown Emergency Plan encompasses the following basic steps:</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.2, Entergy Corporation Emergency Organization, 1st paragraph</td>
<td>This Emergency Plan establishes an organization capable of responding to the complete spectrum of incidents covered by this Emergency Plan. Provisions are made for rapid notification of appropriate portions of the response organization, and for expanding the response organization if the situation dictates.</td>
<td>This Post-Shutdown Emergency Plan establishes an organization capable of responding to the complete spectrum of incidents covered by this Post-Shutdown Emergency Plan. Provisions are made for rapid notification of appropriate portions of the response organization, and for expanding the response organization if the situation dictates.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.2, Entergy Corporation Emergency Organization, 2nd paragraph</td>
<td>An individual having the authority and responsibility to initiate any emergency actions within the provisions of this Emergency Plan, including the exchange of information with authorities responsible for coordinating offsite</td>
<td>An individual having the authority and responsibility to initiate any emergency actions within the provisions of this Post-Shutdown Emergency Plan, including the exchange of information with authorities responsible for</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>emergency measures, is onsite at all times. This individual is the Shift Manager until relieved by the Emergency Director.</td>
<td>coordinating onsite emergency measures, is onsite at all times. This individual is the Shift Manager until relieved by the Emergency Director.</td>
<td>Reflect the change to Post-Shutdown.</td>
<td></td>
</tr>
<tr>
<td>3.3, Emergency Classifications, last paragraph</td>
<td>Section 4 from the Palisades Nuclear Plant Site Emergency Plan contains a more detailed discussion of the classifications of emergencies. Table 3-1, &quot;Emergency Classifications and the Level of Response by Participating Groups,&quot; shows, in column form, the emergency classifications, and the degrees of involvement of onsite and offsite organizations.</td>
<td>Section 4 from the Palisades Nuclear Plant Post-Shutdown Emergency Plan contains a more detailed discussion of the classifications of emergencies. Table 3-1, &quot;Emergency Classifications and the Level of Response by Participating Groups,&quot; shows, in column form, the emergency classifications, and the degrees of involvement of onsite and offsite organizations.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.4, Emergency Actions, 1st paragraph</td>
<td>In all instances, when one of the classifications of the above emergencies occurs in the Plant, the Shift Manager is responsible for taking immediate action to safeguard personnel and equipment. Utilizing the Palisades Nuclear Plant Emergency Implementing Procedures, the Shift Manager shall activate the necessary portions of the Site Emergency Plan. The basic considerations for safe operation of the Plant, and for action in the event of an emergency in the Plant, are summarized as follows:</td>
<td>In all instances, when one of the classifications of the above emergencies occurs in the Plant, the Shift Manager is responsible for taking immediate action to safeguard personnel and equipment. Utilizing the Palisades Nuclear Plant Emergency Implementing Procedures, the Shift Manager shall activate the necessary portions of the Post-Shutdown Emergency Plan. The basic considerations for safe operation of the Plant, and for action in the event of an emergency in the Plant, are summarized as follows:</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>3.4.a</td>
<td>In any event, protection of Plant personnel and the public is the highest priority. A range of</td>
<td>In any event, protection of Plant personnel and the public is the highest priority. A range of</td>
<td>Palisades will no longer be an operating nuclear power plant.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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</tr>
<tr>
<td>4.1, Emergency Classification System, 1st paragraph</td>
<td>This Site Emergency Plan provides four mutually exclusive classifications covering the postulated spectrum of emergency situations. For each classification, a particular set of immediate actions to be taken is established as described in Section 6, of the Site Emergency Plan. Actions for each of the four mutually exclusive classifications are defined in Emergency Implementing Procedure EI-1, &quot;Emergency Classification and Actions,&quot; Attachment 1, &quot;Emergency Actions.&quot;</td>
<td>This Post-Shutdown Emergency Plan provides four mutually exclusive classifications covering the postulated spectrum of emergency situations. For each classification, a particular set of immediate actions to be taken is established as described in Section 6, of the Post-Shutdown Emergency Plan. Actions for each of the four mutually exclusive classifications are defined in Emergency Implementing Procedure EI-1, &quot;Emergency Classification and Actions,&quot; Attachment 1, &quot;Emergency Actions.&quot;</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>4.1, Emergency Classification System, last paragraph</td>
<td>Palisades Emergency Action Levels can be found in the &quot;Site Emergency Plan Supplement 1 - EAL Wall Charts.&quot;</td>
<td>Palisades Emergency Action Levels can be found in the &quot;Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts.&quot;</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>4.1.3, Site Area Emergency, 1st paragraph</td>
<td>A Site Area Emergency is defined as that situation where, &quot;Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE</td>
<td>A Site Area Emergency is defined as that situation where, &quot;Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE</td>
<td>Editorial – added closing quotation mark</td>
</tr>
<tr>
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<tr>
<td>4.1.4, General Emergency, last paragraph</td>
<td>ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.</td>
<td>ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary. &quot;Guidelines for Plant, State, and local actions are listed in Table 4-1. Some protective actions may be recommended upon declaration of the General Emergency since the lower limits of the EPA PAGs are likely to be exceeded. Emergency Action Levels (EAL) have been selected so that time should be available to make some confirmatory measurements in the field prior to implementation of the more extensive (i.e., evacuation) protective action. Some of the General Emergency action levels require a dose projection calculation using actual meteorology. This differs from the adverse meteorology assumptions used in the Site Emergency action levels in order to remove this built-in conservatism and to preclude declaring a General Emergency when...</td>
<td>Editorial – corrected punctuation and capitalization</td>
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<td>Emergency Plan Section</td>
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<tr>
<td>5.0, Organizational Control of Emergencies, 1st paragraph</td>
<td>actual conditions do not warrant the higher classification. Declaration of a General Emergency requires a recommendation to the State for protective actions for the local population.</td>
<td>actual conditions do not warrant the higher classification. Declaration of a General Emergency requires a recommendation to the State for protective actions for the local population.</td>
<td>Palisades will no longer be an operating nuclear power plant.</td>
</tr>
<tr>
<td>5.0, Organizational Control of Emergencies, 3rd paragraph</td>
<td>Emergency planning must consider the capabilities of the normally present operating staff, augmented by support from other utility personnel and local and distant support. The initial phases of an emergency situation at an operating nuclear power plant will involve a relatively small number of individuals. These individuals must be capable of: (1) determining that an emergency exists, (2) providing initial classification and assessment, and (3) promptly notifying other groups and individuals in the emergency organization.</td>
<td>Emergency planning must consider the capabilities of the normally present operating staff, augmented by support from other utility personnel and local and distant support. The initial phases of an emergency situation at a permanently shutdown and defueled nuclear power plant will involve a relatively small number of individuals. These individuals must be capable of: (1) determining that an emergency exists, (2) providing initial classification and assessment, and (3) promptly notifying other groups and individuals in the emergency organization.</td>
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</tr>
<tr>
<td>5.1, Palisades Plant Organization</td>
<td>This section of the Site Emergency Plan addresses the assignment of personnel and the establishment of responsibilities and authority for the: The Palisades Nuclear Plant operating and shift engineering activities are under the control of the General Manager, Plant Operations. The operating and shift</td>
<td>This section of the Post-Shutdown Emergency Plan addresses the assignment of personnel and the establishment of responsibilities and authority for the: The Palisades Nuclear Plant shift activities are under the control of the General Manager, Plant Operations. The shift activities at the Plant are conducted by</td>
<td>Palisades will no longer be an operating nuclear power plant.</td>
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## PNP Emergency Plan Change Summary

<table>
<thead>
<tr>
<th>Emergency Plan Section</th>
<th>Before (Rev. 29)</th>
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<th>Reason for Change</th>
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<tr>
<td>5.2, Operating and Engineering Organization</td>
<td>Engineering activities at the Plant are conducted by operating crews on twelve-hour shifts. Each twelve-hour shift is responsible for continuous operation of the Plant.</td>
<td>Operating crews on twelve-hour shifts. Each twelve-hour shift is responsible for continuous operation of the Plant.</td>
<td>After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel.</td>
</tr>
<tr>
<td>5.2.6, Shift Manager</td>
<td>The Shift Manager, one of whom is on duty at all times, is responsible for the safe and efficient operation of the Plant during his assigned shift. He maintains control over Plant operations as the Senior Licensed Operator unless he is properly relieved by another member of the Plant staff who holds a valid Senior Operator’s License. In an emergency condition, the Shift Manager initially assumes the role of Emergency Director.</td>
<td>The Shift Manager, one of whom is on duty at all times, is responsible for the safe and efficient operation of the Plant during his assigned shift. The Shift Manager maintains control over Plant operations as the Certified Fuel Handler (CFH) unless properly relieved by another Shift Manager. In an emergency condition, the Shift Manager initially assumes the role of Emergency Director.</td>
<td>Following permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one (1) Shift Manager, who will be a qualified Certified Fuel Handler (CFH). Use of the title, CFH, is dependent upon NRC approval of proposed changes to the PNP Technical Specifications that replace references to licensed and non-licensed operators with references to CFHs and Non-Certified Operators. Implementation of the Emergency plan as revised in this LAR is not dependent upon prior NRC approval of the proposed changes.</td>
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<tr>
<td>5.2.7</td>
<td>Shift Engineers/Shift Technical Advisors (SE/STA)</td>
<td>DELETED</td>
<td>Palisades will no longer be an operating nuclear power plant. The SE/STA position will be eliminated. The proposed elimination of the SE/STA position has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
</tr>
<tr>
<td>5.3, Palisades Emergency Response Organization, 1st paragraph</td>
<td>In the event of an emergency in which one of the classification levels is declared (Unusual Event, Alert, Site Area Emergency, or General Emergency), all or a portion of the Site Emergency Plan will be activated. The assignment of responsibilities in the Emergency Response Organization (ERO) is ultimately the responsibility of the General Manager, Plant Operations. However, the ERO is predefined and alternate assignments to various positions are specified to provide for automatic, unambiguous manning of the emergency organization within the time necessary to respond to the</td>
<td>In the event of an emergency in which one of the classification levels is declared (Unusual Event, Alert, Site Area Emergency, or General Emergency), all or a portion of the Post-Shutdown Emergency Plan will be activated. The assignment of responsibilities in the Emergency Response Organization (ERO) is ultimately the responsibility of the General Manager, Plant Operations. However, the ERO is predefined and alternate assignments to various positions are specified to provide for automatic, unambiguous staffing of the emergency organization within the time necessary to respond to the</td>
<td>Reflect the change to Post-Shutdown.</td>
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<tr>
<td>5.3.1, Control Room</td>
<td>The Control Room is designed to be habitable under accident conditions and shall serve as the on-site Emergency Control Center. Emergency lighting, power, air filtration-ventilation system, and shielded walls enable the operators to remain in the Control Room to ensure that the reactor remains in a safe condition. The minimum on-shift staffing is indicated in Figure 5-2.</td>
<td>The Control Room is designed to be habitable under accident conditions and shall serve as the on-site Emergency Control Center. Emergency lighting, power, air filtration-ventilation system, and shielded walls enable the operators to remain in the Control Room to ensure that the plant remains in a safe condition. The minimum on-shift staffing is indicated in Figure 5-2.</td>
<td>Palisades will no longer be an operating nuclear power plant.</td>
</tr>
<tr>
<td>5.3.4, Emergency Operations Facility, last paragraph</td>
<td>The design features of the EOF are discussed in Palisades Site Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>The design features of the EOF are discussed in Palisades Post-Shutdown Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>5.3.5, Joint Information Center</td>
<td>The plant Communications personnel shall be responsible for maintenance of the Palisades Nuclear Plant Public Information Policies and Procedures. These provide for disseminating information to the public via the media and establishing a system for rumor control during an emergency. Public Affairs personnel shall coordinate the activation and management of the Joint Information Center (JIC) in cooperation with the Corporate Public Affairs Department. He shall</td>
<td>The plant Communications personnel shall be responsible for maintenance of the Palisades Nuclear Plant Public Information Policies and Procedures. These provide for disseminating information to the public via the media and establishing a system for rumor control during an emergency. Public Affairs personnel shall coordinate the activation and management of the Joint Information Center (JIC) in cooperation with the Corporate Public Affairs Department. Public</td>
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<tr>
<td>5.4.1, Shift Manager/EOF Emergency Director</td>
<td>The Shift Manager/EOF Emergency Director is responsible for the overall assessment of emergency conditions, especially where emergency conditions present a real or potential hazard to off-site persons or property. The Shift Manager/EOF Emergency Director will have the overall responsibility for operational decisions involving the safety of the Plant and its personnel, and for making recommendations based on technical information supplied by support personnel regarding the general public during an emergency situation. He will also implement the Palisades Site Emergency Plan through the use of specific Emergency Plan Implementing Procedures. The Shift Manager/EOF Emergency Director is responsible for ensuring the capability for continuous operation of emergency response centers, including personnel and material resources. In addition, the Shift Manager/EOF Emergency Director is responsible for ensuring the capability for continuous operation of emergency response centers, including personnel and material resources.</td>
<td>The Shift Manager/EOF Emergency Director is responsible for the overall assessment of emergency conditions, especially where emergency conditions present a real or potential hazard to off-site persons or property. The Shift Manager/EOF Emergency Director will have the overall responsibility for operational decisions involving the safety of the Plant and its personnel, and for making recommendations based on technical information supplied by support personnel regarding the general public during an emergency situation. The Shift Manager/EOF Emergency Director will also implement the Palisades Post-Shutdown Emergency Plan through the use of specific Emergency Plan Implementing Procedures. The Shift Manager/EOF Emergency Director is responsible for ensuring the capability for continuous operation of emergency response centers, including personnel and material resources. In addition, the Shift</td>
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<td>for providing off-site officials with pertinent information regarding the conditions at the Plant.</td>
<td>Manager/EOF Emergency Director is responsible for providing off-site officials with pertinent information regarding the conditions at the Plant.</td>
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</tr>
<tr>
<td>5.4.2 NOTE</td>
<td>The Shift Manager assumes the responsibilities of the Site Emergency Plan until relieved by the EOF Director.</td>
<td>The Shift Manager assumes the responsibilities of the Post-Shutdown Emergency Plan until relieved by the EOF Director.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>5.5, Recovery Organization, 1st paragraph</td>
<td>Recovery after an emergency condition will be handled by the emergency organization unless conditions indicate that recovery will be complicated or will take a long period of time. At the discretion of the EOF Emergency Director, the Plant will shift from an emergency organization structure to a Recovery Organization. Guidelines that will be employed for determining this shift are explained in Palisades Site Emergency Plan, Section 9.0, &quot;Recovery.&quot;</td>
<td>Recovery after an emergency condition will be handled by the emergency organization unless conditions indicate that recovery will be complicated or will take a long period of time. At the discretion of the EOF Emergency Director, the Plant will shift from an emergency organization structure to a Recovery Organization. Guidelines that will be employed for determining this shift are explained in Palisades Post-Shutdown Emergency Plan, Section 9.0, &quot;Recovery.&quot;</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>5.5, Recovery Organization, last paragraph</td>
<td>The TSC Engineering Coordinator will also support the EOF Rad Assessment Coordinator in determining how much radioactivity potentially can be released to the atmosphere based on the nature and extent of core damage.</td>
<td>The TSC Engineering Coordinator will also support the EOF Rad Assessment Coordinator in determining how much radioactivity potentially can be released to the atmosphere based on the nature and extent of spent fuel damage.</td>
<td>After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result, the...</td>
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<td>5.6 Off-Site Emergency Response Services</td>
<td>In those cases where agency assistance is mandated by law (i.e., the State of Michigan), a letter of agreement may be excluded from the plan. The services provided by local support groups are listed in the following sections.</td>
<td>In those cases where agency assistance is mandated by law (i.e., the State of Michigan), a letter of agreement may be excluded from the Plan. The services provided by local support groups are listed in the following sections.</td>
<td>Editorial – correct punctuation and capitalization.</td>
</tr>
<tr>
<td>5.6.5, Berrien County Emergency Management, 2nd paragraph</td>
<td>The Chief of Staff (Director of Emergency Management) is responsible for initiating the staffing of the EOC. By prior agreement between counties, communications between the Plant and Berrien County will normally be directed through Van Buren County.</td>
<td>The Chief of Staff (Director of Emergency Management) is responsible for initiating the staffing of the EOC. By prior agreement between counties, communications between the Plant and Berrien County will normally be directed through Van Buren County.</td>
<td>Editorial – grammatical correction</td>
</tr>
<tr>
<td>5.7, Coordination with Governmental Authorities, 1st</td>
<td>The coordination between the state, county, and federal emergency plans</td>
<td>The coordination between the state, county, and federal emergency plans</td>
<td>Reflect the change to Post-Shutdown.</td>
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<tr>
<td>sentence</td>
<td>and the Palisades Site Emergency Plan serves to ensure the safety and health of the public.</td>
<td>and the Palisades Post-Shutdown Emergency Plan serves to ensure the safety and health of the public.</td>
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<tr>
<td>5.7.1.b, Michigan State Police – Paw Paw Post, last sentence</td>
<td>Communications are detailed in Palisades Site Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>Communications are detailed in Palisades Post-Shutdown Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>Reflect the change to Post- Shutdown.</td>
</tr>
<tr>
<td>5.7.2.a, Nuclear Regulatory Commission (NRC), 1st paragraph, last 2 sentences</td>
<td>The NRC shall be notified within an hour, anytime all or part of the Site Emergency Plan is activated. Means of communications are described in the Site Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>The NRC shall be notified within an hour, anytime all or part of the Post-Shutdown Emergency Plan is activated. Means of communications are described in the Post-Shutdown Emergency Plan, Section 7.0, &quot;Emergency Facilities and Equipment.&quot;</td>
<td>Reflect the change to Post- Shutdown.</td>
</tr>
<tr>
<td>Figure 5-2, Title</td>
<td>Plant Staffing and Augmentation Requirements</td>
<td>Post-Shutdown Plant Staffing and Augmentation Requirements</td>
<td>Reflect the change to Post- Shutdown.</td>
</tr>
</tbody>
</table>
| Figure 5-2, Major Functional Area – Plant Operations and Assessment of Operational Aspects | Shift Engineer/Shift Technical Advisor (SRO) 1
Shift Manager (SRO) 1
Control Room Supervisor (SRO) 1
Nuclear Control Operators 2
Nuclear Plant Operators** 6 | Shift Manager 1
Non-Certified Operator 2 | Palisades will no longer be an operating nuclear power plant. The following on-shift positions will be eliminated:
  - Shift Engineer/Shift Technical Advisor
  - Two (2) Nuclear Control Operators
  - One (1) Nuclear Plant Operators
Following permanent cessation of power operations and certification of permanent removal of fuel from
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<tr>
<td>Figure 5-2, Major Functional Area – Notification/Communication</td>
<td>On-Shift 1 60 Min. Augmentation 3</td>
<td>On-Shift 1* 60 Min, Augmentation 2</td>
<td>Palisades will no longer be an operating nuclear power plant. On-Shift Notification/Communication tasks will be transferred to the Non-Certified Operator. This transfer of duties has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
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<td>the reactor vessel, Operations on-shift personnel will consist of one (1) Shift Manager and two (2) Non-Certified Operators. Use of the titles, CFH and Non-Certified Operator, are dependent upon NRC approval of proposed changes to the PNP Technical Specifications that replace references to licensed and non-licensed operators with references to CFHs and Non-Certified Operators. Implementation of the Emergency plan as revised in this LAR is not dependent upon prior NRC approval of the proposed changes to the PNP Technical Specifications. These staffing levels have been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
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<td>Figure 5-2, Major Functional Area – Radiological Accident Assessment and Support of</td>
<td>Chem Technician - On-shift 1 60 Min Augmentation</td>
<td>RP Technician - On-shift 1 60</td>
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<tr>
<td>Operational Accident Assessment</td>
<td></td>
<td>Min Augmentation</td>
<td>postulated accidents that will be applicable in the permanently defueled condition. 60 minute augmentation staff will consist of the ENS Communicator and the Offsite Communicator. The redundant position of State/County Communicator will be eliminated. The proposed elimination of the redundant State and County Communicator position has been evaluated in the PNP analysis of post-shutdown ERO staffing.</td>
</tr>
<tr>
<td>Figure 5-2, Major Functional Area – Radiation Protection</td>
<td>RP Technician – On-Shift 2</td>
<td>RP Technician – On-Shift 1</td>
<td>Palisades will no longer be an operating nuclear power plant. The on-shift Chemistry Technician position will be eliminated. Removal of the on-shift Chemistry Technician has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition. Removal of the augmenting Chemistry Technician position does not impact the ability of the on-shift or ERO staff to perform dose assessment.</td>
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<td>Palisades will no longer be an operating nuclear power plant.</td>
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<td>60 Min Augmentation 3</td>
<td>60 Min Augmentation 2</td>
<td>Removal of the on-shift RP Technician has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition. Reduction in the number of augmenting RP Technicians has been evaluated in the PNP analysis of post-shutdown ERO staffing.</td>
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<td>Core/Thermal (Shift) 1* Core/Thermal (60 Min Aug) 1 Electrical (60 Min Aug) 1 Mechanical (60 Min Aug) 1</td>
<td>Electrical/Mechanical (60 Min Aug) 1</td>
<td>Palisades will no longer be an operating nuclear power plant. After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result the Core/Thermal Hydraulic Engineer is no longer needed. The Engineering Coordinator will perform Engineering functions in the TSC. The spectrum of credible and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the</td>
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<td>Figure 5-2, Major Functional Area – Plant System Engineering, Repair, and Corrective Actions</td>
<td>Mechanical Maintenance - 60 Min Augmentation 1 Radwaste Operator – 60 Min Augmentation 1 Electrical Maintenance – 60 Min Augmentation 1 Instrument and Control (I&amp;C) Technician – 60 Min Augmentation 1</td>
<td>Mechanical Maintenance - 60 Min Augmentation 1 Electrical Maintenance – 60 Min Augmentation 1</td>
<td>permanently defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform. Reduction in the number of augmenting Engineers has been evaluated in the PNP analysis of post-shutdown ERO staffing. \nPalisades will no longer be an operating nuclear power plant. After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. \nThe spectrum of credible and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently defueled condition is also greatly reduced, which reduces the repair and corrective action activities the OSC must perform.</td>
</tr>
<tr>
<td>Figure 5-2 Total (On-Shift)</td>
<td>15</td>
<td>4</td>
<td>Reduction in the number of on-shift staff has been evaluated in the PNP analysis of proposed post-shutdown</td>
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<td>Figure 5-2 Total (60 Min Augmentation)</td>
<td>20</td>
<td>12</td>
<td>on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
</tr>
<tr>
<td>Figure 5-2 Total (90 Min Augmentation)</td>
<td>5</td>
<td>2</td>
<td>Reduction in the number of 60-minute augmenting ERO staff has been evaluated in the PNP analysis of post-shutdown ERO staffing.</td>
</tr>
<tr>
<td>Figure 5-2, Note **</td>
<td>Each of up to 2 of the 6 on-shift NPO positions may be filled by a fire brigade qualified person who is also minor maintenance qualified; or alternately by 2 persons per required NPO, one fire brigade qualified and the other minor maintenance qualified.</td>
<td>Deleted</td>
<td>Following permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, Operations on-shift personnel will consist of one (1) Shift Manager and two (2) Non-Certified Operators. Because the note is in reference to the Nuclear Plant Operator position, it becomes unnecessary.</td>
</tr>
<tr>
<td>6.1, Activation of Emergency Organization, 1st paragraph</td>
<td>If it appears that an incident or condition may meet or exceed a predetermined value or condition specified as an Emergency Action Level in Emergency Implementing Procedure EI-1, &quot;Emergency Classification and Actions,&quot; and SEP Supplement 1 &quot;SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts&quot; then certain portions of this</td>
<td>If it appears that an incident or condition may meet or exceed a predetermined value or condition specified as an Emergency Action Level in Emergency Implementing Procedure EI-1, &quot;Emergency Classification and Actions,&quot; and PSEP Supplement 1 &quot;POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts&quot; then certain</td>
<td>Reflect the change to Post-Shutdown.</td>
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<tr>
<td>6.1, Activation of Emergency Organization, last paragraph</td>
<td>The Shift Manager will initially classify the emergency and ensure required notifications are made. The Shift Manager shall ensure that an overall assessment of the emergency is performed in order to determine the most appropriate classification and, based on this determination, activate portions of the emergency organization as necessary. The Shift Engineer/Shift Technical Advisor may assist the Shift Manager in performing these functions. The methodology used in activating the emergency organizations during each class of emergency is provided in the following sections:</td>
<td>The Shift Manager will initially classify the emergency and ensure required notifications are made. The Shift Manager shall ensure that an overall assessment of the emergency is performed in order to determine the most appropriate classification and, based on this determination, activate portions of the emergency organization as necessary. The methodology used in activating the emergency organizations during each class of emergency is provided in the following sections:</td>
<td>Palisades will no longer be an operating nuclear power plant. The SE/STA position will be eliminated. The proposed elimination of the SE/STA position has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
</tr>
<tr>
<td>6.1.1.a, Control Room Personnel</td>
<td>Should emergency conditions, either real or potential, arise, it is expected that the Nuclear Control Operators and the Shift Manager will initially be made aware of the situation by alarms, instrument readings, reports, etc. The Shift Manager shall ensure that the General Manager, Plant Operations or Duty Station Manager on backshift and weekends is immediately informed of any possible emergency situation.</td>
<td>Should emergency conditions, either real or potential, arise, it is expected that the Shift Manager will initially be made aware of the situation by alarms, instrument readings, reports, etc. The Shift Manager shall ensure that the General Manager, Plant Operations or Duty Station Manager on backshift and weekends is immediately informed of any possible emergency situation.</td>
<td>Palisades will no longer be an operating nuclear power plant. The Nuclear Control Operator positions will be eliminated. These staffing levels have been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.</td>
</tr>
<tr>
<td>6.1.1.b</td>
<td>The Shift Manager is responsible for ensuring the performance of the</td>
<td>The Shift Manager is responsible for ensuring the performance of the</td>
<td>After permanent cessation of power operations and certification of</td>
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<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
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<td>Reason for Change</td>
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<td>initial assessment of the emergency (e.g., Plant and reactor status,</td>
<td>initial assessment of the emergency (e.g., Plant and spent fuel pool status, radiological</td>
<td>permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii),</td>
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<td>radiological conditions, etc) in the following manner:</td>
<td>conditions, etc.) in the following manner:</td>
<td>and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation</td>
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<td>or emplacement or retention of fuel in the reactor vessel. As a result, reactor status is no longer</td>
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<td>applicable. With irradiated fuel being stored in the Spent Fuel Pool, it becomes the focus of the</td>
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<td>assessment.</td>
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<td></td>
<td>Editorial – punctuation corrections.</td>
</tr>
<tr>
<td>6.1.1.b.1</td>
<td>Determine the immediate actions necessary to be taken to ensure the safe</td>
<td>Determine the immediate actions necessary to be taken to ensure the safe and proper</td>
<td>Palisades will no longer be an operating nuclear power plant. The SE/STA position will be eliminated.</td>
</tr>
<tr>
<td></td>
<td>and proper operation of the Plant. The Shift Engineer will advise and assist</td>
<td>and proper operation of the Plant.</td>
<td>The proposed elimination of the SE/STA position has been evaluated in the PNP analysis of proposed</td>
</tr>
<tr>
<td></td>
<td>the Shift Manager on matters pertaining to the safe and proper operations of</td>
<td></td>
<td>post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable</td>
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<td></td>
<td>the station with regard to nuclear safety.</td>
<td></td>
<td>in the permanently defueled condition.</td>
</tr>
<tr>
<td>6.1.2, Emergency Plant</td>
<td>The Shift Manager will continue to perform the Command and Control actions of</td>
<td>The Shift Manager will continue to perform the Command and Control actions of the Post-Shutdown</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Manager, 1st sentence</td>
<td>the Site Emergency Plan until relieved by the EOF Director.</td>
<td>Emergency Plan until relieved by the EOF Director.</td>
<td></td>
</tr>
<tr>
<td>6.1.2.h</td>
<td>Advise the ED on core damage and plant conditions for classification and PAR</td>
<td>Advise the ED on plant conditions for classification and PAR determination</td>
<td>After permanent cessation of power operations and certification of permanent removal of fuel from the</td>
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<td>determination</td>
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</table>

Palisades will no longer be an operating nuclear power plant. The SE/STA position will be eliminated. The proposed elimination of the SE/STA position has been evaluated in the PNP analysis of proposed post-shutdown on-shift staffing in conjunction with the postulated accidents that will be applicable in the permanently defueled condition.
<table>
<thead>
<tr>
<th>Emergency Plan Section</th>
<th>Before (Rev. 29)</th>
<th>After (Pending Revision Number)</th>
<th>Reason for Change</th>
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</thead>
<tbody>
<tr>
<td>6.1.2.n</td>
<td>Implement severe accident management procedure strategies.</td>
<td>DELETED (subsequent steps renumbered)</td>
<td>Palisades will no longer be an operating nuclear power plant. The severe accident management procedures are entered from the EOPs. The EOPs are no longer applicable in the permanently shutdown and defueled condition; therefore the severe accident management procedure strategies are no longer applicable.</td>
</tr>
<tr>
<td>6.2.3.a</td>
<td>An increased amount of Plant instrumentation shall be monitored, in particular, indications of core status (eg, in core thermocouple readings, etc) shall be monitored.</td>
<td>An increased amount of Plant instrumentation shall be monitored.</td>
<td>Palisades will no longer be an operating nuclear power plant. After permanent cessation of power operations and certification of permanent removal of fuel from the reactor vessel, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result, core status is no longer applicable.</td>
</tr>
<tr>
<td>6.3.3, System Control</td>
<td>System design is aimed at automatic corrective actions, such as Plant</td>
<td>System design is aimed at automatic corrective actions, such as system</td>
<td>Palisades will be permanently shut</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
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<td>shutdown and system isolation, whenever operating parameters become abnormal. Operating procedures are written for manual control of these same situations, should automatic features fail.</td>
<td>isolation, whenever operating parameters become abnormal. Operating procedures are written for manual control of these same situations, should automatic features fail.</td>
<td>down.</td>
<td></td>
</tr>
<tr>
<td>7.1.3, Operations Support Center, 2nd paragraph</td>
<td>The function of the OSC is to assemble and coordinate necessary personnel from Chemistry, Radiation Protection, Operations (NPOs), I&amp;C, Electrical, and Mechanical. These groups will be dispatched for specific jobs as directed by the TSC.</td>
<td>The function of the OSC is to assemble and coordinate necessary personnel from Chemistry, Radiation Protection, Operations (Non-Certified Operators), I&amp;C, Electrical, and Mechanical. These groups will be dispatched for specific jobs as directed by the TSC.</td>
<td>Title change of NPO to Non-Certified Operator is dependent upon NRC approval of proposed changes to the PNP Technical Specifications that replace references to licensed and non-licensed operators with references to CFHs and Non-Certified Operators. Implementation of the Emergency plan as revised in this LAR is not dependent upon prior NRC approval of the proposed changes to the PNP Technical Specifications.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<td>Van Buren County Emergency Plan Berrien County Emergency Plan Allegan County Emergency Plan Palisades Piping and Instrument Diagrams</td>
<td>Berrien County Emergency Plan Allegan County Emergency Plan Palisades Piping and Instrument Diagrams</td>
<td></td>
</tr>
<tr>
<td>7.7.2, Laboratory Facilities, 3rd paragraph, last sentence</td>
<td>GEL Laboratory maintains a laboratory in Charleston, South Carolina which has the capability to perform chemical and radiological analyses.</td>
<td>GEL Laboratory maintains a laboratory in Charleston, South Carolina which has the capability to perform chemical and radiological analyses.</td>
<td>Editorial – correct spelling</td>
</tr>
<tr>
<td>7.8.6.a, last sentence</td>
<td>In addition to breathing apparatus, thyroid-blocking agents (ie, potassium iodide) will be dispensed for onsite personnel in accordance with Emergency Implementing Procedures.</td>
<td>In addition to breathing apparatus, thyroid-blocking agents (i.e., potassium iodide) will be dispensed for onsite personnel in accordance with Emergency Implementing Procedures.</td>
<td>Editorial – correct punctuation</td>
</tr>
<tr>
<td>Table 7-1</td>
<td>Palisades SEP Communications Matrix</td>
<td>Palisades PSEP Communications Matrix</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.0, Maintaining Emergency Preparedness, 1st paragraph</td>
<td>Palisades Plant shall maintain the Site Emergency Plan and the Palisades Nuclear Plant Emergency Implementing Procedures as two separate documents. It is intended that this Emergency Plan, although considered part of Palisades Nuclear Power Plant's Final Safety Analysis Report (FSAR), be maintained as a separate document.</td>
<td>Palisades Plant shall maintain the Post-Shutdown Emergency Plan and the Palisades Nuclear Plant Emergency Implementing Procedures as two separate documents. It is intended that this Post-Shutdown Emergency Plan, although considered part of Palisades Nuclear Power Plant's Final Safety Analysis Report (FSAR), be maintained as a separate document.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.0, Maintaining Emergency</td>
<td>In order to meet the constantly changing conditions, methods have</td>
<td>In order to meet the constantly changing conditions, methods have</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>Preparedness, 3rd paragraph</td>
<td>been implemented to ensure that the Site Emergency Plan and Implementing Procedures remain effective over the life of the Plant. Efforts shall be made to assure continuous emergency preparedness and operational readiness among Entergy personnel and the offsite response agencies and organizations.</td>
<td>been implemented to ensure that the Post-Shutdown Emergency Plan and Implementing Procedures remain effective over the life of the Plant. Efforts shall be made to assure continuous emergency preparedness and operational readiness among Entergy personnel and the offsite response agencies and organizations.</td>
<td>Shutdown.</td>
</tr>
<tr>
<td>8.1.1, Training</td>
<td>Palisades Plant personnel, including non-permanent personnel, will receive training pertinent to the Site Emergency Plan and Implementing Procedures. Persons assigned specific responsibilities during an emergency will receive additional training appropriate to their respective assignments. The responsibility for training is that of the Training Manager. He may delegate specialty-training responsibilities to personnel qualified to perform such training, for example, State or County training personnel. Governance of Emergency Response Organization Training for Entergy personnel is provided by Entergy Procedure EN-TQ-110, &quot;Emergency Response Organization Training.&quot; This procedure describes the responsibilities for conducting and administering initial and continuing emergency preparedness.</td>
<td>Palisades Plant personnel, including non-permanent personnel, will receive training pertinent to the Post-Shutdown Emergency Plan and Implementing Procedures. Persons assigned specific responsibilities during an emergency will receive additional training appropriate to their respective assignments. The responsibility for training is that of the Training Manager. He may delegate specialty-training responsibilities to personnel qualified to perform such training, for example, State or County training personnel. Governance of Emergency Response Organization Training for Entergy personnel is provided by Procedure P-EN-TQ-110, &quot;Emergency Response Organization Training.&quot; This procedure describes the responsibilities for conducting and administering initial and continuing emergency preparedness.</td>
<td>Reflect the change to Post-Shutdown. Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>8.1.2, Drills and Exercises, last paragraph</td>
<td>Verify the adequacy of the Palisades Plant Site Emergency Plan and the methods used in the Implementing Procedures. Recommendations for revisions to the Palisades Nuclear Power Plant Site Emergency Plan and/or Implementing Procedures and/or upgrading of emergency equipment and supplies as a result of a drill or exercise will be forwarded to Emergency Planning by observers and participants for inclusion in a formal critique. After review, recommendations will be forwarded to the Manager, Emergency Preparedness for comments. Recommended changes that are approved by the Regulatory and Performance Improvement Director will be incorporated into the Site Emergency Plan and Implementing Procedures. Records shall be maintained on drills and exercises conducted at the Palisades Plant.</td>
<td>Recommendations for revisions to the Palisades Nuclear Power Plant Post-Shutdown Emergency Plan and/or Implementing Procedures and/or upgrading of emergency equipment and supplies as a result of a drill or exercise will be forwarded to Emergency Planning by observers and participants for inclusion in a formal critique. After review, recommendations will be forwarded to the Manager, Emergency Preparedness for comments. Recommended changes that are approved by the Regulatory and Performance Improvement Director will be incorporated into the Post-Shutdown Emergency Plan and Implementing Procedures. Records shall be maintained on drills and exercises conducted at the Palisades Plant.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>8.1.3.e, Radiological Emergency Preparedness Exercise, 3rd paragraph, 2nd sentence</td>
<td>A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan.</td>
<td>A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the Plan.</td>
<td>Editorial – correct capitalization</td>
</tr>
<tr>
<td>8.1.4.a</td>
<td>Ensure offsite county, state, and supporting emergency plans are compatible with the Palisades Site Emergency Plan.</td>
<td>Ensure offsite county, state, and supporting emergency plans are compatible with the Palisades Post-Shutdown Emergency Plan.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.1.4.c</td>
<td>Ensure that the information, data, and procedures detailed in the Palisades Nuclear Plant Emergency Implementing Procedures are consistent with the Palisades Site Emergency Plan.</td>
<td>Ensure that the information, data, and procedures detailed in the Palisades Nuclear Plant Emergency Implementing Procedures are consistent with the Palisades Post-Shutdown Emergency Plan.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.1.4.d</td>
<td>Ensure that the Emergency Plan Implementing Procedures are coordinated and interface properly with other procedures (eg, Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).</td>
<td>Ensure that the Emergency Plan Implementing Procedures are coordinated and interface properly with other procedures (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).</td>
<td>Editorial – correct punctuation</td>
</tr>
<tr>
<td>8.1.4.f</td>
<td>Coordinate the onsite review and updating of the Palisades Site Emergency Plan and Implementing Procedures.</td>
<td>Coordinate the onsite review and updating of the Palisades Post-Shutdown Emergency Plan and Implementing Procedures.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.3</td>
<td>REVIEW AND UPDATING OF THE EMERGENCY PLAN AND IMPLEMENTING PROCEDURES</td>
<td>REVIEW AND UPDATING OF THE POST-SHUTDOWN EMERGENCY PLAN AND IMPLEMENTING PROCEDURES</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.3, 1st paragraph</td>
<td>The Palisades Plant Site Emergency</td>
<td>The Palisades Plant Post-Shutdown</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
<td>Before (Rev. 29)</td>
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<td>Plan involves the coordination of Entergy personnel and offsite support agencies. To achieve and maintain the most efficient course of emergency actions, the Palisades Plant Site Emergency Plan and Implementing Procedures, including appended letters of agreement, will be reviewed on an annual basis and updated as needed. These reviews are conducted to comply with the Entergy procedures, federal regulations, and operation license provisions.</td>
<td>Emergency Plan involves the coordination of Entergy personnel and offsite support agencies. To achieve and maintain the most efficient course of emergency actions, the Palisades Plant Post- Shutdown Emergency Plan and Implementing Procedures, including appended letters of agreement, will be reviewed on an annual basis and updated as needed. These reviews are conducted to comply with the Entergy procedures, federal regulations, and operation license provisions.</td>
<td>Shutdown.</td>
</tr>
<tr>
<td>8.3, 2nd paragraph</td>
<td>Proposed revisions to the Site Emergency Plan, Emergency Implementing Procedures and appended Letters of Agreement shall receive an effectiveness review in accordance with 10 CFR 50.54(q). If the change to the Site Emergency Plan reduces the effectiveness of the Plan, the Nuclear Regulatory Commission (NRC) shall review and approve the change prior to implementation. The proposed change shall be reviewed by the Management and Safety Review Committee (MSRC) prior to Plant Licensing submitting the proposed change to the NRC.</td>
<td>Proposed revisions to the Post-Shutdown Emergency Plan, Emergency Implementing Procedures and appended Letters of Agreement shall receive an effectiveness review in accordance with 10 CFR 50.54(q). If the change to the Post-Shutdown Emergency Plan reduces the effectiveness of the Plan, the Nuclear Regulatory Commission (NRC) shall review and approve the change prior to implementation. The proposed change shall be reviewed by the Management and Safety Review Committee (MSRC) prior to Plant Licensing submitting the proposed change to the NRC.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>8.3, 3rd paragraph</td>
<td>Proposed revisions to the Site Emergency Plan shall be reviewed and approved in accordance with the Entergy Procedure EN-OM-119, &quot;On-Site Safety Review Committee.&quot;</td>
<td>Proposed revisions to the Post-Shutdown Emergency Plan shall be reviewed and approved in accordance with the Procedure P-EN-OM-119, &quot;On-Site Safety Review Committee.&quot;</td>
<td>Reflect the change to Post-Shutdown. Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>8.3, 4th paragraph</td>
<td>When revisions to the Site Emergency Plan affect offsite support agencies, they shall be notified as the changes occur.</td>
<td>When revisions to the Post-Shutdown Emergency Plan affect offsite support agencies, they shall be notified as the changes occur.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.3, 5th paragraph</td>
<td>Editorial changes to the Site Emergency Plan or Emergency Implementing Procedures such as titles and telephone lists are not subject to the review process described above.</td>
<td>Editorial changes to the Post-Shutdown Emergency Plan or Emergency Implementing Procedures such as titles and telephone lists are not subject to the review process described above.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.3, 7th paragraph, 1st sentence</td>
<td>The review shall include the Site Emergency Plan, Emergency Implementing Procedures, training, drills and exercises, equipment, and interfaces with state and local governments.</td>
<td>The review shall include the Post-Shutdown Emergency Plan, Emergency Implementing Procedures, training, drills and exercises, equipment, and interfaces with state and local governments.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.3, 8th paragraph</td>
<td>As the Site Emergency Plan is reviewed, the emergency organization or procedures may be changed as a result of the following:</td>
<td>As the Post-Shutdown Emergency Plan is reviewed, the emergency organization or procedures may be changed as a result of the following:</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>8.5.2, Dose Assessment Compute Programs</td>
<td>The Dose Assessment Computer Programs are in accordance with Entergy Procedure EN-IT-103, &quot;Nuclear Cyber Security Program.&quot;</td>
<td>The Dose Assessment Computer Programs are in accordance with Procedure P-EN-IT-103, &quot;Nuclear Cyber Security Program.&quot;</td>
<td>Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<td>9.0, Recovery, 2nd paragraph</td>
<td>A recovery plan, from a practical standpoint, must be flexible enough to adapt to existing, rather than theoretical, conditions. It is not possible to anticipate in advance all of the conditions that may be encountered in an emergency situation; therefore, the Palisades Site Emergency Plan is addressed to general principles that will serve as a guide for developing a flexible plan of action.</td>
<td>A recovery plan, from a practical standpoint, must be flexible enough to adapt to existing, rather than theoretical, conditions. It is not possible to anticipate in advance all of the conditions that may be encountered in an emergency situation; therefore, the Palisades Post-Shutdown Emergency Plan is addressed to general principles that will serve as a guide for developing a flexible plan of action.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix C, Population Distribution and Evacuation Time Estimates</td>
<td>The contents of Appendix C have been relocated to a progeny procedure to the Site Emergency Plan. See SEP Supp 2, &quot;Evacuation Time Estimates,&quot; Revision 1, August 2012.</td>
<td>The contents of Appendix C have been relocated to a progeny procedure to the Post-Shutdown Emergency Plan. See PSEP Supp 2, &quot;Evacuation Time Estimates,&quot; Revision 1, August 2012.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Entergy Procedures</td>
<td>Additional Procedures</td>
<td>Fleet procedures changed to site-specific procedures.</td>
</tr>
<tr>
<td>Appendix D, Additional Procedures, P-EN-EP-306</td>
<td>This procedure establishes a process to standardize fleet drill and exercise programs and provides guidance for the planning, preparation, scheduling, conduct, evaluation, and documentation of Emergency Planning drills and exercises.</td>
<td>This procedure provides guidance for the planning, preparation, scheduling, conduct, evaluation, and documentation of Emergency Planning drills and exercises.</td>
<td>Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<tr>
<td>Appendix D, Additional Procedures, P-EN-EP-307</td>
<td>This procedure establishes a process to standardize the fleet hostile action based drill program and processes; provides guidance for the preparation and conduct of integrated Emergency Planning (EP) and Security exercises using hostile action based scenarios; and, provides guidance for the preparation and conduct of a pre-exercise hostile action-based tabletop.</td>
<td>This procedure provides guidance for the preparation and conduct of integrated Emergency Planning (EP) and Security exercises using hostile action based scenarios; and, provides guidance for the preparation and conduct of a pre-exercise hostile action-based tabletop.</td>
<td>Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>Appendix D, Additional Procedures, P-EN-EP-308</td>
<td>This procedure establishes a process to standardize fleet drill and exercise critiques, and describes the means for tracking and correcting deficiencies identified in drills.</td>
<td>This procedure describes the means for tracking and correcting deficiencies identified in drills.</td>
<td>Fleet procedure changed to site-specific procedure.</td>
</tr>
<tr>
<td>Emergency Plan Section</td>
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<td>(TSC) Operations</td>
<td>Center (TSC) Operations</td>
<td>specific procedure.</td>
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</tr>
<tr>
<td>Appendix I, NUREG-0654 Cross Reference, footnote</td>
<td>*The referenced section of the Site Emergency Plan represents the principal location where the NUREG is addressed.</td>
<td>*The referenced section of the Post-Shutdown Emergency Plan represents the principal location where the NUREG is addressed.</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix I, NUREG-0654 Cross Reference, 2nd column title</td>
<td>Site Emergency Plan</td>
<td>Post-Shutdown Emergency Plan</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix I, NUREG-0654 Cross Reference, D.1</td>
<td>Table 4-1 and SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts</td>
<td>Table 4-1 and POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix I, NUREG-0654 Cross Reference, D.2</td>
<td>SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts</td>
<td>POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts</td>
<td>Reflect the change to Post-Shutdown.</td>
</tr>
<tr>
<td>Appendix I, NUREG-0654 Cross</td>
<td>SITE EMERGENCY PLAN Supplement</td>
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Attachment 3

To

Entergy Letter PNP 2017-034
Palisades Nuclear Plant

Proposed Revision to the Palisades Nuclear Plant Site Emergency Plan (mark-up)

(130 Pages)
PALISADES NUCLEAR PLANT
SITE POST-SHUTDOWN EMERGENCY PLAN

TITLE: SITE EMERGENCY PLAN

Process Applicability Exclusion □

Revision 29 TBD
FULL REVISION TO ADDRESS IMPLEMENTATION OF THE POST-SHUTDOWN EMERGENCY PLAN

Specific Changes

The Site Emergency Plan (SEP) Revision 28 and the On-shift Staffing Analysis (OSA) Revision 3, considered part of the SEP, are being revised. The SEP changes consist of:

1. Adding a note to Figure 5-2, Plant Staffing and Augmentation Requirements, to allow use of task-qualified personnel in substitution of Nuclear Plant Operators (NPOs) as part of the required on-shift complement.
2. Changing Reference Document 69, Palisades Nuclear Station On-Shift Staffing Analysis from Revision 3 to Revision 4.

The OSA is being updated to Revision 4 to align with the Revision 29 update to Figure 5-2 of the SEP. Specifically, updates include:

3. Updating the text in Section I, Introduction, to allow for up to 2 of the 6 on-shift NPO positions' functional responsibilities be performed by a person or persons who singularly or collectively possess the Fire Brigade qualification and task-qualification to perform minor maintenance actions to mitigate an event (e.g., a FB qualified person and a minor maintenance task-qualified person may collectively fill the NPO #5 position) as directed by the Control Room Supervisor.
4. Adding parenthetical reference to other Fire Brigade and/or task-qualified personnel to NPO #5 and NPO #6 in the table included in Section II.A.
5. Adding parenthetical reference to Fire Brigade and/or other task-qualified personnel in Section II.D.1.
6. Adding Revision 4 to the second paragraph of Section III.A.
7. Updating the Revision 4 report date in Section I, Introduction.
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- **Appendix B**, "Basis for Deletion of Appendix B of the Palisades Site Emergency Plan"
- **Appendix C**, "Evacuation Time Estimates," Revision 1, August 2012 prepared by KLD Engineering. (This document is relocated to SEP Supp 2, See below.)
- **Appendix D**, "Emergency Implementing Procedures"
- **Appendix E**, "General Equipment in Emergency Kits"
- **Appendix I**, "NUREG-0654 Cross Reference"

**PSEP Supp 1**, "SITE-POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts"  
(Note: PSEP Supp 1 is under separate cover with its own revision number.)

**PSEP Supp 2**, "Evacuation Time Estimates," Revision 1, August 2012 (Note: PSEP Supp 2 will be maintained in the same binder as the Site-Post-Shutdown Emergency Plan with its own revision number.)
SOURCES AND REFERENCES

SOURCE DOCUMENTS


2. Title 10 of the Code of Federal Regulations, Part 50


4. NUREG-0737 Supplement 1, "Clarification of TMI Action Plan Requirements"

5. Palisades Administrative Procedure 4.00, "Operations Organization, Responsibilities, and Conduct"

6. Abnormal Operating Procedure AOP-23, "Primary Coolant Leak"

7. Abnormal Operating Procedure AOP-24, "Steam Generator Tube Leak"

8. NEI 99-01 Revision 5, "Methodology for Development of Emergency Action Levels"


10. Engineering Analysis, EA-JBB-01-04, "Failed Fuel Dose Rates on NSSS Piping"


REFERENCE DOCUMENTS

1. Regulatory Guide 1.70, Revision 2, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants"

2. Palisades Nuclear Plant Emergency Implementing Procedures

3. 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities"

4. 10 CFR 100, "Reactor Site Criteria"

5. Palisades Final Safety Analysis Report

7. Palisades Safeguards Contingency Procedures
8. Palisades Health Physics Procedures
9. Palisades Abnormal Operating Procedures
10. Palisades Emergency Operating Procedures
11. Palisades Nuclear Plant Public Information Policies and Procedures
12. Palisades Fire Protection Plan
14. Palisades Administrative Procedure 4.00, "Operations Organization, Responsibilities and Conduct"
15. Entergy Procedure P-EN-OM-119, "On-Site Safety Review Committee"
16. Emergency Implementing Procedure EI-1, "Emergency Classification and Actions"
17. Emergency Implementing Procedure EI-2.2, "Emergency Staff Augmentation"
18. Emergency Implementing Procedure EI-3, "Communications and Notifications"
22. Emergency Implementing Procedure EI-5.0, "Reentry"
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47. Emergency Implementing Procedure EI-17, "Compensating Measures for OOS EAL Equipment and Listing of Non-EAL Equipment Important for Emergency Preparedness"
48. 10 CFR 20, "Standards for Protection Against Radiation"
49. Oil and Hazardous Materials Spill Prevention Plan
50. Palisades Technical Specifications
53. Michigan Emergency Management Plan
54. Van Buren County Emergency Plan
55. Allegan County Emergency Plan
56. Berrien County Emergency Plan
57. Palisades Administrative Procedure 1.14, "Meteorological Monitoring Program"
58. Entergy Procedure P-EN-IT-103, "Nuclear Cyber Security Program"
59. NEI 99-01 Revisions 5, "Methodology for Development of Emergency Action Levels"
61. NEI White Paper dated November 18th, 2005, "Enhancements to Emergency Preparedness Programs for Hostile Action" (Endorsed by NRC RIS 2006-12)
62. SITE-POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - "EAL Wall Charts" (Note: PSEP Supp 1 is under separate cover with its own revision number.)
63. SITE-POST-SHUTDOWN EMERGENCY PLAN Supplement 2 - "Evacuation Time Estimates" (Revision 1, August 2012) (Note: PSEP Supp 2 will be maintained in the same binder as the Site Emergency Plan.)
64. Engineering Analysis, EA-JBB-01-04, "Failed Fuel Dose Rates on NSSS Piping"


69. Palisades Nuclear Station Plant Analysis of Proposed Post-Shutdown On-Shift Staffing Analysis, Revision 4-0 dated July 28, 2017 conducted in accordance with NEI 40-05-9 and as required by 10CFR50, Appendix E, Section IV.A
INFORMATIONAL USE

- Procedure is available and referenced for review, but not necessarily at the work location.
- Procedure may be performed from memory or referred to as needed.
- User remains responsible for procedure adherence.

1.0 INTRODUCTION

The purpose of the Palisades Site-Post-Shutdown Emergency Plan (PSEP) is to aid in protecting members of the general public, persons temporarily visiting the site, and site employees.


Detailed procedures concerning the implementation of the Site-Post-Shutdown Emergency Plan are not included here, but are included in the Palisades Nuclear Plant Emergency Implementing Procedures and Entergy Fleet Emergency Preparedness Procedures. These procedures describe the duties and actions of individuals and groups in the event of an emergency and also serve as an interface of the Site-Post-Shutdown Emergency Plan with Plant operations, security, and radiological controls procedures. Selected elements of the Quality Program are applied to the Site-Post-Shutdown Emergency Planning Function for the Palisades Plant.

1.1 DEFINITIONS

1.1.1 Accident

Any unexpected or unintentional event resulting in radiological exposure, contamination, or physical injury to individuals requiring offsite medical treatment, and/or physical damage to safety-related components.

1.1.2 Activation

Actions taken to staff and setup an emergency response facility to make it operational. Actions include, but are not limited to, notification of emergency personnel, equipment setup, and equipment operability testing.
1.1.3 Affected Persons

Individuals who have been radiologically exposed or physically injured as a result of an accident to a degree requiring special attention, e.g., decontamination, first aid, or medical services.

1.1.4 Alarm

An indication of abnormal Plant conditions and/or equipment status.

1.1.5 Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.1.6 Annunciation

An alarm or indication of normal or abnormal conditions.

1.1.7 Assessment Actions

Those actions taken during or after an accident to provide data to make decisions.

1.1.8 Command and Control

Resides with the Shift Manager or EOF Emergency Director following assumption of overall authority for Entergy Corporation emergency response. At minimum, this individual will assume responsibility for event classification, dose assessment, protective action recommendations, and notification of offsite authorities.

1.1.9 Control Room

The location at Palisades Plant from which the Reactor and its auxiliary systems are controlled. The assembly area for Control Room personnel.

1.1.10 Control Room Personnel

The credited on shift complement consists of a Shift Manager (qualified as a Certified Fuel Handler (CFH)), and two (2) Non-Certified Operators.
Operators, Nuclear Plant Operators, Shift Engineer/Shift Technical Advisor, and Control Room Supervisor.

1.1.11 Corrective Actions

Those emergency measures taken to lessen or terminate an emergency situation at, or near, the source of the problem.

1.1.12 Decontamination

The removal of radioactive material from individuals, equipment, surfaces, foodstuffs, etc.

1.1.13 Emergency

Any occurrence at the Palisades Nuclear Power Plant that may result in undue risk to the health and safety of the onsite personnel or the public.

1.1.14 Emergency Action Levels (EAL)

A predetermined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

There are times when an EAL will be a threshold point on a measurable continuous function, such as a primary system coolant leak that has exceeded technical specifications.

At other times, the EAL lists a discrete event that places the plant in a particular emergency class.

1.1.15 Emergency Operations Facility (EOF)

An offsite emergency center from which the offsite emergency support actions of Entergy Corporation are controlled and coordinated with state, local, and federal authorities to mitigate the consequences of an emergency.

1.1.16 Emergency Implementing Procedures

Specific procedures providing specific actions to implement the Site-Post-Shutdown Emergency Plan in order to mitigate or terminate an emergency situation.
1.1.17 Emergency Planning Zones (EPZ)

Two zones that encircle the Palisades Plant. The primary EPZ plume exposure pathway, with a radius of 10 miles, has been established to prevent excessive airborne exposure, and the secondary EPZ, ingestion exposure pathway, with a radius of 50 miles, has been established to prevent excessive ingestion of contaminated food. Within these two zones, protective actions are described for the protection of the public.

1.1.18 Fitness For Duty

Provide reasonable assurance that personnel who maintain unescorted access will perform their tasks in a reliable and trustworthy manner and are not under the influence of any substance, legal or illegal, or mentally or physically impaired from any cause, which in any way adversely affects their ability to safely and competently perform their duties.

1.1.19 Fully Operational

Status of an Emergency Response Facility following assumption of all responsibilities.

1.1.20 General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

1.1.21 Hostile Action

An act toward an NPP or its personnel that includes the use of violent force to destroy equipment, takes hostages, and/or intimidates the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the NPP. Nonterrorism-based EALs should be used to address such activities (eg, violent acts between individuals in the owner controlled area).
1.1.22 Hostile Force

One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

1.1.23 Ingestion Exposure Pathway

The path affected by fallout from a radioactive plume. Of major concern is the contamination of food and water within the emergency planning zones.

1.1.24 Initiating Condition (IC): One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.

- An IC is an emergency condition, which sets it apart from the broad class of conditions that may or may not have the potential to escalate into a radiological emergency.

- It can be a continuous, measurable function that is outside technical specifications, such as elevated PCS temperature or falling reactor coolant level (a symptom).

1.1.25 Offsite

All land and water areas outside the owner-controlled area.

1.1.26 Onsite

All land and water areas within the owner-controlled area, use of which must be authorized by Entergy Corporation.

1.1.27 Operational

Status of an emergency facility, declared by the appropriate facility manager upon determining that the facility is adequately staffed and equipment is setup and available to assume/perform the emergency functions assigned to that facility.
1.1.28 Operations Support Center (OSC)

The onsite area in which onsite support personnel can assemble for subsequent assignment to duties in support of emergency operations. Support personnel assigned to the OSC normally consist of Chemistry, Radiation Protection, and repairpersons from I&C, Electrical, and Mechanical Maintenance.

1.1.29 Owner Controlled Area

The area surrounding the Plant in which the reactor licensee has the authority to determine all activities including exclusion or removal of persons and property from the area during accident conditions.

1.1.30 Plume Exposure Pathway

The path by which a radioactive cloud (plume) can expose the population-at-risk and/or onsite personnel to radiation. The principle exposure sources for this pathway are:

a. Whole body external exposure to gamma radiation from the radioactive plume and from deposited material.

b. Inhalation exposure from the passing radioactive plume.

1.1.31 Population at Risk

Those persons for whom protective actions are or would be taken.

1.1.32 Protective Actions

Those emergency measures taken for the purpose of preventing or minimizing radiological exposures to individuals that would be likely to occur if the actions were not taken.

1.1.33 Protective Action Guides (PAG)

Projected radiological dose or dose commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action.
1.1.34 Protected Area

The fenced area immediately surrounding the nuclear Plant, access to which is controlled in accordance with the Safeguards Contingency Procedures.

1.1.35 Radiological Emergency

An emergency involving radioactive material.

1.1.36 Recovery Actions

Those actions taken after the emergency to restore the Plant as nearly as possible to its pre-emergency condition.

1.1.37 Site Area Emergency

Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

1.1.38 Emergency Plant Manager

The person designated as responsible for all onsite actions during an emergency condition.

1.1.39 State

The State of Michigan.

1.1.40 Technical Support Center (TSC)

An area which accommodates personnel which will provide management and technical support to Plant Operations personnel during emergency conditions from a location outside the Control Room.
1.1.41 Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

2.0 SCOPE AND APPLICABILITY

2.1 GENERAL INFORMATION AND SITE DESCRIPTION

The Palisades Nuclear Power Plant is owned by Entergy Corporation. An area map showing the location of the facility is provided in Figure 2-1.

The design of the Palisades Nuclear Plant is that of a pressurized water-type nuclear steam supply system supplied and manufactured by Combustion Engineering. The system uses chemical shim and control rods for reactivity control and U-tube steam generators. Maps identifying Palisades Plant facilities are provided in Figures 2-2 and 2-3. The Palisades Nuclear Power Plant (PNP) ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). On January 4, 2017, Entergy Nuclear Operations (ENO) submitted a certification of permanent cessation of power operations pursuant to 10 CFR 50.82(a)(1)(i). ENO has submitted written certification to the NRC in accordance with 10 CFR 50.82(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9) certifying that fuel has been permanently removed from the reactor vessel. Upon docketing of these certifications, the 10 CFR Part 50 license for PNP no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

With irradiated fuel being stored in the Spent Fuel Pool and the Independent Spent Fuel Storage Installation (ISFSI), the reactor coolant system and secondary systems have no function related to the storage of the irradiated fuel. Therefore, the postulated accidents involving failure or malfunction of the reactor and reactor coolant system or secondary systems are no longer applicable.

The Palisades Plant is located in Covert Township, Van Buren County, Michigan. The Plant is bordered to the north by the Van Buren State Park and to the west by Lake Michigan. The south and east are sparsely populated, underdeveloped, or used for farming. Interstate 196 and the Blue Star Highway lie within one mile east of the site. Much of the area around the site is devoted to recreation and tourism, which produces a fluctuating and seasonal population.

Highway access to the Plant is provided from the Blue Star Highway (A-2) via the Plant access road.
2.2 POPULATION DISTRIBUTION AND EVACUATION TIMES

The area within a 10-mile radius surrounding the Palisades Plant is designated as the plume exposure Emergency Planning Zone (EPZ). A comprehensive population study was prepared in August 2012 by KLD Engineering. The Evacuation Time Estimates for the plume EPZ are adopted as a progeny procedure to Palisades Site Post-Shutdown Emergency Plan. See PSEP Supp 2, "Evacuation Time Estimates."

2.3 EMERGENCY PLANNING ZONES

EPZs are areas designated for which planning is recommended to assure that prompt and effective actions are taken to protect the public in the event of an accident.

Two EPZs have been identified for the purpose of development and implementation of emergency planning. The plume exposure emergency planning zone has a 10 mile radius. Within this zone, shelter and/or evacuation is the immediate protective action to be recommended for the general public. The principal concern with the plume exposure pathway is that of Total Effective Dose Equivalent (TEDE) exposure and/or exposure to the adult thyroid Committed Dose Equivalent (CDE) due to inhalation and ingestion.

The ingestion exposure EPZ extends to a 50-mile radius. Once exceeding the 10-mile radius, the plume exposure pathway is no longer of significant concern. At this point, the ingestion pathway is of greatest concern.

2.4 PURPOSES AND OBJECTIVES

Effective emergency preparedness needs to incorporate not only the emergency response for systems, but must also include response for people. Engineering safety systems at the Plant are designed to ensure that the consequences of a major malfunction will be mitigated prior to any adverse effect to the general public or facility. The basis for emergency planning is to provide human emergency response in much the same way as safety systems do for design.

It is imperative that all plans, programs, and procedures be well coordinated with the Emergency Plan. Only when they are well coordinated can the response to emergencies be initiated in a timely and effective manner.
2.4.1 Regulatory Requirements

10 CFR 50, "Domestic Licensing Of Production and Utilization Facilities" Section 50.34, "Contents of Applications; Technical Information", requires that each application for a license to operate a facility include in a Final Safety Analysis Report (FSAR), along with other information, the applicant's plans for coping with emergencies, including the items specified in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," 10 CFR 50. Section 100.3, 10 CFR 100, "Reactor Site Criteria," in the definitions of exclusion area and low population zone, establishes additional criteria for plans to cope with emergencies and serious accidents. 10 CFR 50.47, "Emergency Plans," requires that adequate protective measures can and will be taken in the event of a radiological emergency.

Supplemental guidance has been provided by the Nuclear Regulatory Commission (NRC) by the following documents:


These documents describe methods acceptable to the NRC staff for compliance with the Commission's regulations in regard to the content of emergency plans for nuclear power plants including provisions for the periodic review and revision of the Emergency Plans.

2.4.2 Purpose of Emergency Preparedness

The purpose of emergency preparedness is to provide a mechanism that would be used in making decisions in the event of an emergency, and to assure that the necessary equipment, supplies, and essential services are available to protect the health and safety of the public.

2.4.3 Objectives of the Palisades Site-Post-Shutdown Emergency Plan

The objectives of the Site-Post-Shutdown Emergency Plan are to:

a. Establish criteria for classifying emergencies, performing notifications, activating emergency facilities, and activating portions of the emergency organization.
b. Establish an emergency organization and assign responsibilities in the emergency organization for classifying emergencies, performing notifications, performing onsite protective actions, performing dose assessments, and making recommendations to offsite authorities.

c. Identify the support that will be provided to the onsite emergency organization by the Entergy Corporation headquarters and offsite organizations (ie, fire, ambulance, medical).

d. Identify the offsite authorities that are responsible for taking protective actions on behalf of members of the general public or that interface with this Emergency Plan.

e. Identify emergency facilities and available communication systems to be used by the emergency organization.

f. Identify training for personnel in the emergency organization.

g. Provide for drills and exercises of the emergency organization.

h. Provide for periodic review and update of the plan.

2.5 SUMMARY OF EMERGENCY PLAN INTERRELATIONSHIPS

This Emergency Plan should not, in itself, be considered the sole working document to be used during an emergency. The purpose of the Emergency Plan is to classify emergencies according to their severity, to assign responsibilities for actions, and to clearly outline the most effective course of action required to safeguard the public and Plant personnel in the event of an emergency. Detailed instructions and guidelines for emergency actions are included in other plans, programs, and procedures as described below.

2.5.1 Site-Post-Shutdown Emergency Plan Supplement 1

The "Site-Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts" contains the Palisades Emergency Action Levels in a wall chart format. It is part of the Site-Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Site-Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP’s revision number.

The "Site-Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts" will be maintained in the same binder as the Site-Post-Shutdown Emergency Plan.
2.5.2 Site-Post-Shutdown Emergency Plan Supplement 2

The Site-Post-Shutdown Emergency Plan Supplement 2 - "Evacuation Time Estimates (Revision 1, August 2012)" contains the Palisades updated Evacuation Time Estimates study (Revision 1, August 2012). It is part of the Site-Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Site-Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP’s revision number.

The Site-Post-Shutdown Emergency Plan Supplement 2 - "Evacuation Time Estimates" will be maintained in the same binder as the Site-Post-Shutdown Emergency Plan.

2.5.3 Emergency Implementing Procedures

Detailed Emergency Implementing Procedures required to implement the plan have been developed. An index of the Emergency Implementing Procedures is included in Appendix D.

Detailed implementing procedures for emergencies considered to be special events, such as civil disturbances, bomb threats, and breaches in security are included as part of the Safeguards Contingency Procedures.

Separate emergency procedures are not provided for activities already covered by Plant or section Operating Procedures (ie, calibration of survey instruments). The plan relies on certain aspects of the Plant's operating procedures, radiation protection procedures, and security procedures, where they are required for clarification.

2.5.4 Related Plans, Programs, and Procedures

Several plans, programs, and procedures have been developed to assure the safe operation of the Plant. The Site-Post-Shutdown Emergency Plan and Emergency Implementing Procedures have been written to coordinate these plans with other programs and procedures. During emergency situations, the coordination and utilization of all plans and procedures are essential.

The Safeguards Contingency Procedures have been coordinated with the Site-Post-Shutdown Emergency Plan and Emergency Implementing Procedures to minimize the consequences of an emergency situation. Security procedures contain an explanation of the duties and responsibilities for security personnel in the event of an emergency.
Provisions for radiological control at the Plant have been covered in Radiation Protection Procedures. These procedures establish controls and protective measures to be placed on work being conducted in radiation areas. Inclusive within the area of radiation control are the procedures that Radiation Protection establishes for determining exposure through surveys, analysis, and various other avenues.

The Palisades Emergency Operating Procedures have been developed to control Plant operation during emergency situations. These emergency procedures work in conjunction with the Emergency Plan Implementing Procedures.

The Palisades Nuclear Plant Public Information Policies and Procedures contain the information necessary to establish a flow of emergency information to the public.

The Palisades Fire Protection Plan has been developed to assure the safe operation of the Plant during a fire.
3.0 SITE POST-SHUTDOWN EMERGENCY PLAN SUMMARY

The Post-Shutdown Emergency Plan establishes the basic steps that will be used to determine the response of the emergency organization for each of four emergency classes. The emergency classes are as follows: Unusual Event, Alert, Site Area Emergency, and General Emergency. The conditions that must exist for the declaration of a specific emergency class are presented in the Site-Post-Shutdown Emergency Plan, Supplement 1 - EAL Wall Charts.

The declaration of each class will lead to specific notification of offsite authorities. Emergency facilities shall be activated as described in Table 3-1, "Emergency Classifications and the Level of Response by Participating Groups," and staffed as presented in Section 5 of the Palisades Site-Post-Shutdown Emergency Plan. In response to a particular event, certain protective actions may be initiated or certain offsite agencies may be activated. These actions are detailed in Section 6 of the Palisades Site-Post-Shutdown Emergency Plan. Palisades maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level.

For emergencies that result in (1) the release of radioactive materials greater than specified levels, or (2) the degradation of barriers to the release of radioactive materials, assessments of the offsite consequences or the projected offsite consequences shall be made. These assessments will be transmitted to the offsite authorities responsible for taking protective actions on behalf of the general public. Recommendations to these offsite authorities will be based on the protective actions identified in Table 6-2 from the Palisades Site-Post-Shutdown Emergency Plan.

3.1 POST-SHUTDOWN EMERGENCY PLAN STEPS

In general, the Post-shutdown Emergency Plan encompasses the following basic steps:

a. Detection of the emergency
b. Classification of the emergency
c. Notification of offsite agencies
d. Activation of the responding organization(s)
e. Assessment of the situation
f. Initiation of protective actions
g. Initiation of corrective actions
h. Aid to affected persons
i. Reentry and recovery
3.2 ENTERGY CORPORATION EMERGENCY ORGANIZATION

This Post-Shutdown Emergency Plan establishes an organization capable of responding to the complete spectrum of incidents covered by this Post-Shutdown Emergency Plan. Provisions are made for rapid notification of appropriate portions of the response organization, and for expanding the response organization if the situation dictates.

An individual having the authority and responsibility to initiate any emergency actions within the provisions of this Post-Shutdown Emergency Plan, including the exchange of information with authorities responsible for coordinating offsite emergency measures, is onsite at all times. This individual is the Shift Manager until relieved by the Emergency Director.

The operating shift crew is responsible for implementing emergency action(s) in accordance with assigned response functions. Emergency response functions are also assigned to additional Plant staff personnel who are rapidly alerted and mobilized to augment or relieve the operating shift personnel of emergency duties as deemed appropriate by the Emergency Plant Manager, and in accordance with the implementing procedures of this Plan.

In addition, this Plan includes offsite agencies and organizations who have signed letters of agreement with Palisades Nuclear Power Plant (see Appendix A). Their designated response functions include implementation of offsite protective actions, transportation and treatment of personnel requiring medical treatment, control of access to the station, fire-fighting support, radiological sampling and assessment, technical consultation, and testing.

3.3 EMERGENCY CLASSIFICATIONS

Emergencies are grouped into four classifications listed below in order of severity:

a. Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
b. Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

c. Site Area Emergency

Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

d. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

Section 4 from the Palisades Nuclear Plant Site Post-Shutdown Emergency Plan contains a more detailed discussion of the classifications of emergencies. Table 3-1, "Emergency Classifications and the Level of Response by Participating Groups," shows, in column form, the emergency classifications, and the degrees of involvement of onsite and offsite organizations.
3.4 EMERGENCY ACTIONS

In all instances, when one of the classifications of the above emergencies occurs in the Plant, the Shift Manager is responsible for taking immediate action to safeguard personnel and equipment. Utilizing the Palisades Nuclear Plant Emergency Implementing Procedures, the Shift Manager shall activate the necessary portions of the Site Post-Shutdown Emergency Plan. The basic considerations for safe operation of the Plant, and for action in the event of an emergency in the Plant, are summarized as follows:

a. In any event, protection of Plant personnel and the public is the highest priority. A range of protective actions to protect onsite personnel during hostile action is provided to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan. Plant system and equipment protection is secondary.

b. When there is doubt as to the classification of the emergency condition, the more conservative case is considered.

c. The instrumentation is assumed to be providing correct information unless it is clearly identified that an instrument is erroneous or out of service.

d. All alarms are promptly acknowledged, any required response action is taken, and an immediate investigation of the cause that initiated the alarm is made.
## TABLE 3-1
EMERGENCY CLASSIFICATIONS AND THE LEVEL OF RESPONSE BY PARTICIPATING GROUPS

<table>
<thead>
<tr>
<th>EMERGENCY</th>
<th>SHIFT RESPONSE</th>
<th>NOTIFICATION</th>
<th>PLANT STAFF RESPONSE</th>
<th>SUPPORT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unusual Event</td>
<td>Investigate. Shift Manager activates appropriate emergency team(s).</td>
<td>Duty Station Manager, Van Buren County, State, and NRC.</td>
<td>Supplement on-shift resources as needed.</td>
<td>None</td>
</tr>
<tr>
<td>General Emergency</td>
<td>Investigate. Shift Manager activates appropriate teams. Required Plant protective actions performed.</td>
<td>Duty Station Manager, Van Buren County, State, NRC, and staff augmentation.</td>
<td>TSC/OSC/EOF/JIC activation. Supplement activated emergency teams. Investigate event, assist shift personnel in controlling Plant response. Assess radiological consequences. EOF Director provides protective action recommendations to offsite authorities.</td>
<td>Determine need for further offsite support. Acquire offsite support as required.</td>
</tr>
</tbody>
</table>
4.0 POST-SHUTDOWN EMERGENCY CONDITIONS

4.1 EMERGENCY CLASSIFICATION SYSTEM

This Site-Post-Shutdown Emergency Plan provides four mutually exclusive classifications covering the postulated spectrum of emergency situations. For each classification, a particular set of immediate actions to be taken is established as described in Section 6, of the Site-Post-Shutdown Emergency Plan. Actions for each of the four mutually exclusive classifications are defined in Emergency Implementing Procedure EI-1, "Emergency Classification and Actions," Attachment 1, "Emergency Actions."

The various classifications of accidents represent a hierarchy of accidents based on potential or actual hazards presented to the general public. Accidents may be classified in a lower category at first and then escalated to another higher classification if the situation deteriorates. Accident classification may be downgraded as conditions improve. The four classes that comprise the Emergency Classification System are:

a. Unusual Event
b. Alert
c. Site Area Emergency
d. General Emergency

All emergency measures begin with the notification of the Shift Manager that a situation exists which presents a real or potential hazard. This is followed by assessment and evaluation by the Shift Manager, classification of the emergency, notifications, and activation and/or mobilization of the applicable emergency organizations. Section 6 summarizes the emergency measures to be taken by both the onsite and offsite emergency organizations.

Emergency Action Levels (EALs) are used to describe each of the four emergency classes. These levels are composed of a combination of Plant parameters (such as instrument readings and system status) that can be used to give relatively quick indication to the Plant operating staff of the severity of the accident situation.
The purpose of the EAL is to provide the earliest possible identification of actual or potential accident situations. In most cases, further assessment action will be conducted both onsite and offsite before actual protective actions are initiated. EALs associated with radioactive releases are related to the Environmental Protection Agency's Protective Actions Guides (PAG) summarized in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." An assessment by the Plant emergency organization along with state support agencies of the potential of reaching or exceeding the PAG will be performed following the declaration of an emergency class.

When EALs are observed in conjunction with Plant or equipment status due to planned maintenance or testing activities, an emergency condition does not exist.

A conservative philosophy for classification shall be used to declare the highest classification for which an EAL has been exceeded. For example, a Site Area Emergency would be declared directly if a Site Area Emergency level is exceeded without having previously been declared in a lower Alert classification.

The Emergency Action Levels are not necessarily all inclusive. The Shift Manager/EOF Emergency Director shall declare an appropriate emergency classification whenever, in their personal judgment, the Plant status warrants such a declaration.

Palisades Emergency Action Levels can be found in the "Site Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts."

### 4.1.1 Unusual Event

The Unusual Event is the least severe of the four emergency classifications. For the purposes of this plan, an Unusual Event is defined as that situation where, "Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs."

The purpose of the Unusual Event declaration is to:

- Assure that the first step in any response later found to be necessary has been carried out.
- Bring the Plant operations staff to a state of readiness.
c. Provide systematic handling of Unusual Events information and decision-making.

Guidelines for Plant, State, and local actions are listed in Table 4-1. An incident shall be classified as an Unusual Event if the event is minor in nature, involves no releases of radioactive material requiring offsite response or monitoring, and presents no immediate hazard to the public. Events in this classification are selected based upon a potential to degenerate to a more severe situation rather than an actual public hazard.

4.1.2 Alert

An Alert is defined as that situation where, "Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels." The Alert class involves relatively minor emergency situations that have a direct effect on the Plant safety-related systems. The Alert shall set into motion personnel onsite and offsite who would be required to perform actions up to and including the evacuation of near-site areas. The Alert class also addresses limited releases of radioactive material and, therefore, might require some assessment actions by the emergency organizations.

The purpose of the Alert declaration is to:

a. Assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required.

b. Provide offsite authorities current status information.

Guidelines for Plant, State, and local actions are listed in Table 4-1. An incident shall be classified as an Alert if there is real or potential limited releases of radioactive material to the environment. A situation shall be classified at the Alert level only if EALs for higher classification have not been exceeded or are not expected to be exceeded in the near term.
4.1.3 Site Area Emergency

A Site Area Emergency is defined as that situation where, "Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary."

The purpose of the Site Area Emergency declaration is to:

a. Assure that emergency response facilities are manned.

b. Assure that radiation-monitoring teams are dispatched both onsite and offsite.

c. Assure that personnel required for evacuation of near-site areas are at their duty stations if the situation becomes more serious.

d. Provide consultation with offsite authorities.

e. Provide updates for the public through offsite authorities.

Guidelines for Plant, State, and local actions are listed in Table 4-1. Although immediate protective actions are not automatically required, declaration of a Site Area Emergency shall set into motion all personnel onsite and offsite who would be required to perform actions up to and including the evacuation of near-site areas. Dispatched radiation monitoring teams will make continuing assessments to provide officials with information to decide protective actions. The Site Area Emergency classification includes accidents that have significant radiation release potential.

Unlike the Unusual Event and Alert classifications of emergencies, the Site Area Emergency classification may involve some radiation exposure to the near-site public. Many of the accidents included in this classification have the potential for degradation to the General Emergency classification. Although the EALs for this classification have been selected at values well below the EPA PAGs, offsite monitoring team reports and continuing assessment actions shall lead to any final decision on protective actions to be taken.

Accidents that have significant potential for the release of radioactive material shall be classified as a Site Area Emergency.
4.1.4 General Emergency

The General Emergency is the most severe classification of emergency. The General Emergency classification is defined as that situation where, "Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area."

The purpose of the General Emergency declaration is to:

a. Initiate predetermined protective actions for the public.

b. Provide continuous assessment of information from Palisades Plant, and offsite monitoring groups.

c. Initiate additional measures as indicated by event releases or potential releases.

d. Provide consultation with offsite authorities.

e. Provide updates for the public through offsite authorities.

Guidelines for Plant, State, and local actions are listed in Table 4-1. Some protective actions may be recommended upon declaration of the General Emergency since the lower limits of the EPA PAGs are likely to be exceeded. Emergency Action Levels (EAL) have been selected so that time should be available to make some confirmatory measurements in the field prior to implementation of the more extensive (i.e., evacuation) protective action. Some of the General Emergency action levels require a dose projection calculation using actual meteorology. This differs from the adverse meteorology assumptions used in the Site Emergency action Action levels in order to remove this built-in conservatism and to preclude declaring a General Emergency when actual conditions do not warrant the higher classification. Declaration of a General Emergency requires a recommendation to the State for protective actions for the local population.

4.2 CLASSIFICATION OF POSTULATED ACCIDENTS

The events postulated in Section 14, Palisades Plant Final Safety Analysis Report (FSAR), may be categorized into one or more of the four emergency classifications. A complete discussion of these events may be found in the FSAR.
## TABLE 4-1
### GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNUSUAL EVENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Class Description</strong></td>
<td>Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.</td>
<td>1. Promptly inform state and local offsite authorities of nature of unusual condition as soon as discovered.</td>
</tr>
<tr>
<td>Purpose</td>
<td>Purpose of offsite notification is to: (1) assure that the first step in any response later found to be necessary has been carried out, (2) bring the operating staff to a state of readiness, and (3) provide systematic handling of Unusual Events information and decision making.</td>
<td>1. Provide fire or security assistance if requested.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Augment on-shift resources as needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Assess and respond.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Escalate to a more severe class, if appropriate, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Close out with verbal summary to offsite authorities; followed by written summary.</td>
</tr>
</tbody>
</table>
### TABLE 4-1
**GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS**

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALERT</td>
<td>1. Promptly inform state and local offsite authorities of Alert status and reason for emergency as soon as discovered.</td>
<td>1. Provide fire or security assistance if requested.</td>
</tr>
<tr>
<td></td>
<td>3. Assess and respond.</td>
<td>3. Alert to standby status key emergency personnel including monitoring teams and associated communications.</td>
</tr>
<tr>
<td></td>
<td>5. Designate an individual for Plant status updates to offsite authorities.</td>
<td>5. Escalate to a more severe class, if appropriate.</td>
</tr>
<tr>
<td></td>
<td>6. Provide meteorological data to off site authorities and if any releases are occurring, dose estimates for actual releases.</td>
<td>6. Maintain Alert status until verbal closeout or reduction of emergency class.</td>
</tr>
<tr>
<td></td>
<td>7. Escalate to a more severe class, if appropriate or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Close out or recommend reduction in emergency class by briefing of offsite authorities and by phone followed by written summary.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE AREA EMERGENCY</td>
<td>1. Promptly inform state and local offsite authorities of Site Area Emergency status and reason for emergency as soon as discovered.</td>
<td>1. Provide any assistance requested.</td>
</tr>
<tr>
<td></td>
<td>2. Augment resources by activating onsite Technical Support Center, onsite Operations Support Center, and near-site Emergency Operations Facility (EOF).</td>
<td>2. If sheltering near the site is desirable, activate public notification system within at least two miles of the Plant.</td>
</tr>
<tr>
<td></td>
<td>3. Assess and respond.</td>
<td>3. Provide public within at least about 10 miles periodic updates on emergency status.</td>
</tr>
<tr>
<td></td>
<td>4. Dispatch onsite and offsite monitoring teams and associated communications.</td>
<td>4. Augment resources by activating primary response centers.</td>
</tr>
<tr>
<td></td>
<td>5. Designate an individual for Plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).</td>
<td>5. Dispatch key emergency personnel including monitoring teams and associated communications.</td>
</tr>
<tr>
<td></td>
<td>6. Make senior technical and management staff onsite available for consultation with NRC and state on a periodic basis.</td>
<td>6. Alert to standby status other emergency personnel (eg, those needed for evacuation) and dispatch personnel to near-site duty stations.</td>
</tr>
<tr>
<td></td>
<td>7. Provide meteorological and dose estimates to offsite authorities for actual releases via a designated individual or automated data transmission.</td>
<td>7. Provide off-site monitoring results to licensee, DOE, and others and jointly assess them.</td>
</tr>
</tbody>
</table>

Cont'd on next page.

### Class Description
Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

### Purpose
Purpose of the Site Area Emergency declaration is to: (1) assure that response centers are manned, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.

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## TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE AREA EMERGENCY (cont)</td>
<td>8. Provide release and dose projections based on available Plant condition information and foreseeable contingencies.</td>
<td>8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.</td>
</tr>
<tr>
<td></td>
<td>9. Escalate to a General Emergency class, if appropriate.</td>
<td>9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td>10. Provide press briefings with licensee.</td>
</tr>
<tr>
<td></td>
<td>10. Close out or recommend reduction in emergency class by briefing of offsite authorities and by phone followed by written summary</td>
<td>11. Escalate to General Emergency class, if appropriate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Maintain General Emergency status until closeout or reduction of emergency class.</td>
</tr>
</tbody>
</table>
### Table 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL EMERGENCY</td>
<td></td>
</tr>
</tbody>
</table>

**Class Description**

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

**Purpose**

Purpose of the General Emergency declaration is to:

1. Initiate predetermined protective actions for the public,
2. Provide continuous assessment of information from licensee and offsite organization measurement,
3. Initiate additional measures as indicated by actual or potential releases, and
4. Provide consultation with offsite authorities, and
5. Provide updates for the public through offsite authorities.

<table>
<thead>
<tr>
<th><strong>Licensee Actions</strong></th>
<th><strong>State and/or Local Offsite Authority Actions</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Promptly inform state and local offsite authorities of General Emergency status and reason for emergency as soon as discovered (parallel notification of state/local).</td>
<td>1. Provide any assistance requested.</td>
</tr>
<tr>
<td>Assess and respond.</td>
<td>3. For actual or projected severe core damage accidents or loss of control of facility, recommend evacuation for 2 mile radius and 5 miles downwind (unless conditions make evacuation dangerous) and assess need to extend distances. Advise the remainder of plume EPZ to go indoors and listen to Emergency Alert System (EAS) messages.</td>
</tr>
<tr>
<td>Dispatch onsite and offsite monitoring teams and associated communications.</td>
<td>4. Augment resources by activating primary response centers.</td>
</tr>
<tr>
<td>Designate an individual for Plant status updates to offsite authorities and periodic press briefings (perhaps joint offsite authorities).</td>
<td>5. Dispatch key emergency personnel including monitoring teams and associated communications.</td>
</tr>
<tr>
<td>Make senior technical and management staff onsite available for consultation with NRC and state on a periodic basis.</td>
<td>6. Dispatch other emergency personnel to duty stations within five-mile radius and alert all others to standby status.</td>
</tr>
<tr>
<td>Provide meteorological and dose estimates to offsite authorities for actual releases via a designated individual or automated data transmission.</td>
<td>7. Provide offsite monitoring results to licensee, DOE, and others and jointly assess them.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GENERAL EMERGENCY</td>
<td>8. Provide release and dose projections based on available Plant condition information and foreseeable contingencies.</td>
<td>8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.</td>
</tr>
<tr>
<td>(cont)</td>
<td>9. Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary.</td>
<td>9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.</td>
</tr>
<tr>
<td></td>
<td>11. Maintain General Emergency status until closeout or reduction of emergency class.</td>
<td></td>
</tr>
</tbody>
</table>
5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

Emergency planning must consider the capabilities of the normally present operating staff, augmented by support from other utility personnel and local and distant support. The initial phases of an emergency situation at a permanently shutdown and defueled nuclear power plant will involve a relatively small number of individuals. These individuals must be capable of: (1) determining that an emergency exists, (2) providing initial classification and assessment, and (3) promptly notifying other groups and individuals in the emergency organization.

The Palisades Plant Organization has complete capability, at all times, to perform the detection, classification, and notification functions required in the early phases of an emergency. These capabilities are augmented, as required, by the Palisades Emergency Response Organization (ERO).

This section of the Site-Post-Shutdown Emergency Plan addresses the assignment of personnel and the establishment of responsibilities and authority for the:

a. Palisades Plant Organization
b. Palisades Emergency Response Organization

Figure 5-1 shows the interfaces between these organizations, governmental agencies, and the general public.

5.1 PALISADES PLANT ORGANIZATION

The Palisades Nuclear Plant operating and shift engineering activities are under the control of the General Manager, Plant Operations. The operating and shift engineering activities at the Plant are conducted by operating crews on twelve-hour shifts. Each twelve-hour shift is responsible for continuous operation of the Plant.

5.2 OPERATING AND ENGINEERING ORGANIZATION

The Palisades Plant organization includes personnel encompassing both the management and operations of the unit staff. The minimum on-shift staffing is indicated in Figure 5-2.
5.2.1 GENERAL MANAGER, PLANT OPERATIONS

The General Manager, Plant Operations is responsible for the technical and administrative management of the day-to-day physical operation of the Plant; this includes Operations, Chemistry and Radiological Services, Maintenance, and Planning and Scheduling.

5.2.2 Director - Emergency Programs

The Director, Emergency Programs, is directly responsible for Entergy Emergency Preparedness, including: company-wide projects, National emergency interfaces, and regulatory issues.

5.2.3 Director - Engineering

The Director - Engineering is responsible for system and design engineering, nuclear engineering, engineering programs, dry fuel services, and nuclear fuel supply.

5.2.4 Regulatory and Performance Improvement Director

The Regulatory and Performance Improvement Director provides onsite oversight/supervision for emergency planning.

5.2.5 Duty Station Manager

This is a rotating position among qualified Plant upper management (as defined by the General Manager, Plant Operations). The Duty Station Manager functions as the General Manager, Plant Operations on backshifts and weekends.

5.2.6 Shift Manager

The Shift Manager, one of whom is on duty at all times, is responsible for the safe and efficient operation of the Plant during his assigned shift. He maintains control over Plant operations as the Senior Licensed Operator Certified Fuel Handler (CFH) unless he is properly relieved by another member of the Plant staff who holds a valid Senior Operator's License. In an emergency condition, the Shift Manager initially assumes the role of Emergency Director.
5.2.7 **Shift Engineers/Shift Technical Advisors (SE/STA) DELETED**

Shift Engineers/Shift Technical Advisors function in an oversight role for accident assessment and evaluation of operating conditions. While on duty, SE/STAs diagnose abnormal events and report to the Shift Manager. In an emergency condition, the SE/STA provides SEP oversight and may assist the Shift Manager in his role as Emergency Director.

5.3 **PALSADEN EMERGENCY RESPONSE ORGANIZATION**

In the event of an emergency in which one of the classification levels is declared (Unusual Event, Alert, Site Area Emergency, or General Emergency), all or a portion of the Site Post-Shutdown Emergency Plan will be activated. The assignment of responsibilities in the Emergency Response Organization (ERO) is ultimately the responsibility of the General Manager, Plant Operations. However, the ERO is predefined and alternate assignments to various positions are specified to provide for automatic, unambiguous **manning-staffing** of the emergency organization within the time necessary to respond to the emergency.

In general, the emergency organization will be housed in five emergency response centers:

a. Control Room
b. Technical Support Center
c. Operations Support Center
d. Emergency Operations Facility
e. Joint Information Center

5.3.1 **Control Room**

The Control Room is designed to be habitable under accident conditions and shall serve as the on-site Emergency Control Center. Emergency lighting, power, air filtration-ventilation system, and shielded walls enable the operators to remain in the Control Room to ensure that the reactor-plant remains in a safe condition. The minimum on-shift staffing is indicated in Figure 5-2.
5.3.2 Technical Support Center

The Technical Support Center (TSC) will provide Plant management and technical support to Operations personnel during emergency conditions and guidance to Control Room operating personnel to mitigate the effects of the emergency condition.

The TSC organization can be found in Emergency Implementing Procedure EI-4.1, "Technical Support Center Activation."

5.3.3 Operations Support Center

The Operations Support Center (OSC) will coordinate Emergency Maintenance, Radiation Protection, and Chemistry activities of Plant personnel. The Control Room or TSC (when activated) will direct the priorities for the OSC. The OSC organization can be found in Emergency Implementing Procedure EI-4.2, "Operations Support Center Activation."

5.3.4 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is located in downtown Benton Harbor, approximately 16 miles South Southwest from the Plant. The EOF staff is responsible for overall management of an emergency and for communicating with external agencies upon transfer of responsibility from the Control Room.

Activation of the EOF is mandatory at the Alert, Site Area, and General Emergency Classifications. Activation of the EOF at an Unusual Event will be at the request of the Shift Manager. The EOF will be staffed by Plant personnel. The initial staff may be supplemented by federal, state, and local officials.

Once activated and operational, the EOF Emergency Director will be responsible for management of overall emergency response. The EOF will coordinate emergency response activities with federal, state, and local agencies to mitigate the consequences of an emergency. The EOF organization can be found in Emergency Implementing Procedure EI-4.3, "Emergency Operations Facility Activation."

The EOF provides an alternative facility, with communications capabilities for contacting the Control Room and plant security, to serve as a staging area for augmented emergency response staff if the site is under threat of, or experiencing hostile action.

The design features of the EOF are discussed in Palisades Site Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."
5.3.5 Joint Information Center (JIC)

The plant Communications personnel shall be responsible for maintenance of the Palisades Nuclear Plant Public Information Policies and Procedures. These provide for disseminating information to the public via the media and establishing a system for rumor control during an emergency. Public Affairs personnel shall coordinate the activation and management of the Joint Information Center (JIC) in cooperation with the Corporate Public Affairs Department. Public Affairs personnel shall prepare and issue press releases in cooperation with state and local agencies. Reference Palisades Nuclear Plant Emergency Public Information Policies and Procedures for details.

5.4 EMERGENCY STAFFING

Normal Plant staffing provides sufficient personnel for continuous protracted emergency operation. The extent to which the emergency organization is activated is dependent upon the classification of the emergency. A method for emergency staff augmentation is available to the Shift Manager. Figure 5-2 provides requirements for minimum additional staffing and required arrival times. Details of emergency staff augmentation are available in Emergency Implementing Procedure EI-2.2, "Emergency Staff Augmentation."

5.4.1 Shift Manager/EOF Emergency Director

The Shift Manager/EOF Emergency Director is responsible for the overall assessment of emergency conditions, especially where emergency conditions present a real or potential hazard to off-site persons or property. The Shift Manager/EOF Emergency Director will have the overall responsibility for operational decisions involving the safety of the Plant and its personnel, and for making recommendations based on technical information supplied by support personnel regarding the general public during an emergency situation. The Shift Manager/EOF Emergency Director will also implement the Palisades Site-Post-Shutdown Emergency Plan through the use of specific Emergency Plan Implementing Procedures. The Shift Manager/EOF Emergency Director is responsible for ensuring the capability for continuous operation of emergency response centers, including personnel and material resources. In addition, the Shift Manager/EOF Emergency Director is responsible for providing off-site officials with pertinent information regarding the conditions at the Plant.
5.4.2 Shift Manager/Emergency Plant Manager

The Shift Manager/Emergency Plant Manager may not delegate the decision to evacuate the site or the decision to authorize exposures that exceed the 10 CFR 20 regulatory exposure limits for emergency workers.

Prior to activation of the EOF, the decision to recommend protective actions to off-site organizations also cannot be delegated. The EOF Director, in consultation with the Shift Manager, will assume this responsibility after the EOF is activated.

For backshifts and weekends, the Duty Station Manager assumes the role of the Plant General Manager.

NOTE: The Shift Manager assumes the responsibilities of the Site-Post-Shutdown Emergency Plan until relieved by the EOF Director.

The Emergency Plant Manager shall be assigned to the Technical Support Center once it is activated.

5.5 RECOVERY ORGANIZATION

Recovery after an emergency condition will be handled by the emergency organization unless conditions indicate that recovery will be complicated or will take a long period of time. At the discretion of the EOF Emergency Director, the Plant will shift from an emergency organization structure to a Recovery Organization. Guidelines that will be employed for determining this shift are explained in Palisades Site-Post-Shutdown Emergency Plan, Section 9.0, "Recovery."

The Recovery Organization will depend upon the nature of the accident and the situations preceding the accident.

The TSC Engineering Coordinator will also support the EOF Rad Assessment Coordinator in determining how much radioactivity potentially can be released to the atmosphere based on the nature and extent of core damage spent fuel damage.
5.6 OFF-SITE EMERGENCY RESPONSE SERVICES

The potential consequences of some emergencies may require the support services of off-site individuals, organizations, and agencies. As a result, local support service arrangements have been made with offsite groups to provide onsite aid in the event of an emergency situation, including those resulting from hostile actions. Support services encompass such areas as medical assistance, fire control, evacuation, ambulance services, and law enforcement. Written agreements are entered into to assure these individuals'/agencies'/organizations' availability and capabilities. In the written agreements, the agencies have outlined their responsibilities or have agreed to their responsibilities as outlined in this section. A listing of the letters of agreement, contracts, or signature pages has been included in Appendix A. In those cases where agency assistance is mandated by law (i.e., the State of Michigan), a letter of agreement may be excluded from the Plan. The services provided by local support groups are listed in the following sections.

5.6.1 Medical Services

The primary hospital facility for the treatment of serious medical emergencies occurring at the Plant is South Haven Community Hospital, located in South Haven, Michigan, approximately 6 miles from the Plant. South Haven Community Hospital is equipped to receive and treat all types of accident victims, including those with radioactive contamination. The backup medical facility is Lakeland Regional Medical Center, located approximately 20 miles from the Plant in St Joseph, Michigan. The hospital shall be notified of incoming accident victims at the direction of the Emergency Director. The hospital may contact the Plant by telephone in the event information is required in the treatment of a victim.

Ambulance service for the transportation of accident victims, including radioactively contaminated victims, is provided by the Covert Fire Department, with backup services provided by South Haven Ambulance Service and Medic I of Benton Harbor.

The ambulance units and Emergency Medical Technicians are trained and equipped to respond to a medical emergency at the Plant. The Shift Manager is responsible for the decision to request off-site medical support. The ambulance service shall be notified at the direction of the Shift Manager. Contact with the ambulance may be maintained through the respective medical service dispatcher.
5.6.2 Fire-Fighting Services

When it is determined by the Emergency Director that off-site fire support is necessary, fire protection response will be by the Covert Fire Department with mutual aid provided by the Van Buren County Mutual Aid Pact. Contact may be made using the telephone system. Fire Department personnel will be trained in handling emergency situations for nuclear facilities.

In addition to their fire suppression capabilities, the fire departments will provide specially equipped vehicles and personnel trained for emergency rescue and other contingencies.

5.6.3 Law Enforcement Agencies

In the event of a civil disturbance or criminal act, the Michigan State Police, Van Buren County Sheriff Department, and the Covert Township Police Department may provide law enforcement assistance.

An Auto-Dial line exists to the Michigan State Police Operations in Lansing, Michigan and the Van Buren County Sheriff Department in Paw Paw, Michigan.

5.6.4 Van Buren County Office of Domestic Preparedness

The Van Buren County Office of Domestic Preparedness is located in the County Sheriff's Courthouse Annex, Paw Paw, Michigan. In the event of an emergency, Van Buren County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chairman of the Van Buren County Board of Commissioners, Van Buren County Domestic Preparedness Director, and the Emergency Operations Center (EOC), if activated. Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chairman of the Van Buren County Board of Commissioners is responsible for activation of the county's Emergency Operations Plan. The Van Buren County Domestic Preparedness Director is responsible for overall coordination and planning of emergency response activities within the county. The Director will implement the activation and operational aspects of the EOC and alert key officials and agencies. The Director will coordinate efforts with other agencies to inform the public in affected portions of the county to take protective actions when conditions warrant.
5.6.5 Berrien County Emergency Management

The Berrien County Emergency Operations Center (EOC) is located in Benton Harbor, Michigan. The Chief of Staff (Director of Emergency Management) is responsible for overall coordination of emergency operations in Berrien County in the event of an emergency. The Chief of Staff operates under the direction of the Chief Executive (Chair, Berrien County Board of Commissioners). Berrien County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chief of Staff and/or the Emergency Management Coordinator and the Emergency Operations Center (EOC), if activated. Site Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chief Executive (Chair, Berrien County Board of Commissioners) is responsible for activation of the County's Emergency Operations Plan and for overall coordination and planning of emergency operations with Van Buren County until this information and direction is provided by the State of Michigan. The Chief of Staff (Director of Emergency Management) is responsible for initiating the manning staffing of the EOC. By prior agreement between counties, communications between the Plant and Berrien County will normally be directed through Van Buren County.

5.6.6 Allegan County Office of Emergency Preparedness

The Allegan County Office of Emergency Management is located at the Allegan County Office Complex, Allegan, Michigan. In the event of an emergency, Allegan County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chairperson of the Allegan County Board of Commissioners, Allegan County Emergency Management Director, and the Emergency Operations Center (EOC), if activated. By prior agreement between the counties, communications between the Plant and Allegan County will normally be directed through Van Buren County. Palisades Site Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chairperson of the Allegan County Board of Commissioners is responsible for the activation of the County's Emergency Operations Plan. The Allegan County Emergency Management Director is responsible for overall coordination and planning of emergency response activities within the county. The Emergency Management Director will implement activation of the EOC and alert key officials and agencies.
5.7 COORDINATION WITH GOVERNMENTAL AGENCIES

The coordination between the state, county, and federal emergency plans and the Palisades Site Post-Shutdown Emergency Plan serves to ensure the safety and health of the public. The coordination of the emergency plans enables all organizations to participate without confusion or hesitation in regard to their responsibilities. All participating agencies should have a clear picture of the roles they play during an emergency situation. As a part of the coordination effort, each participating agency is assigned specific responsibilities and authority in regard to both emergency planning and emergency response. Written agreements with governmental agencies are included in Appendix A, "Agreement With Offsite Individuals, Agencies, and Organizations."

5.7.1 State of Michigan Agencies

State agencies are under the direction of the Governor of the State of Michigan.


The State Police Emergency Management and Homeland Security Division is the leading state agency for emergency response planning and operations. This agency is under the direction of the State Director of Emergency Management. Responsibilities of this group include:

1. Development and maintenance of the Michigan Emergency Management Plan and assistance to the counties in developing their individual emergency operations plans.

2. Recommendations to the Governor of the State of Michigan regarding emergency measures.

3. Arranging training programs for state and local agencies designed to promote effective response to radiological incidents.

4. Providing communications, radiological monitoring, and other available support to affected local governments.

5. Coordinating the support of other state agencies or political subdivisions near the affected area and obtaining the assistance of federal agencies as required.

The normal point of contact for the Palisades Plant is through the Operations Division of the Michigan State Police in Lansing.
The Palisades Plant will support the State Police by providing specific information pertaining to the nature of the incident, recommendations on protective actions, and other available information and technical guidance.

b. Michigan State Police - Paw Paw Post

Michigan State Police (MSP) is responsible for providing emergency traffic control and other available assistance. The MSPs nearest post is located in Paw Paw, Michigan with direct radio communications to Van Buren, Allegan, and Berrien Counties. Communications are detailed in Palisades Site Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."

c. Michigan Department of Transportation

Michigan Department of Transportation (MDOT) assists in emergency traffic regulation coordination with the Michigan State Police, the Sheriff, and the County Road Commission of the affected county.

d. Michigan Department of Environmental Quality (DEQ)

The Michigan Department of Environmental Quality, Radiological Protection Section located in Lansing is responsible for administering and directing radiation control programs and activities within the state. Their Radcon Field Team provides direct radiological emergency response capability during emergency conditions. The team's responsibilities include:

1. Moving immediately to the affected area and performing radiological monitoring, as appropriate.

2. Determining and reporting the nature and scope of the hazard.

3. Providing state government with technical guidance, recommending appropriate emergency countermeasures and recovery actions, and otherwise assisting the affected community.

The Department of Environmental Quality, Radiological Protection Section is responsible for providing the public with health hazard evaluation, guidance, or protective actions and other pertinent information concerning radiological incidents.
e. Michigan Department of Health and Human Service

The Michigan Department of Health and Human Services is responsible for coordinating emergency medical support of radiological incidents, as requested by DEQ, Radiological Protection Section, or local health authorities.

f. Michigan Department of Agriculture and Rural Development

The Michigan Department of Agriculture and Rural Development acts on advice from the State Health Director for controlling agricultural products and production for the purpose of radiation health hazard abatement. Protective actions initiated by the Department of Agriculture and Rural Development may include any or all of the protective actions recommended by the Environmental Protection Agency.

5.7.2 Federal Agencies

a. Nuclear Regulatory Commission (NRC)

Nuclear Regulatory Commission for the State of Michigan may request the Federal Department of Energy dispatch Federal Radiological Monitoring and Assessment Center (FRMAC) personnel to the scene in the event of an emergency who could perform radiological monitoring and dose assessment. The Emergency Director has the authority to request NRC assistance. The office may also furnish advice and assistance to the Plant as deemed necessary. The NRC shall be notified within an hour, anytime all or part of the Site Post-Shutdown Emergency Plan is activated. Means of communications are described in the Site Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."

Facilities for the NRC are available in the Technical Support Center and the Emergency Operations Facility, including work space and telephones. The Emergency Operations Facility provides space for trailers for long term support capabilities.
b. US Department of Energy (DOE)

The Department of Energy will assist during radiological emergencies by furnishing advice, consultation, and assistance regarding the protection of personnel, treatment of injured and/or exposed persons, minimization of further exposure and contamination, and the determination of existence and extent of contamination. The DOE will respond to the FRMAC in support of the state and local monitoring operations, but may receive requests for assistance directly from the Plant as authorized by the Emergency Director.

Contact with the DOE may be established using telephone lines. The Emergency Operations Facility provides space for trailers in support of DOE activities.

c. Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency will assist the utility in real events with consultation and expertise in controlling an actual emergency. FEMA also evaluates Local and State Emergency Plans to ensure adequacy.

d. Federal Radiological Monitoring and Assessment Center

The Federal Radiological Monitoring and Assessment Center is a joint facility for all federal agencies involved in evaluating and mitigating radiological events. The NRC is the Lead Federal Agency (LFA) for the FRMAC and will coordinate the efforts of all federal agencies involved. The FRMAC will supply information and support to state and local governments concerning radiological conditions.

5.8 INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO)

The Institute of Nuclear Power Operations will provide emergency response as requested by Entergy Corporation. INPO can provide assistance locating sources of emergency manpower and equipment, analyzing operational aspects of the event, and organizing industrial experts who could advise Entergy Corporation on technical matters. INPO will be contacted by means of its 24-hour telephone number in the event of a radiological emergency. The EOF Emergency Director shall be responsible for requesting assistance from INPO.
FIGURE 5-1
EMERGENCY RESPONSE INTERFACES

Site Vice President

Emergency Plant Manager

EOF Emergency Director & Staff

Technical Support Center

Control Room

Operations Support Center

Federal Government

State Government

Additional Agencies

Joint Information Center

County Government

Communication Authority

Entergy Employees

Public

Media
## FIGURE 5-2
### POST-SHUTDOWN PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>60 Min</td>
<td>90 Min</td>
</tr>
<tr>
<td><strong>Plant Operations and</strong></td>
<td><strong>Assessment of</strong></td>
<td><strong>Operational Aspects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shift Engineer/Shift</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical Advisor (SRO)</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shift Manager (SRO)</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control Room Supervisor (SRO)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nuclear Control Operators</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nuclear Plant Operators<strong>Non-Certified Operators</strong></td>
<td>62</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Director</strong></td>
<td></td>
<td>Notify licensee, state, local, and federal personnel and maintain communication</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senior Manager</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td><strong>Notification/Communication</strong></td>
<td></td>
<td></td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senior Radiation Protection (RP) Expertise</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td><strong>Radiological Accident Assessment and Support of Operational Accident Assessment</strong></td>
<td>Emergency Operations Facility (EOF) Director Offsite Dose Assessment Chemistry/Radiochemistry</td>
<td>Senior Manager</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chem-RP Technicians</td>
<td>1*</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTES:**
- * May be provided by shift personnel assigned other functions.
- ** Each of up to 2 of the 6 on-shift NPO positions may be filled by a fire brigade qualified person who is also minor maintenance qualified; or alternately by 2 persons per required NPO, one fire brigade qualified and the other minor maintenance qualified.
## FIGURE 5-2  
**POST-SHUTDOWN** PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>g. Dosimetry</td>
<td></td>
<td></td>
<td></td>
<td>60 Min</td>
</tr>
</tbody>
</table>
## FIGURE 5-2
POST-SHUTDOWN PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant System Engineering, Repair, and Corrective Actions</td>
<td>Technical Support</td>
<td>Core/Thermal Hydraulics</td>
<td>1*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical/</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mechanical</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td>Repair and Corrective Actions</td>
<td>Mechanical Maintenance</td>
<td>1*</td>
<td>1</td>
<td>90 Min</td>
</tr>
<tr>
<td></td>
<td>Radwaste Operator</td>
<td>--</td>
<td>4</td>
<td>90 Min</td>
</tr>
<tr>
<td></td>
<td>Electrical Maintenance</td>
<td>1*</td>
<td>21</td>
<td>90 Min</td>
</tr>
<tr>
<td></td>
<td>Instrument and Control (I&amp;C) Technician</td>
<td>--</td>
<td>1</td>
<td>90 Min</td>
</tr>
</tbody>
</table>

**NOTES:**
* May be provided by shift personnel assigned other functions.
<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Monitoring Teams (FMTs)</td>
<td>Onsite FMT - Radiation monitor to assess environmental radiation/contamination and provide input to Senior Radiation Protection Expertise. Also provide RP coverage for FMT. Offsite FMT - Perform environmental radiation/contamination assessments and radioactive plume tracking. Communicate and coordinate with applicable ERO supervision. Responsible for the radiation protection of the FMT.</td>
<td>RP Technician</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td>Transportation</td>
<td>--</td>
<td>Drivers</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td>Fire Fighting</td>
<td>--</td>
<td>--</td>
<td>Fire Brigade per Technical Specifications</td>
<td>Local Support</td>
</tr>
</tbody>
</table>
### FIGURE 5-2
PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rescue Operations and First-Aid</td>
<td>--</td>
<td>--</td>
<td>2*</td>
<td>Local Support</td>
</tr>
<tr>
<td>Site Access Control and Personnel</td>
<td>Security, fire fighting communications, personnel accountability</td>
<td>Security Personnel</td>
<td>All per Security Plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>454</td>
<td></td>
<td>2012</td>
<td>52</td>
</tr>
</tbody>
</table>

**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 additional 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.

* May be provided by shift personnel assigned other functions.
6.0 EMERGENCY MEASURES

a. This section identifies the measure to be used for each type of emergency previously classified in Section 4. The logic presented in this section is used as the basis for the detailed Palisades Nuclear Plant Emergency Implementing Procedures which define the emergency actions to be taken for each emergency classification. Emergency measures begin with the following:

1. Recognition, classification, and declaration of an emergency condition.
2. Notification of the applicable agencies and personnel (Figure 6-1).
3. Mobilization of the appropriate portions of the emergency organization.

b. Emergency measures are additionally organized into the following categories:

1. Assessment actions
2. Corrective actions
3. Protective actions

These measures are described in the following sections for each emergency classification.

6.1 ACTIVATION OF THE EMERGENCY ORGANIZATION

If it appears that an incident or condition may meet or exceed a predetermined value or condition specified as an Emergency Action Level in Emergency Implementing Procedure EI-1, "Emergency Classification and Actions," and PSEP Supplement 1 "SITE-POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts" then certain portions of this plan and specific procedures shall require implementation.

The Shift Manager will initially classify the emergency and ensure required notifications are made. The Shift Manager shall ensure that an overall assessment of the emergency is performed in order to determine the most appropriate classification and, based on this determination, activate portions of the emergency organization as necessary. The methodology used in activating the emergency organizations during each class of emergency is provided in the following sections:
6.1.1 Control Room Personnel

a. Should emergency conditions, either real or potential, arise, it is expected that the Nuclear Control Operators and the Shift Manager will initially be made aware of the situation by alarms, instrument readings, reports, etc. The Shift Manager shall ensure that the General Manager, Plant Operations or Duty Station Manager on backshift and weekends is immediately informed of any possible emergency situation.

b. The Shift Manager is responsible for ensuring the performance of the initial assessment of the emergency (e.g., Plant and reactor spent fuel pool status, radiological conditions, etc.) in the following manner:

1. Determine the immediate actions necessary to be taken to ensure the safe and proper operation of the Plant. The Shift Engineer will advise and assist the Shift Manager on matters pertaining to the safe and proper operation of the station with regard to nuclear safety.

2. If the situation requires activation of all or part of the Site Emergency Plan, the Shift Manager shall:

   (a) Initiate the applicable Emergency Implementing Procedures.

   (b) Initially classify the emergency.

   (c) Ensure the appropriate alarm is sounded.

   (d) Announce the location, type and classification of the emergency on the Plant public address system.

   (e) Notify the following personnel and agencies of the emergency condition(s): (Reference Emergency Implementing Procedure EI-3, "Communications and Notifications."). Message authentication may be used as deemed necessary.

      (1) Van Buren County

      (2) State of Michigan

      (3) NRC

      (4) The General Manager, Plant Operations or designated alternate (Duty Station Manager)
NOTE: While both pages of the notification form are not necessary for every notification, the two pages together include the elements listed in the following sections.

(f) Initial notification should consist of the following as appropriate:

(1) Name and telephone number (if needed).

(2) Location of incident.

(3) Date and time of incident.

(4) Emergency classification (Emergency Implementing Procedure EI-1, "Emergency Classification and Actions").

(5) Whether a release is taking/has taken place.

(6) The affected/potentially affected population.

(7) Recommended protective actions.

(g) Follow-up notification should consist of the following as appropriate:

(1) Name and telephone number (if needed).

(2) Location of incident.

(3) Date and time of incident.

(4) Emergency classification (EI-1).

(5) Type of actual or projected release (liquid or gaseous) and estimated duration/impact times.

(6) Estimate of amount or radioactive material released, points of release, and height of release (Emergency Implementing Procedure EI-6, "Offsite Dose Calculation and Recommendations for Protective Actions").

(7) Chemical and physical form of released material. Include estimates of the relative quantities and concentration of noble gas, iodine, and particulates (EI-6).
(8) Prevailing meteorological conditions (EI-6).

(9) Actual or projected dose rates of at the site boundary and the integrated dose rate at the site boundary (Emergency Implementing Procedures EI-6 and EI-9, "Offsite Radiological Monitoring").

(10) Projected dose rates and integrated dose rates at the projected peak and at 2, 5, and 10 miles from the site and the sectors affected.

(11) Estimate of surface contamination in Plant, onsite and offsite.

(12) Entergy Corporation emergency response actions underway.

(13) Recommended emergency actions, including protective measures.

(14) Requests for support from organizations.

(15) Prognosis for worsening or termination of event.

3. Due to the additional responsibilities assigned to the Shift Manager at the beginning of an emergency, the following actions are to be performed in the priority listed below:

(a) Ensure the safe operation of the Plant.

(b) Ensure that immediate notification requirements are met.

(c) Dispatch, in the event of radiological emergencies, Radiation Monitoring Teams, to designated analysis locations onsite and offsite.

(d) Perform additional emergency actions as time and conditions permit including accident assessment beyond that required for emergency classification.
### 6.1.2 Emergency Plant Manager

The Shift Manager will continue to perform the Command and Control actions of the Site Post-Shutdown Emergency Plan until relieved by the EOF Director. The Emergency Plant Manager reports to the EOF Emergency Director. When the EOF Director has taken Command and Control of the event and the TSC is Operational the Shift Manager and Control Room will report to the EPM. The EPM has the responsibility for command of all accident mitigation actions at the site and performs these duties from the Technical Support Center (TSC). Responsibilities include:

- a. Assume command of the TSC and OSC and the onsite mitigation efforts
- b. Provide information and recommendations to the ED regarding the classification of an emergency
- c. Ensure timely ENS notifications
- d. Perform accident assessment to prioritize mitigation actions.
- e. Coordinate the activities of the CR, TSC and OSC
- f. Direct personnel evacuation, assembly and accountability of non-essential personnel
- g. Provide information and recommendations to the ED regarding plant activities
- h. Advise the ED on core damage and plant conditions for classification and PAR determination
- i. Direct the organization and coordination of repair corrective action teams
- j. Direct onsite protective actions
- k. Authorize emergency radiation exposure and issuance of KI to recommended personnel in the CR, TSC or OSC or to Security personnel
- l. Make operational decisions involving the safety of the plant and its personnel and make recommendations to the Control Room Personnel
- m. Initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x) if appropriate
- n. Implement severe accident management procedure strategies
6.1.3 Emergency Director

The Emergency Director provides overall command and control of the emergency response. Responsibilities include:

a. Receive turnover from the SM/ED and assume command/control of EOF and activities outside the area controlled by the TSC

b. Direct the activation, operation and deactivation of the EOF

c. Determine to what extent the offsite and onsite emergency organization shall be activated

d. Upgrade the emergency classification level (cannot delegate)

e. Make Protective Action Recommendations (PAR) to offsite agencies (cannot delegate)

f. Direct and approve offsite notification to State and local agencies (cannot delegate)

g. Communicate within and between the emergency response facilities.

h. Ensure event information is communicated to other organizations (NRC, Entergy Corp, etc) to keep them informed of the emergency situation

i. Direct the activities of the EOF organization in support of the TSC and offsite response agencies (Counties, and the State of Michigan)

j. Direct protective actions for offsite monitoring teams, EOF ERO and offsite resources

k. Request assistance from offsite agencies, excluding requests for offsite medical/fire, security assistance (Coordinate request for Federal assistance through the State)
I. Authorize issuance of KI and radiation exposure in excess of 10CFR 20 limits for ERO members outside of the protected area

m. Conduct turnover of command and control to relief ED

n. Dispatch Palisades Plant liaisons to principal offsite emergency operations centers

o. Maintain adherence to the fitness for duty policy


In emergency situations, the Emergency Management and Homeland Security Division is responsible for coordinating the support of other state agencies and political subdivisions and obtaining the assistance of federal agencies as required.

The Emergency Management Division will provide the following emergency support:

a. Activation of the State Emergency Operations Center, as necessary

b. Communications, radiological monitoring, and other available support to the affected local government

c. Liaison with local, state, and federal agencies

6.1.5 Michigan Department of Environmental Quality, Radiological Protection Section

The Michigan Department of Environmental Quality, Radiological Protection Section is responsible for administering and directing radiation control programs and activities within the State of Michigan.

The Radiological Protection Section has the direct responsibility to provide the technical assistance necessary to evaluate the offsite consequences of a radiological incident, to provide protective action guidance to state and local authorities responsible for public safety, and to oversee offsite decontamination and reentry operations.

The Michigan Department of Community Health is responsible for coordinating emergency medical support as requested by the Michigan Department of Environmental Quality, Radiological Protection Section, or local health authorities.
### 6.1.6 Affected Counties: Van Buren County, Berrien County, and Allegan County

Emergency responsibilities of County Emergency Management include communication support to the responding county departments, providing warning and notification to the public, and assuring the continuation of vital services during the emergency.

### 6.2 ASSESSMENT ACTIONS

Effective coordination and direction of all portions of the emergency organization require almost continuous accident assessment during the course of the emergency. Each emergency class will require similar accident assessment methods; however, each classification imposes a different magnitude of assessment effort. In the following steps, the assessment actions to be taken for each emergency classification are outlined.

#### 6.2.1 Assessment Actions for Unusual Events

The detection of an Unusual Event shall arise from exceeding a specific Emergency Action Level for this class. Detection of the event will come as a result of alarms, instrument readings, recognition through experience, or any combination thereof. The continuing assessment actions to be performed for this classification of emergency shall be in accordance with the Emergency Implementing Procedures and shall consist of the normal monitoring of Control Room and other Plant instrumentation and status indication until the situation is resolved. If a fire is the reason for the declaration of an Unusual Event, the Shift Manager will make continuing assessments based on his knowledge and experience on whether offsite firefighting assistance is needed.

#### 6.2.2 Assessment Actions for Alerts

When an accident has been classified as an Alert by the Shift Manager, assessment actions shall be performed in accordance with the Emergency Implementing Procedures for an Alert.

These actions include:

- a. Accountability of onsite personnel.
- b. Staff augmentation, as needed.
- c. Increased surveillance of in-plant instrumentation.
d. Activation of appropriate emergency facilities.

e. Dispatch of shift personnel, if possible, to the identified problem area for confirmation and visual assessment.

f. Dispatch of onsite Radiation Monitoring Teams to monitor for possible release and to provide confirmation of correct accident classification.

g. If a radiological accident is occurring, surveillance of the in-plant instrumentation is necessary to obtain meteorological and radiological data required for calculating or estimating projected doses. This dose assessment activity shall continue until termination of the emergency in order that the updating of initial assessments may be provided to all concerned offsite agencies, the Shift Manager, and EOF Emergency Director. Emergency Implementing Procedures are provided to aid in a rapid, consistent projection of doses.

6.2.3 Assessment Actions for Site Area Emergencies

The assessment actions for the Site Area Emergency classification are similar to the actions for an Alert; however, due to the increased magnitude of the possible release of radioactive material, a significantly larger assessment will occur. The necessary personnel for this assessment effort shall be provided by mobilization of the onsite and offsite emergency organizations.

Specifically:

a. An increased amount of Plant instrumentation shall be monitored, in particular, indications of core status (eg, in-core thermocouple readings, etc) shall be monitored.

b. Radiological monitoring efforts shall be increased. Onsite and offsite radiological monitoring teams will be dispatched. In addition to beta-gamma field measurements, change out of environmental thermoluminescent dosimeters (TLD), air sampling, and collection of the environmental media for assessment of radioactive material transport and deposition may also be performed.
c. Dose assessment activities will be conducted more frequently with an increased emphasis on dose projections for use as a factor in determining the necessity for protective actions for the public. Radiological (eg, TLDs) and meteorological instrumentation readings shall be used to project the dose rate at predetermined distances from the Plant, and to determine the integrated dose received. In reporting the dose projections to offsite agencies, the dose rate, dose, and the basis for the time used for the dose estimate shall always be provided. Any confirmation of dose rates by offsite Radiation Monitoring Teams shall be reflected in reporting and/or revising the dose estimate information provided to offsite agencies.

Dose projections shall be considered with respect to the Environmental Protection Agency Protective Action Guides (Table 6-1). Reporting of assessments to offsite authorities shall include the relationship of the dose to these guidelines. Emergency Implementing Procedures will be provided for recording all pertinent information.

6.2.4 Assessment Actions for General Emergencies

Assessment actions for the General Emergency classification shall be the same as for the Site Area Emergency with some possible shift of emphasis to greater offsite radiation monitoring and dose projections extending to distances farther from the site.

6.2.5 Estimation of Offsite Dose

The Emergency Implementing Procedures (reference Emergency Implementing Procedure EI-6, "Offsite Dose Calculation and Recommendations for Protective Actions") contain several methods for calculating offsite dose to population from accidental releases. These methods include:

a. Computer Method - Implements the above method using a personal computer to speed the process.


c. Segmented Gaussian - Variable trajectory Plume model.

The above methods have been developed in cooperation with state agencies and provide methods for rapid, accurate dose estimates.
6.2.6 Data Reporting, Recording, and Analysis

Specially assigned personnel at all designated emergency centers have the responsibility for collecting, recording, and analyzing data transmitted to them. Preplanned emergency logs and procedures are provided to ensure that all necessary information is received and recorded. Included will be:

a. Data from emergency survey teams as available. This will be recorded to define the affected environs.

b. Evacuated Plant personnel will be questioned to gather all possible information on observed conditions.

c. In addition to incoming data, a log of events occurring at the emergency centers (TSC, OSC, EOF) and Control Room will be kept. Individual sections of this log will record such items as personnel exposure, contamination levels, communications, and check-off lists.

6.2.7 Interviewing Evacuees or Other Witnesses

Information from personnel evacuating the site may be collected at the evacuation control point as directed by the Emergency Plant Manager. This information shall be reported to the TSC when possible.

6.2.8 Assessment Results Communications

The EOF Emergency Director is notified of assessment results from the site and from offsite support agencies. The EOF Emergency Director, in turn, is responsible for communication back to those groups so that emergency measures may be modified as necessary.

6.3 CORRECTIVE ACTIONS

Detailed operating procedures are available to the operators for use during emergencies as well as during normal operations. Specific emergency procedures are provided to assist the operators in placing the Plant in a safe condition and taking the necessary supplemental corrective actions. In addition, operations personnel are trained in the operation of the Plant systems and their associated procedures and are, therefore, capable of taking appropriate corrective actions based on their training, knowledge, and experience.
Corrective actions shall be planned events that are taken to lessen or terminate the emergency situation. Planned radioactive releases or corrective actions that may result in a radioactive release shall be evaluated by the EOF Emergency Director, and his staff, as far in advance of the event as is possible. Such events and data pertaining to the release shall be reported to the appropriate offsite emergency response organization and/or agencies.

6.3.1 Fire Control

Provisions for firefighting and control are described in the Fire Protection Implementing Procedures. The Covert Township Fire Department and the South Haven Fire Department provide Offsite backup firefighting support.

In-plant firefighting equipment ranges from portable extinguishers to automatic sprinkler control. The Plant emergency organization includes a trained fire brigade for immediate response to any fire situation.

The Van Buren Dispatch, via 911, is first to be called. They are required to dispatch both Covert and South Haven Fire Departments. These departments consist of personnel trained for firefighting, including situations involving radioactive contamination. Additional support is available from fire departments in nearby Allegan and Berrien Counties through mutual aid agreements. These fire departments are also trained and equipped for rescue work and control of hazardous gas leaks, including chlorine gas.

6.3.2 Repair and Damage Control

The Palisades Plant staff is comprised of technically and vocationally trained personnel capable of improvising necessary repair and control measures for correction of an emergency situation. Wherever possible, corrective measures are anticipated and included in emergency and operating procedures.

6.3.3 System Control

System design is aimed at automatic corrective actions, such as Plant shutdown and system isolation, whenever operating parameters become abnormal. Operating procedures are written for manual control of these same situations, should automatic features fail.
6.4 PROTECTIVE ACTIONS

Protective actions are emergency measures taken during or after an emergency situation that are intended to minimize or eliminate the hazard to the health and safety of the general public and/or Plant personnel. Such actions taken onsite are the responsibility of the Entergy Corporation, while those offsite actions are the responsibility of the State of Michigan and local political jurisdictions. Protective Action Guides for the Environmental Protection Agency and the State of Michigan are shown on Tables 6-1 and 6-2. All visitors to the site protected area shall be either escorted by an employee knowledgeable as to the Emergency Plan response actions or shall receive training on actions required by them during an emergency.

6.4.1 Sheltering, Evacuation, Personnel Accountability

During an emergency, the relocation of personnel may be required in order to prevent or minimize exposure to radiation and radioactive materials. The following steps present information on policies applicable to such situations:

a. Plant Site

1. Notification

All persons onsite at the time of an Alert, Site Area, or General Emergency shall be notified of the emergency by a two-minute steady siren and an announcement over the public address system in the assembly areas. Notification of an Unusual Event should be over the Plant public address system. For the Alert and above, personnel shall be instructed to report to assembly areas for accountability, monitoring, and possible evacuation. Personnel accountability shall be completed in approximately 30 minutes. Specific assembly areas are designated in the Emergency Implementing Procedures. All personnel shall be trained in the locations of the assembly areas, or be escorted by an employee who is so trained. At the assembly area, members of the emergency organization shall direct efforts per the applicable Emergency Implementing Procedure. These procedures shall provide contingency plans for weather, traffic, and radiological impediments to evacuation.
2. Site Access Control

Provisions for control of access to the Palisades site have been included in the Safeguards Contingency Procedures to take care of personnel entering for business purposes and for those who might inadvertently enter. Access to the exclusion areas of the Plant is controlled by the Plant security force. Offsite support is provided by local and/or state law enforcement personnel.

3. Monitoring of Evacuees

A combination of checking electronic dosimeters and questioning of evacuees will be used to initially determine if there were any high external exposures involved in the emergency. For any known or suspected high exposures, the permanent dosimeters will be read as soon as possible and further investigation will be conducted to determine the amount of exposure or necessary actions to be taken.

Monitoring for contamination and internal ingestion at the assembly areas will be accomplished by using portable instrumentation and questioning. Priority for decontamination will be given persons found with the highest levels of contamination. Any persons suspected or known to have ingested radioactivity will be whole-body counted, as soon as conditions permit, to assess their internal exposure. Decontamination supplies for evacuees shall be available.

4. Egress Routes

Three potential routes are available: Plant access road to the east and the beach to the north or south. Unless conditions dictate otherwise, the Plant access road to the east will be the primary evacuation route. An evacuation procedure shall require a personnel accountability check at the appropriate control point/monitoring station. Security officers shall be dispatched by the Emergency Plant Manager to stop ingress from the access roads and to assist Plant personnel evacuating the site. A control point/monitoring station shall be established along the egress route in an area expected to be outside the path of possible radioactive releases.
b. Offsite Areas

1. Agency Responsibilities

The Palisades Nuclear Plant is located in Van Buren County (Covert Township), and the 10-mile emergency planning zone includes portions of Allegan and Berrien counties, including the city of South Haven. In a radiological emergency, operational control will be from the State Emergency Operations Center (SEOC) in Lansing, with local operation control from the county EOCs. Each county has an Emergency Preparedness Plan which is a legal document in compliance with Act 390 of the Michigan Public Acts of 1976.

The Michigan Department of Environmental Quality is responsible for directing radiation control programs and emergency responses within the state as stated in Act 368, Michigan Public Acts of 1978 and the Michigan Emergency Management Plan (MEMP), and the Governor's Executive Order 1996-1.

The Deputy State Director of Emergency Management of the Michigan State Police provides overall coordination of emergency operations, including the use of all state government resources upon proclamation of a State of Disaster, or State of Emergency by the Governor. The Michigan State Police will coordinate the disaster response activities of all departments of State Government.

2. Notification and Response

The local government will provide notification of the general public involved and define and identify this population. The state government will give detailed directions for protection of this population, including provisions for evacuation of personnel from affected sectors of the environs if necessary.
3. Protective Actions

Protective action procedures are covered in the Michigan Emergency Preparedness Plan and the Van Buren, Allegan, and Berrien County Emergency Plans. In summary, these plans contain the following:

(a) A public warning system composed of two components, alert and notification.

(1) The alert component is comprised of a siren system which provides coverage for a 10 mile radius around the plant, and allows the resident and transient populations to be warned within 15 minutes of the issuance of a protective action.

(2) The notification component consists of several local radio stations that broadcast appropriate initial and follow-up messages on protective actions to be taken.

(3) If a backup means of notification is necessary, other television/radio communications, vehicles with mobile public address systems (Route Alerting) and other means as necessary can be utilized.

(b) Predesignated areas are based on continuous mile circles from the Palisades Plant. These areas will be used by the responsible authorities in ordering protective actions.

(c) A communication system has been established for emergency notification of offsite agencies having protective response assignments.

(d) Emergency response and evacuation plans for offsite areas have been formulated by state and local agencies. Evacuation clear times for areas near Palisades are shown in Appendix C.
6.4.2 Contamination Control Measures

This section describes the provisions for preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other contaminable surfaces.

a. Plant Area

Access to the owner-controlled area shall be controlled. In addition, within the owner-controlled area, there are no areas for producing agricultural products. In-plant contamination control shall be exercised in accordance with approved radiation protection procedures.

b. Offsite Areas

Criteria for preventing or minimizing ingestion of, or exposure to, contaminated materials or areas is contained in the Michigan Emergency Management Plan.

Included are:

1. Isolation or quarantine and area access control.

2. Control of the distribution of affected commercial agricultural crops.

3. Control of public water supplies.

4. Means for providing advisory information regarding the use of affected home food and water supplies.

5. Criteria for permitting return to normal use.

Action levels and responsibilities for execution of these measures are included. Contaminated areas will be barricaded and posted to control access until time allows for decontamination activities. Michigan Department of Environmental Quality representatives will be responsible for these actions and will be assisted by other Michigan State Departments and/or Entergy Corporation upon request.
6.5 AID TO AFFECTED PERSONNEL

6.5.1 Emergency Personnel Exposure Criteria

Although an emergency situation transcends the normal requirements for limiting exposure, there are suggested levels of exposure acceptable in emergencies. Even under these conditions, every reasonable effort to minimize exposure must be made and personnel must be provided with appropriate monitoring devices. Three categories of risk versus benefit must be considered:

a. Saving of human life and reduction of injury.

b. Protection of health and safety of the public.

c. Protection of property.

In order to avoid restricting actions that may be necessary to save lives, it shall be left to the judgment of the individual to determine the amount of exposure that he will accept to perform an emergency action that will result in the saving of human life. Emergency team members are instructed in radiation effects and the risks involved for emergency doses. Basic guidelines provided to emergency team members are the EPA recommendations contained in Table 6-3. These exposures must be authorized by the Emergency Plant Manager based on the recommendation of the TSC Rad Coordinator.

The Radiation Protection Procedures shall be followed. In the event emergency exposure limits are approved, the same administrative methods for dose control shall be used with the higher emergency exposure limits.

Once the emergency condition has been mitigated, steps shall be taken to recover from the incident. All actions from this point shall be preplanned in order to limit exposures. Normal exposure limits will be used, areas will be controlled, and exposure of personnel documented.
6.5.2 Decontamination and First Aid

Onsite personnel decontamination facilities for emergency conditions are fully equipped with decontamination material. The decontamination facility at Palisades Plant is located at the access control area of the auxiliary building. The decontamination facility consists of a shower, sink, and first-aid kits. Decontamination supplies such as various decontamination solutions and surgical brushes will be stored in the decontamination facility. Emergency equipment located around the site is available and includes personnel monitoring equipment. There are also additional personnel monitoring equipment located at the access control area including dosimeters, and high and low-range survey instruments. A comprehensive list of materials and equipment available for use can be found in Appendix E.

In an emergency situation, decontamination is the responsibility of the Radiation Monitoring Team. When decontamination of an area or equipment is required, personnel from Operations, Maintenance, and Radiation Protection will work jointly.

Medical first-aid training is provided to designated members of the Plant emergency organization that, as a minimum, includes the Red Cross Multimedia course or equivalent, combined with the American Heart Association Cardiopulmonary Resuscitation course. This training for members of the Plant staff also includes methods of handling contaminated patients and/or injuries. At least one person on each operating shift is required to have this first-aid training.

The Covert Township Fire Department ambulance personnel and the South Haven Area Emergency Services ambulance staff are trained in caring for radiologically contaminated victims.

6.5.3 Medical Treatment

In the event of a serious accident at Palisades Plant requiring medical treatment, agreements have been made with the area hospitals. These hospitals are:

a. South Haven Community Hospital, South Haven, Michigan.

b. Lakeland Regional Medical Center, St Joseph, Michigan.
### TABLE 6-1
ENVIRONMENTAL PROTECTION AGENCY - PROTECTIVE ACTION GUIDES

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Projected Dose</td>
</tr>
<tr>
<td></td>
<td>Whichever is more limiting</td>
</tr>
<tr>
<td>Intervention Level *</td>
<td>0.5 rem (CEDE)</td>
</tr>
<tr>
<td></td>
<td>Whole body or any set of organs</td>
</tr>
<tr>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td>5 rem (CDE) any single organ</td>
</tr>
</tbody>
</table>

**NOTE:** Specific PAs are not provided due to the wide variety of actions that could be taken.
## TABLE 6-2
PROTECTIVE ACTION GUIDES (PAGs) & OBJECTIVES

### Early Plume PAGs (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG Projected Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evacuation (or sheltering)</td>
<td>1-5 rem TEDE</td>
<td>Evacuating (or for some situations, sheltering) should normally be initiated at the lower limits.</td>
</tr>
<tr>
<td></td>
<td>5-25 rem thyroid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-500 rem skin</td>
<td></td>
</tr>
<tr>
<td>Administration of stable iodine</td>
<td>25 rem thyroid</td>
<td>Requires approval of State Medical Officials</td>
</tr>
</tbody>
</table>

### Relocation PAGs (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG Projected 1st Year Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocate the general population</td>
<td>≥ 2 rem TEDE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 100 rem beta skin dose</td>
<td></td>
</tr>
<tr>
<td>Apply simple dose reduction techniques</td>
<td>&lt; 2 rem TEDE</td>
<td>These protective actions should be taken to reduce doses to as low as practicable levels</td>
</tr>
</tbody>
</table>

### Long Term Objectives (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Long Term Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
</tr>
<tr>
<td>Any single year (2 through 50)</td>
</tr>
<tr>
<td>50 Years</td>
</tr>
</tbody>
</table>
### TABLE 6-3
GUIDANCE ON DOSE LIMITS FOR WORKERS PERFORMING EMERGENCY SERVICES

<table>
<thead>
<tr>
<th>Dose Limit&lt;sup&gt;a&lt;/sup&gt; (rem)</th>
<th>Activity</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>all</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>protecting valuable property</td>
<td>lower dose not practicable</td>
</tr>
<tr>
<td>25</td>
<td>lifesaving or protection of large populations</td>
<td>lower dose not practicable</td>
</tr>
<tr>
<td>&gt;25</td>
<td>lifesaving or protection of large populations</td>
<td>only on a voluntary basis to persons fully aware of the risks involved</td>
</tr>
</tbody>
</table>

<sup>a</sup>Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas by members of the public during the intermediate phase of the incident.
FIGURE 6-1
PALISADES PLANT NORMAL NOTIFICATION CHAIN

If Needed Notifications

Covert Fire Department
Ambulance Services
Hospitals
Van Buren State Park Superintendent
Palisades Park Superintendent
Federal Aviation Administration
Department of Energy
US Coast Guard
South Haven Water Department
Berrien County Sheriff
Allegan County Sheriff
Entergy
Public Affairs

Required Notifications

Van Buren County Sheriff*
Michigan State Police
Emergency Management Division
NRC
(Note: Communicator located in TSC)
Duty Station Manager

*Not a required notification if the State Emergency Operations Center is activated.
7.0 EMERGENCY FACILITIES AND EQUIPMENT

This section describes the equipment and facilities that are utilized to:

a. Assess the extent of accident hazards.
b. Mobilize the resources required to mitigate the consequences of an accident.
c. Provide protection to Plant personnel.
d. Support accident mitigation operations.
e. Provide immediate care for injured/contaminated personnel.
f. Effect damage control.

7.1 ONSITE EMERGENCY FACILITIES

Onsite emergency support centers include the Control Room and two other areas at Palisades. These areas are designated as the Technical Support Center and the Operations Support Center as described below.

7.1.1 Control Room

The principal emergency control center is the Plant's Control Room. Operations personnel will report to the Control Room and control all evolutions from this central location. Self-Contained Breathing Apparatuses are located in or near the Control Room for personnel protection from inhalation.
7.1.2 Technical Support Center

The Technical Support Center is located in the area immediately adjacent to the Control Room and includes the Shift Manager’s office, the viewing gallery hallway, and the adjacent open work area. The TSC will accommodate personnel who will provide technical support to Operations and Control Room personnel during emergency conditions. Complete record keeping and communications capabilities have been installed. All necessary equipment, furnishings, and documents are stored in the immediate area and are readily available for use. The TSC may be activated for Unusual Events, and will be activated for Alert, Site Area Emergency, and General Emergency conditions.

Further details concerning staffing, equipment, furnishings, procedures, and activation are outlined in the Emergency Implementing Procedures.

Habitability of the Control Room and the TSC is assured by the filtered ventilation system that serves this area. In addition, Self-Contained Breathing Apparatus (SCBA) is provided for up to eight individuals. An area radiation monitor in the viewing gallery area reads out in the Control Room to provide external dose rate data. Air sampling and analysis equipment are provided in the emergency equipment kits to monitor airborne radioactivity levels. Personal radiation dosimetry issued to some site personnel and visitors will provide individual radiation dose assessment data. In the event that the Technical Support Center is not habitable, an alternate center may be established at the OSC, Mechanical Maintenance Shop, or other site buildings.
7.1.3 Operations Support Center (OSC)

The Operations Support Center (OSC) is located near the men’s locker room in the Service Building that is connected to the rest of the Plant by hallways.

The function of the OSC is to assemble and coordinate necessary personnel from Chemistry, Radiation Protection, Operations (NPOsNon-Certified Operators), I&C, Electrical, and Mechanical. These groups will be dispatched for specific jobs as directed by the TSC.

Additional details concerning staffing, equipment, furnishings, procedures, and activation are outlined in the Emergency Implementing Procedures.

Habitability of the OSC is verified using available emergency kit equipment. Equipment is provided for measuring external dose rates and airborne radioactive levels. The OSC ventilation system is independent of the Auxiliary Building system. This minimizes airborne contamination as a result of events in the Auxiliary Building. In the event the OSC should not be habitable, alternate locations such as the Mechanical Maintenance Shop or permanent construction buildings are available for use.

A maintenance kit containing only maintenance supplies is kept in the men's locker room.

7.2 EMERGENCY OPERATIONS FACILITY (EOF)

The Palisades Emergency Operations Facility (EOF) is located in downtown Benton Harbor, approximately 16 miles South Southwest from the Plant. The EOF assumes overall responsibility for Entergy Corporation emergency response. The EOF is designed to provide assistance in the decision-making process to protect the public health and safety, and to control radiological monitoring teams offsite. The EOF may be activated for the Unusual Event, and shall be fully activated for the Alert, Site Area Emergency, and General Emergency categories.

To assure the safety of the staff, equipment is provided for measuring external dose rates, and airborne radioactivity levels.

The staff is comprised of personnel from the Plant. In addition, liaison personnel from the county, state, and federal governments will also be present in the EOF.
The EOF has ready access to up-to-date Plant records, procedures, and emergency plans needed to exercise overall utility resources management and for recovery management. Hard copy records stored and maintained at the EOF include, but are not limited to:

- Palisades Technical Specifications
- Palisades Operating Procedures
- Palisades Final Safety Analysis Report
- Palisades Abnormal Operating Procedures
- Palisades Emergency Operating Procedures
- Palisades Site-Post-Shutdown Emergency Plan
- Palisades Emergency Implementing Procedures
- Michigan Emergency Management Plan
- Van Buren County Emergency Plan
- Berrien County Emergency Plan
- Allegan County Emergency Plan
- Palisades Piping and Instrument Diagrams

Other up-to-date records including radiological records, procedures, drawings, schematics, and diagrams are readily available via transmittal to the EOF.

The EOF shall provide analysis of field monitoring data, and coordination for the collection sample media.

7.3 COUNTY AND STATE EMERGENCY CENTERS

7.3.1 County Emergency Operations Centers

Potential emergencies could directly impact those individuals living within the 10-Mile Emergency Planning Zone, and indirectly affect property within the 50-Mile Emergency Planning Zone. Therefore, emergency planning efforts have been initiated by those affected counties within the 10-Mile Emergency Planning Zone. The affected counties are: Van Buren, Berrien, and Allegan Counties.

Each of these counties has established and maintains an Emergency Operations Center (EOC). These centers are located as follows:

a. Van Buren County Courthouse Annex
   Paw Paw, Michigan

b. Berrien County Sheriff's Department
   Benton Harbor, Michigan

c. Allegan Central Dispatch
   Allegan, Michigan
7.3.2 State Emergency Operations Center

When it is determined that personnel and resources of state government are needed to support disaster operations of affected local governments, the State Emergency Operations Center (SEOC) is staffed in Lansing. This facility is staffed at any level of emergency depending on potential for required state response.

The Michigan State Field Team Center location will be determined at the time of the incident by personnel at the State EOC. That facility is equipped with the necessary communications control capabilities (when staffed), from which the State will dispatch offsite-monitoring teams. All decision makers remain in Lansing.

7.4 JOINT INFORMATION CENTER (JIC)

A Joint Information Center (JIC) will be established at the combined EOF/JIC located at 330 W Main, Benton Harbor. The JIC will be staffed by public information representatives of the utility, state, county, and federal governments. The Plant Communications Specialist will be located in this facility upon its activation.

7.5 COMMUNICATIONS EQUIPMENT

The members of the emergency organizations require correct and up-to-date information relevant to the potential or real emergency condition. Therefore, the communications systems that will be used by the emergency organizations must meet the following basic criteria:

a. Provide for prompt initial notification.

b. Maintain reliability.

c. Provide for alternate methods of communications.

7.5.1 Routine Communications System

Communications equipment available for offsite use include:

a. Commercial telephones - separate outside lines.

b. Intracompany telephone system.

c. State Police Radio - through Security Department.

d. Emergency Network System telephone to NRC.
e. Commercial telephone to Van Buren County Sheriff's Department, Paw Paw.

f. Commercial telephone to State Police Operation Center, Lansing.

g. Power failure phones in major onsite response centers (Control Room, TSC, OSC).

h. Satellite phones in major onsite response centers (Control Room, TSC, OSC, EOF).

Table 7-1 summarizes communications resources.

7.6 ASSESSMENT EQUIPMENT SYSTEMS

7.6.1 Radiation Monitoring System

The Radiation Monitoring System measures, indicates, and records the presence and level of radiation, and alerts Plant personnel to abnormal levels of radioactivity, thereby contributing to personnel protection and proper operation of Plant equipment.

The system consists of permanently installed, continuous monitoring devices together with a program and provisions for specific sample collections and laboratory analyses. The system is designed to provide information for use in evaluating the radiological consequences of normal Plant operation, anticipated operational occurrences, and accidents. Control actions are initiated on the required systems when radiation levels exceed predetermined amounts.

These monitoring functions are performed by the following subsystems and programs:

a. Area Radiation Monitoring

b. Liquid Radiation Monitoring

c. Airborne Radiation Monitoring
   1. Gas
   2. Particulate
   3. Iodine
Data from these subsystems are displayed by readouts, annunciators, and recorders located in the Control Room. (Portable airborne and area monitors are capable of being plugged into receptacles throughout the Plant.) Instrumentation power for the Radiation Monitoring System will be supplied from a reliable source.

d. Area Radiation Monitors

Area radiation monitors are primarily for the purpose of measuring radiation dose rates for protection of Plant personnel and providing supporting data to the surveillance of Plant radiation levels.

Monitor alarm setpoints depend on the normal background radiation at the detector location and the calculated levels for abnormal conditions. The monitors will operate within the range of normal environmental conditions applicable to their locations.

Monitored points within the Plant are in areas where personnel exposure to radiation is most likely, and at appropriate access control boundaries. Readouts and alarms are provided both locally and in the Control Room.

e. Airborne Radiation Monitors

The radiation monitors located in the gaseous release paths monitor radioactivity with sufficient sensitivity to demonstrate compliance with 10 CFR 20 limits. They also provide sampling capability, ie, removable filters and/or gas sample stop valves. Samples analyzed with laboratory equipment permit evaluation of compliance to more restrictive regulations and provide data required.

f. Liquid Radiation Monitors

The monitoring systems consist of fixed detectors that display radiation levels in the Control Room.

Testing and maintenance features, such as remotely operated check sources, flushing connections, and cutoff valves are included for periodic system check and/or calibration. The liquid radiation monitors are designed to ensure that liquid effluent releases are maintained below the DAC values of 10 CFR 20 by the use of alarms and automatic shutoff features.
7.6.2 Meteorology

Onsite meteorological data is provided by a meteorological tower located in the northeast sector of the site. This system is primarily concerned with providing data for estimating the actual or potential effects of an accidental, airborne release of radioactivity.

The following data is available:

a. Wind direction and speed at 10 and 60 meters.

b. Stability class.

This data is transmitted to the Control Room at 15-minute averages. A remote interrogation capability is available. Details of the system as it applies to emergency offsite dose calculation are provided in Emergency Implementing Procedure EI-6.7, "Plant Site Meteorological System." Details on the system in general are provided in "Palisades Meteorological Monitoring Project Plan."

Backup meteorological data can be obtained through use of Emergency Implementing Procedure EI-6.8, "Backup and Supplemental Meteorology."

Severe weather warnings are provided to the Plant by a private consultant. Predictions of sky to ground lightening, tornados, and wind speeds in excess of 40 mph are reported to the Control Room.

7.6.3 Fire Protection System

The Fire Protection System, including monitoring devices and fire suppression equipment, is completely detailed in the Fire Protection Implementing Procedures.
7.7 OFFSITE MONITORING

7.7.1 Radiological Monitoring

Radiological Monitoring Teams shall be activated at the direction of the Shift Manager or OSC Manager. If the OSC has not been activated, notification should be made directly to the Radiation Protection Office. Monitoring teams should consist of two Radiation Protection members. The emergency vehicle shall provide transportation and be equipped with radio communications and equipment suitable for monitoring and/or sampling gaseous or liquid releases. The equipment and procedures supplied to the offsite team(s) provide the capability to sample for radioiodine in concentration as low as $10^{-7}$ micro-curies per cubic centimeter. Following staff augmentation, the estimated deployment time for a monitoring team is 30 minutes.

a. The Environmental Monitoring Program provides a number of TLDs and airborne particulate sampling stations that are valuable for long-term appraisal of integrated dose.

b. The Michigan Department of Environmental Quality provides offsite field monitoring capability within approximately three hours.

c. The State Police Emergency Management Division can request aerial and field monitoring through the Department of Energy.

7.7.2 Laboratory Facilities

The Plant laboratory and counting rooms have the capability to perform the analyses required under emergency conditions. The Michigan Department of Environmental Quality, Radiological Protection Section operates a radiological laboratory in Lansing.

Palisades Plant, and the DC Cook Nuclear Plant, may exchange services for radiological laboratory analyses, laboratory boron analyses, and backup dispersion meteorology information.

GEL Laboratory has agreed to provide the following services: collecting, analyzing, evaluating, and reporting on appropriate samples as needed for protective action information. GEL Laboratory maintains a laboratory in Charleston, South Carolina which has the capability to perform chemical and radiological analyses.
7.8 FIRST AID AND MEDICAL CARE

7.8.1 First Aid and Medical Care

At least one person having American Red Cross Multimedia First Aid or equivalent will be available onsite at all times.

Specialized training is given for the treatment and handling of contaminated personnel and injuries.

Emergency call lists for ambulance service and medical facilities are kept current in the Emergency Implementing Procedures.

7.8.2 First Aid Equipment

There are first aid kits in appropriate areas of the Plant. Accountability and inventory checks are performed quarterly and after use.

7.8.3 Decontamination and First Aid

Personnel decontamination facilities for emergency conditions include showers, sinks, cleaning agents, and first aid kits, which are maintained near the Radiation Protection access control area. These supplies include special materials and Personnel Decontamination Procedures. Additional personnel decontamination equipment and facilities shall be available for decontamination of evacuees.

7.8.4 Medical Transportation

Company vehicles maintained onsite and/or private vehicles can be used to transport injured and/or contaminated personnel for medical treatment. In addition, ambulances are available from the Covert and South Haven Fire Departments, depending on the severity of the situation.

7.8.5 Medical Treatment

South Haven Community Hospital and Lakeland Regional Medical Center/St Joseph, have agreed to accept contaminated, injured patients.
7.8.6 Use of Protective Equipment and Supplies

Listings by general category of typical emergency protective equipment and supplies that are stored and maintained for emergency purposes are contained in Appendix E of the Plan. Additional protective actions considered as measures for minimizing radiological exposure and contamination of Plant personnel include use of protective equipment and clothing as described below:

a. Individual Respiratory Protection

Respiratory protection devices will be issued when necessary to significantly reduce the internal exposure to radionuclides. Self-Contained Breathing Apparatus will also be used in emergencies involving smoke, gases, oxygen deficient atmospheres, or unknown conditions. Both Self-Contained Breathing Apparatus and air-purifying type full-face respirators are maintained in or near the Control Room, and a larger supply of this equipment is available at the Radiation Protection area in access control. Respiratory protection devices will be issued to survey teams, rescue teams, and other personnel required to be in areas of suspected or known high airborne radioactivity. A reserve breathing air supply that is of a rate sufficient to support Control Room personnel for an extended period of time is available. In addition to breathing apparatus, thyroid-blocking agents (i.e., potassium iodide) will be dispensed for onsite personnel in accordance with Emergency Implementing Procedures.
b. Protective Clothing

Supplies of this apparel include coveralls, rubber gloves, shoe covers and boots, caps and hoods, and plastic suits. Inventories are maintained for normal Plant use in access control and in the stockroom.

Additional supplies of protective clothing are in the emergency kits. This clothing will be issued to survey teams, rescue teams, and other personnel required to enter known or suspect areas of radioactive contamination. It will also be issued to persons required to work in or occupy contaminated areas. For emergency conditions, normal street clothing is considered as protective apparel, which is supplemented as necessary to protect skin surfaces, and which can be cleaned or discarded later. Protective clothing is distributed offsite only to members of those support agencies required to occupy contaminated areas for some purpose. In this event, Entergy Corporation will provide supplies to those people as available.

c. Breathing Air

A local supplier of compressed air is capable of providing emergency air cylinders on a 24-hour basis.
<table>
<thead>
<tr>
<th>Control Room</th>
<th>TSC</th>
<th>OSC</th>
<th>EOF</th>
<th>State EOC</th>
<th>Van Buren EOC</th>
<th>NRC</th>
<th>Offsite Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Room</td>
<td>1. Intp Phone 2. SP Phone</td>
<td>1. Intp Phone 2. Co Network</td>
<td>1. Intp Phone 2. Radio¹</td>
<td>1. Com Phone 2. Radio²</td>
<td>1. Com Phone 2. Radio²</td>
<td>1. ENS 2. Com Phone</td>
<td>NR</td>
</tr>
<tr>
<td>TSC</td>
<td>1. Intp Phone 2. SP Phone</td>
<td>1. Ded Circuit 2. Intp Phone</td>
<td>1. Intp Phone 2. Radio³</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>1. Radio³ 2. Com Phone</td>
</tr>
<tr>
<td>OSC</td>
<td>1. Intp Phone 2. Co Network</td>
<td>1. SP Phone 2. Intp Phone</td>
<td>1. Intp Phone 2. Radio³</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>1. Radio³ 2. Com Phone</td>
</tr>
<tr>
<td>NRC</td>
<td>1. ENS 2. Com Phone</td>
<td>1. ENS 2. Com Phone</td>
<td>NR</td>
<td>1. ENS 2. Com Phone</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>Offsite Teams</td>
<td>NR</td>
<td>NR</td>
<td>1. Radio³ 2. Com Phone</td>
<td>1. Radio³ 2. Com Phone</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

Radio - ¹Control Room/EOF (Located in Control Room)
- ²Plant Security Radio (in CAS & SAS/ Paw Paw State Police (backshifts & weekends))
- ³Radiation Protection Radio Network

ENS - Emergency Notification System
Intp Phone - Intraplant Telephone System
SP Phone - Sound Powered Phone
Ded Circuit - Dedicated Telephone Circuit (Digital/VOIP)

Com Phone - Commercial Telephone
Co Network - Palisades Telephone Network
LEIN - Michigan State Police Communication System
NR - Not Required
### TABLE 7-1
**PALISADES SEP COMMUNICATIONS MATRIX**

<table>
<thead>
<tr>
<th>BACKUP PHONE NUMBERS AND METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. State of Michigan</strong></td>
</tr>
<tr>
<td>a. 517-241-8000</td>
</tr>
<tr>
<td>b. 517-332-2521</td>
</tr>
<tr>
<td>c. Security Radio</td>
</tr>
<tr>
<td><strong>2. Van Buren County Sheriff</strong></td>
</tr>
<tr>
<td>a. 269-657-2058</td>
</tr>
<tr>
<td>b. 269-657-3101</td>
</tr>
<tr>
<td><strong>3. NRC</strong></td>
</tr>
<tr>
<td>a. 301-816-5100</td>
</tr>
<tr>
<td>b. 301-951-0550</td>
</tr>
<tr>
<td>c. 301-415-0550</td>
</tr>
</tbody>
</table>
8.0 MAINTAINING EMERGENCY PREPAREDNESS

Palisades Plant shall maintain the Site-Post-Shutdown Emergency Plan and the Palisades Nuclear Plant Emergency Implementing Procedures as two separate documents. It is intended that this Post-Shutdown Emergency Plan, although considered part of Palisades Nuclear Power Plant’s Final Safety Analysis Report (FSAR), be maintained as a separate document.

The Site Vice President is the individual with overall authority and responsibility for the Site Emergency Preparedness.

In order to meet the constantly changing conditions, methods have been implemented to ensure that the Site-Post-Shutdown Emergency Plan and Implementing Procedures remain effective over the life of the Plant. Efforts shall be made to assure continuous emergency preparedness and operational readiness among Entergy personnel and the offsite response agencies and organizations.

8.1 ORGANIZATION PREPAREDNESS

8.1.1 Training

Palisades Plant personnel, including non-permanent personnel, will receive training pertinent to the Site-Post-Shutdown Emergency Plan and Implementing Procedures. Persons assigned specific responsibilities during an emergency will receive additional training appropriate to their respective assignments. The responsibility for training is that of the Training Manager. He may delegate specialty-training responsibilities to personnel qualified to perform such training, for example, State or County training personnel. Governance of Emergency Response Organization Training for Entergy personnel is provided by Entergy Procedure P-EN-TQ-110, "Emergency Response Organization Training." This procedure describes the responsibilities for conducting and administering initial and continuing emergency preparedness training; provides clarification and details to implement a remediation process; and follows the guidance of P-EN-TQ-201,"Systematic Approach to Training Process," and P-EN-EP-308, "Emergency Planning Critiques."
8.1.2 Drills and Exercises

Members of the operating staff need to be familiar with their specific duties and responsibilities in the event of an accident at the Palisades Plant. To accomplish this, periodic drills and exercises will be conducted to test the state of emergency preparedness. The prime objective of the drills and exercise is to verify emergency preparedness of participating personnel, organizations, and agencies.

Each drill and exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their respective duties and responsibilities.

b. Verify the adequacy of the Palisades Plant Site Post-Shutdown Emergency Plan and the methods used in the Implementing Procedures.

c. Test communication networks and systems.

d. Check the adequacy of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

f. Designed to allow for freeplay for decision making.

Emergency Planning will ensure that drills and exercises are conducted as specified in this Plan.

Scheduled drills and exercises will be held involving appropriate offsite as well as onsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted to simulate actual emergency conditions. Drill scenarios will be prepared that involve participation of several emergency teams and will include specific parts of the onsite and offsite emergency organizations such as state, county, and federal organizations, and local services support personnel and organizations. Offsite emergency planning personnel will be given advance notice of the schedule date of the drill or exercise, although the actual details shall be kept confidential from Offsite Response Players. Official observers will be provided with materials in accordance with their requirements.
Recommendations for revisions to the Palisades Nuclear Power Plant Site Post-Shutdown Emergency Plan and/or Implementing Procedures and/or upgrading of emergency equipment and supplies as a result of a drill or exercise will be forwarded to Emergency Planning by observers and participants for inclusion in a formal critique. After review, recommendations will be forwarded to the Manager, Emergency Preparedness for comments. Recommended changes that are approved by the Regulatory and Performance Improvement Director will be incorporated into the Site Post-Shutdown Emergency Plan and Implementing Procedures. Records shall be maintained on drills and exercises conducted at the Palisades Plant.

8.1.3 Major Drills and Exercises will include the following:

a. Medical Drill

A Medical drill shall be conducted at least once per calendar year. The drill shall involve the participation of local medical support personnel and organizations (eg, physicians, ambulance services, hospital, etc). Scenarios may include cases of radiation overexposure, contaminated personnel and/or contaminated/injured personnel.

b. Fire Emergency Drill

Drills will be conducted in accordance with the Palisades Fire Plan which has been reviewed and approved by the NRC.

c. Radiological Monitoring Drills

A radiological monitoring drill (onsite and/or offsite) shall be conducted annually. This drill shall include the collection and analysis of various materials. These may include grass, water, soil, and air samples.

d. Health Physics Drills

Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples, and direct radiation measurements.
e. Radiological Emergency Preparedness Exercise

An exercise which tests the Emergency Preparedness Plan and organization shall be conducted at least once per calendar year. These exercises shall be varied such that plans and preparedness organizations are tested completely within an eight-year exercise cycle. Provisions should be made to start exercises between 6:00 PM and 4:00 AM once every eight-year exercise cycle, and to develop scenarios that reach Site Area and/or General Emergency levels every two years to assist the state and counties in maintaining their Emergency Preparedness requirements.

Annual exercises may involve the local, county, and state government emergency planning agencies depending on their past participation and schedule in accordance with federal regulations. Federal emergency response agencies shall be involved in a major exercise at least once every five years. Specific items tested are: public warning, adequacy of Emergency Implementing Procedures, communications, accident assessment, radiological monitoring, use of the Protective Action Guidelines, evacuation methodology, direction and control, public information, recovery and reentry operations, and emergency equipment.

Official observers from federal, state, or local governments will be encouraged to observe, evaluate, and critique the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the Plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation or report shall result from the critique. Deficiencies identified in this evaluation shall be assigned to appropriate Entergy staff.

f. Communication Tests

Communications shall be tested monthly with NRC headquarters from the Control Room, Technical Support Center and near-site Emergency Operations Facility. Communications shall be tested monthly with state and local governments within the plume exposure pathway of the Emergency Planning Zones. Communication shall be tested quarterly with those federal and state emergency response organizations within the ingestion pathway. Communication links with state emergency operations center and field assessment teams from the Plant shall be tested annually. Communication links with the county emergency operations centers shall be tested annually by calling the respective Sheriff's Department. Communications between the Control Room, Technical Support Center, and Emergency Operations Facility shall be tested annually.
8.1.4 Emergency Planning

Emergency Planning has been delegated responsibilities related to emergency planning that include, but are not limited to, the following:

a. Ensure offsite county, state, and supporting emergency plans are compatible with the Palisades Site-Post-Shutdown Emergency Plan.

b. Conduct offsite agency training.

c. Ensure that the information, data, and procedures detailed in the Palisades Nuclear Plant Emergency Implementing Procedures are consistent with the Palisades Site-Post-Shutdown Emergency Plan.

d. Ensure that the Emergency Plan Implementing Procedures are coordinated and interface properly with other procedures (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

e. Coordinate the onsite emergency planning drill and exercise activities.

f. Coordinate the onsite review and updating of the Palisades Site-Post-Shutdown Emergency Plan and Implementing Procedures.

g. Assist the Palisades Training Department, in coordinating and/or providing emergency planning related specialty training.

h. Ensure the maintenance and inventory of emergency equipment and supplies.

i. Be familiar with current changes in the federal regulations and guidance which impact emergency planning activities.

j. Document all corrective actions resulting from Plant-related Emergency Planning critiques and audits.

k. Initiate appropriate Plant-related corrective actions, if any, resulting from the critiques of each integrated practice drill conducted at the Plant.
8.2 EDUCATIONAL INFORMATION FOR THE PUBLIC

For resident and transient members of the public within the 10-Mile Emergency Planning Zone, Entergy Corporation, and the local and state governments will provide written information pertaining to topics associated with emergency planning. Information provided may include the following topics:

- Notification methods, time required for notification.
- Public initial actions.
- Educational information on radiation.
- Contact points and locations for additional information, including news media or local broadcast stations.
- Protective measures.
- Special needs of the handicapped.

This information can be disseminated to the public via varying methods. These methods may include direct mail of literature, information brochures contained in billing statements, telephone book inserts, and posting information documents in public areas.

At least annually, Entergy Corporation and the local and state governments will update the information, if necessary, for members of the public within the 10-Mile Emergency Planning Zone.

8.3 REVIEW AND UPDATING OF THE POST-SHUTDOWN EMERGENCY PLAN AND IMPLEMENTING PROCEDURES

The Palisades Plant Site Post-Shutdown Emergency Plan involves the coordination of Entergy personnel and offsite support agencies. To achieve and maintain the most efficient course of emergency actions, the Palisades Plant Post-Shutdown Site Emergency Plan and Implementing Procedures, including appended letters of agreement, will be reviewed on an annual basis and updated as needed. These reviews are conducted to comply with the Entergy procedures, federal regulations, and operation license provisions.
Proposed revisions to the Post-Shutdown Site Emergency Plan, Emergency Implementing Procedures and appended Letters of Agreement shall receive an effectiveness review in accordance with 10 CFR 50.54(q). If the change to the Post-Shutdown Site Emergency Plan reduces the effectiveness of the Plan, the Nuclear Regulatory Commission (NRC) shall review and approve the change prior to implementation. The proposed change shall be reviewed by the Management and Safety Review Committee (MSRC) prior to Plant Licensing submitting the proposed change to the NRC.

Proposed revisions to the Post-Shutdown Site Emergency Plan shall be reviewed and approved in accordance with the Entergy Procedure P-EN-OM-119, "On-Site Safety Review Committee."

When revisions to the Post-Shutdown Site Emergency Plan affect offsite support agencies, they shall be notified as the changes occur.

Editorial changes to the Post-Shutdown Site Emergency Plan or Emergency Implementing Procedures such as titles and telephone lists are not subject to the review process described above.

An independent review of the Emergency Preparedness Program shall be conducted in accordance with 10CFR50.54(t).

The review shall include the Post-Shutdown Site Emergency Plan, Emergency Implementing Procedures, training, drills and exercises, equipment, and interfaces with state and local governments. Records of the review shall be maintained for at least 5 years. Emergency Planning shall ensure state and local governments have access to appropriate findings.

As the Post-Shutdown Site Emergency Plan is reviewed, the emergency organization or procedures may be changed as a result of the following:

a. Drills may detect deficiencies and may indicate a more desirable organization or procedure.

b. Changes in key personnel involved in the organization or procedure.

c. Changes in the Plant's organizational structure.

d. Changes in the functions of supporting agencies, resulting from reorganization, personnel changes, and equipment requirements.

e. Changes in state or federal regulations.
f. Modifications to the Plant.

g. Recommendations received from other organizations, such as the state and federal agencies or other nuclear facilities.

8.4 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES

Emergency Planning is responsible for ensuring the quarterly inventory and/or seal inspection is completed for designated emergency supplies and equipment.

Designated emergency equipment and supplies and their storage locations will be listed in the Implementing Procedures. Equipment, supplies, and parts having shelf lives shall be checked and replaced as necessary. Operational readiness of emergency equipment and supplies can be assured by conducting surveillance testing, maintenance checks, calibration, or inventory of all supplies and conducting an annual review of the list of equipment important to Emergency Planning.

8.5 EMERGENCY EQUIPMENT NUCLEAR PERFORMANCE ASSESSMENT DEPARTMENT CONTROLS

8.5.1 Meteorological Monitoring Program

The Emergency Preparedness Section controls for the Palisades Plant Meteorological Monitoring Program are defined in Palisades Administrative Procedure 1.14, "Meteorological Monitoring Program."

8.5.2 Dose Assessment Computer Programs

The Dose Assessment Computer Programs are in accordance with Entergy Procedure P-EN-IT-103, "Nuclear Cyber Security Program."

9.0 RECOVERY

In any emergency, the immediate action is directed to limiting the consequences of the incident in a manner that will afford maximum protection of the Plant personnel and the public. Once the immediate corrective and protective actions have established an effective control over the incident situation, the emergency actions will shift into the recovery phase.

A recovery plan, from a practical standpoint, must be flexible enough to adapt to existing, rather than theoretical, conditions. It is not possible to anticipate in advance all of the conditions that may be encountered in an emergency situation; therefore, the Palisades Post-Shutdown Site Emergency Plan is addressed to general principles that will serve as a guide for developing a flexible plan of action.
In the period immediately following an incident, initial radiation monitoring functions will involve only gross hazard evaluations and isolation and definition of radiological problem areas. This immediate radiation surveillance activity is intended to provide the basic information for the second stage of reentry and recovery.

9.1 The following is a brief description of actions that will be examined as required prior to authorizing reentry by the emergency staff.

9.1.1 Review available radiation surveillance data. Determine Plant areas potentially affected by radiation and contamination.

9.1.2 Review radiation exposures of personnel to participate in recovery operations. Determine need for additional personnel.

9.1.3 Review adequacy of radiation survey instrumentation and equipment (type, ranges, number, calibration, etc).

9.1.4 Preplan survey team activities:
   a. Areas to be surveyed
   b. Anticipated radiation and contamination levels
   c. Radiation survey equipment required
   d. Shielding requirements and availability
   e. Protective clothing and equipment required
   f. Access control procedures (issuance of RWP)
   g. Exposure control limits and personnel dosimetry required
   h. Decontamination requirements
   i. Communications required

9.2 The initial reentry into the Plant areas should encompass the following (in order of priority):

9.2.1 Determine initial recovery operations.

9.2.2 Identify hazards or potential hazards associated with the recovery operations.
9.2.3 Conduct comprehensive radiation surveillance of Plant facilities and define radiological problem areas.

9.2.4 Isolate and post areas in the Plant with appropriate warning signs and rope barriers, as Radiation Areas, High Radiation Areas, and Contaminated Areas, as appropriate.

9.3 The nature and extent of the emergency situation will determine what recovery operations are required. The Recovery Organization described in Section 5 will be established as directed by the Recovery Manager.

9.3.1 In order for the recovery phase of the emergency to commence, the conditions which caused the incident must no longer exist. It is the responsibility of the EOF Emergency Director to determine that the facility and/or surroundings are safe.

9.3.2 The following criteria must be met before the recovery and reentry phase can begin:

   a. The Plant is in a controlled and stable condition,
   b. The release of radioactive materials to the environment is under control or has ceased.
   c. In-plant radiation levels are stable or decreasing.
   d. Fire, flood, etc, is under control or has ceased.
   e. At least one level of redundancy in plant systems should be available to prevent reinitiation of the event.
   f. Consensus has been reached among the SED, EOF Director, NRC, and the State.

9.4 The initial objectives of the recovery program are the determination of the damage to equipment, the installation of shielding, rope barriers and signs, the application of clearance tags, decontamination, and cleanup as required to place the Plant in an acceptable long-term condition. Other recovery operations will not be initiated until the area affected by the emergency has been defined. Particular attention will be directed toward isolating and tagging out components and systems as required to control or minimize hazards. A systematic investigation will be conducted to determine the equipment damaged and the extent of the damage.
9.5 Once the initial objectives are completed, a detailed investigation of the accident causes and consequences both to the Plant and to the environment will be conducted. Determination will be made as to the equipment repair work required as well as the need to modify Plant operating procedures. Repair work and approved modifications shall be carried out as authorized. Test programs to confirm fitness for return to service will be developed and executed.

9.6 Recovery operations will be conducted in compliance with normal operational radiation exposure levels as specified in 10 CFR 20. When possible, any necessary releases of radiation during recovery will be planned, controlled, evaluated in advance for radiological impact, and appropriate offsite organizations and agencies informed of the scheduled releases and estimated impact.

9.7 The State EOC will be advised when the Plant deems it safe to begin the reentry phase of the offsite recovery operation. If the Governor has ordered an evacuation, it is legally required for the Governor to officially rescind the order. The Michigan Department of Environmental Quality is responsible for coordinating reentry procedures for the offsite population.
FIGURE 9-1
LONG TERM RECOVERY ORGANIZATION

SITE VICE PRESIDENT

PLANT COMMUNICATIONS SPECIALIST

RECOVERY MANAGER

ADMINISTRATION AND LOGISTICS

PLANNING AND LOGISTICS

PLANT ENGINEERING

PLANT OPERATIONS

RADIATION PROTECTION

PLANT MAINTENANCE
AGREEMENTS WITH OFF-SITE INDIVIDUALS, AGENCIES, AND ORGANIZATIONS

Criteria for agreements with off-site individuals, agencies, and organizations.

Letters of agreement, contracts, or signature pages may be used to verify agreements made with offsite individuals, agencies, and organizations. The use of signature pages is appropriate for use with organizations or agencies where response functions are covered by laws, regulations, or executive orders.

Letters of agreement contain the following as appropriate:

1. Concepts of operations,
2. Emergency measures or services to be provided,
3. Mutually acceptable criteria for implementation,
4. Arrangements for exchange of information,
5. Authorities,
6. Responsibilities,
7. And Limits of actions.

Contracts or contract excerpts may be used in place of letters of agreement and should address the above criteria as appropriate.

As specified in Section 8 of this plan, letters of agreement, contracts, and signature pages will be reviewed annually. The following agreements will be reviewed annually and updated as needed.

1. Covert Fire Department
2. South Haven Area Emergency Services Authority
3. Lakeland Regional Medical Center
4. South Haven Community Hospital
5. Medic 1 Community Emergency Service
6. GEL Laboratories
7. Memo on Agreement with NSSS Vendor
8. Memo on Agreement with Nuclear Fuel Supplier
9. Reciprocal Laboratory Use Agreement
10. Institute of Nuclear Power Operations
11. Mutual Assistance Agreement
12. Hostile Action Memorandum of Understanding

All letters of agreement, contracts, and signature pages are kept with the master file for this appendix in Document Control.
The following basis for deleting Appendix B of the Palisades Site Emergency Plan was taken from the 12/17/86 memorandum by RA English and DL Pugere. This document is filed in Document Control under A200/22A06A01/LP.

I. A. The plots of calculated time/distance/dose contained in Appendix B were generated during the development of evacuation time estimates. They were placed in the Plan because it was thought that this information might be useful during an emergency. The plots are no longer needed because this information can be more quickly obtained through the Company’s new automated dose assessment program maintained on the IBM PC’s or the backup manual dose calculation procedures. In addition, the plots are only applicable for Maximum Hypothetical Accident Conditions where as the automated program or manual procedures provide results which are applicable for any accident scenario.

B. NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants, does not indicate that these plots have to be in the Plan.

C. The plots are not referenced in the Plan nor are they used in the Emergency Implementing Procedures.

II. A. The curves of dose rate versus time since reactor shutdown, based on the containment isolation monitors RIA-1805 thru RIA-1808 contained in Appendix B are typical of working level material and as such should not be in the Plan. NUREG-0654 does not require this type of material in the Plan.
POPULATION DISTRIBUTION AND EVACUATION TIME ESTIMATES

The contents of Appendix C have been relocated to a progeny procedure to the Post-Shutdown Site Emergency Plan. See PSEP Supp 2, "Evacuation Time Estimates," Revision 1, August 2012.
EMERGENCY IMPLEMENTING PROCEDURES

Palisades Site Specific Procedures

EI-1 Emergency Classification and Actions (SEP Section 4)

Upon recognition that abnormal Plant or site conditions exist, this procedure will be used in conjunction with SEP Sup 1 "SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts" to determine the appropriate Emergency Action Level(s) and to assure that all mandatory and subsequent actions are carried out.

EI-1.1 Emergency Response to Credible Security Threats (Canceled) (SEP Section 4)

This procedure provides guidance for declaring and responding to an Unusual Event or an Alert based on a credible security threat. (This procedure was canceled following the implementation of the NEI 99-01 Revision 4 EALs as this version of EALs incorporated the security threat EALs.)

EI-2.1 Emergency Plant Manager (Canceled) (SEP Section 5)

This procedure defines the responsibilities of the Emergency Plant Manager.

EI-2.2 Emergency Staff Augmentation (SEP Section 5)

This procedure establishes a method for augmenting onsite staffing under emergency conditions.

EI-3 Communications and Notifications (SEP Section 6)

This procedure details the notification format and provides call lists of offsite agencies. The primary and alternate communications lines are also described.

EI-4.1 Technical Support Center Activation (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the TSC.

EI-4.2 Operations Support Center Activation (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the OSC.

EI-4.3 Emergency Operations Facility Activation (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the EOF.
EMERGENCY IMPLEMENTING PROCEDURES

**EI-5.0** **Reentry** (SEP Section 9)

This procedure provides guidelines for entry into the affected area of the Plant after the emergency condition has been stabilized. It also provides guidelines for the initial recovery operation prior to the establishment of the Long-Term Recovery Organization.

**EI-5.1** **Recovery** (SEP Section 9)

This procedure describes the recovery phase of emergency response at Palisades, and provides guidelines for restoring the plant to its preemergency condition.

**EI-6** **Rapid Dose Calculation** (SEP Section 6)

This procedure provides a method to determine the appropriate steps required to calculate offsite dose and recommend offsite protective actions.

**EI-6.1** **Release Rate Determination from Stack Gas Monitors** (SEP Section 6)

This procedure provides a manual calculation of a release rate for radioactive effluents from the Plant stack.

**EI-6.2** **Release Rate Determination from Steam Line Monitors RIA-2323 and RIA-2324 for Steam Releases Through Atmospheric Dump Valves** (SEP Section 6)

This procedure provides a manual calculation of a release rate for radioactive effluents from the atmospheric dump valves.

**EI-6.3** **Release Rate Determination from High-Range Effluent Monitors** (SEP Section 6)

This procedure provides a release rate calculation for radioactive effluents from the Plant stack or steam dumps.

**EI-6.4** **Release/Potential Release Determination from Containment High-Range Monitors** (SEP Section 6)

This procedure provides a release/potential release rate from radioactive material released into containment.

**EI-6.6** **Gamma E-Bar Determinations** (SEP Section 6)

This procedure provides a Gamma E-Bar (Average Gamma Energy Per Disintegration) for input into offsite dose calculations.
**EMERGENCY IMPLEMENTING PROCEDURES**

**EI-6.7 Plant Site Meteorological System** (SEP Section 7)

This procedure provides a means to access the Plant site meteorological system for meteorological data required in the offsite dose calculations.

**EI-6.8 Backup and Supplemental Meteorology** (SEP Section 7)

This procedure provides a means to access the Weather Services International (WSI) meteorological system and obtain meteorological data required in the offsite dose calculations when onsite meteorological data is not available.

**EI-6.9 Automated Dose Assessment Program** (SEP Section 6)

This procedure provides basic instruction on how to initiate and operate the IBM PC Automated Dose Assessment Program "Offsite."

**EI-6.10 Offsite Dose Calculation - Straight Line Gaussian (Manual Method)** (SEP Section 6)

This procedure provides a manual backup to the automated dose assessment program to calculate whole body and thyroid dose rates.

**EI-6.13 Protective Action Recommendations for Offsite Population** (SEP Section 6)

This procedure provides guidelines for determining protection actions for the general public to be recommended to the appropriate state and local authorities in the event of a radiological emergency.

**EI-7.0 Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates** (SEP Section 6)

This procedure provides the decision process necessary to implement sampling under emergency conditions.

**EI-7.1 Emergency Sampling - PCS Liquid/Gas and Containment Air** (Canceled)

This procedure describes the sequential method of sampling the Primary Coolant System (PCS) and/or the containment atmosphere during a post-accident condition using the PASM panel. (This procedure was canceled following elimination of the PASM panel.)
EI-7.2 Emergency Post Accident Analysis (Canceled)

This procedure describes the sequential method of analyzing the PCS samples obtained during an accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.3 Hydrogen and Oxygen Gas Analysis of Post-Accident Samples (Canceled)

This procedure describes the steps necessary to determine the hydrogen concentration from a PCS gas sample collected at the PASM panel, as well as the hydrogen and oxygen concentration from containment atmospheric gas samples. (This procedure was canceled following elimination of the PASM panel.)

EI-7.4 Post Accident Gas and Liquid Activity Analysis (Canceled)

This procedure describes the steps necessary to analyze samples for gamma activity during a post-accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.5 Boron: Chloride Ion Chromatography Method Post Accident (Canceled)

This procedure describes the steps necessary to analyze and determine the boron concentration in a diluted PCS sample during a post-accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.8 pH: Hydrogen Specific Ion Electrode (Canceled 10/95)

This procedure describes the steps necessary to determine the pH of an undiluted PCS sample during a post-accident condition. (This procedure was canceled 10/95).

EI-7.10 Post Accident Sampling, Radioactive Gaseous Effluent Monitoring (SEP Section 6)

This procedure describes the steps necessary to obtain a post-accident sample of the stack effluent utilizing the radioactive gaseous effluent monitor.

EI-8 Onsite Radiological Monitoring (SEP Section 6)

This procedure provides guidelines for post-accident radiological monitoring on site.

EI-9 Offsite Radiological Monitoring (SEP Section 6)

This procedure provides guidelines for post-accident radiological monitoring off site.
EMERGENCY IMPLEMENTING PROCEDURES

EI-10 Accident Environmental Assessment (SEP Section 6)

This procedure provides guidelines for post-accident collection and replacement of accident TLDs, obtaining data from air monitoring stations, collection and assessment of waterborne effluents, and obtaining water/milk/vegetation samples.

EI-11 Determination of Extent of Core Damage (SEP Section 6)

This procedure provides a method of estimating the degree of core damage during accident conditions.

EI-11.2 Core Damage Assessment from Post Accident Sampling (Canceled)

This procedure provides a method of determining extent of core damage via gamma isotopic analysis at the PASM panel. (This procedure was canceled following elimination of the PASM panel.)

EI-12.1 Personnel Accountability and Assembly (SEP Section 6)

To provide guidelines and assign responsibility for personnel assembly and accountability.

EI-12.2 Assembly Area Personnel Lists (Canceled 10/95)

Provides updates for assembly area lists. (This procedure was canceled 10/95).

EI-12.3 Search and Rescue Team Responsibilities (SEP Section 6)

Provides guidelines for search and rescue teams during an emergency.

EI-13 Evacuation/Reassembly (SEP Section 6)

This procedure provides site evacuation procedures and the subsequent reassembly of personnel.

EI-14 Medical Care/Treatment of Contaminated, Injured Personnel (SEP Section 6)

This procedure provides guidelines on personnel emergency radiation exposure limits, personnel decontamination procedures, the use of thyroid blocking agents, and the methods of transporting contaminated/injured victims to hospitals.
**EMERGENCY IMPLEMENTING PROCEDURES**

**EI-15.1 Drills and Exercises** (Cancelled)

This procedure details the requirements for drills and exercises which test the efficiency of the Site Emergency Plan. (This procedure was canceled following the implementation of Entergy Procedure EN-EP-306, Drills and Exercises.)

**EI-15.2 Communications Tests** (SEP Section 8)

This procedure establishes requirements for testing the emergency communications systems.

**EI-15.3 Post Accident Sample Monitoring System Operator Training** (Canceled)

This procedure provides training guidelines for the post-accident sample panel. (This procedure was canceled following elimination of the PASM panel.)

**EI-16.1 Maintenance of Emergency Equipment** (SEP Section 7)

This procedure establishes a method for the regular inventory and testing of emergency equipment and supplies.

**EI-16.2 Post Accident Sample Monitoring System Supplies and Associated Equipment Checks** (Canceled)

This procedure establishes a method for the regular inventory and operability checks of the Post Accident Sample Monitoring Panel supply cabinets and associated equipment. (This procedure was canceled following elimination of the PASM panel.)

**EI-17 Compensating Measures For OOS EAL Equipment And Listing Of Non-EAL Equipment Important For Emergency Preparedness**

This procedure lists equipment important to Emergency Preparedness. It provides time restrictions for the length of time the equipment may be out of service.

**Entergy Additional Procedures**

**P-EN-EP-306 Drills and Exercises**

This procedure establishes a process to standardize fleet drill and exercise programs and provides guidance for the planning, preparation, scheduling, conduct, evaluation, and documentation of Emergency Planning drills and exercises.
EMERGENCY IMPLEMENTING PROCEDURES

P-EN-EP-307  Hostile Action Based Drills and Exercises

This procedure establishes a process to standardize the fleet hostile action based drill program and processes; provides guidance for the preparation and conduct of integrated Emergency Planning (EP) and Security exercises using hostile action based scenarios; and, provides guidance for the preparation and conduct of a pre-exercise hostile action-based tabletop.

P-EN-EP-308  Emergency Planning Critiques

This procedure establishes a process to standardize fleet drill and exercise critiques, and describes the means for tracking and correcting deficiencies identified in drills.


This procedure provides guidance to maintain the ERO notification system in a state of readiness.

P-EN-EP-311  Emergency Response Data System (ERDS) Activation via the Virtual Private Network (VPN)

This procedure provides for a secure network communications connection supporting the transmission of station parameters to the Nuclear Regulatory Commission (NRC) in the event of a declared emergency; and provides instructions for verification of connections for those plants which maintain 24/7 connectivity.

P-EN-EP-313  Offsite Dose Assessment using the Unified RASCAL Interface

This procedure provides the methods and instructions for performing offsite dose assessment using the Unified RASCAL Interface (URI).


This procedure provides guidance to activate and operate the EOF focusing on classification, notification, dose assessment and protective action recommendations.

P-EN-EP-610  Technical Support Center (TSC) Operations

This procedure provides guidance to activate and operate the TSC; and, contains guidelines regarding personnel emergency radiation exposure limits and issuance of thyroid blocking agents.
EMERGENCY IMPLEMENTING PROCEDURES

P-EN-EP-611  Operations Support Center (OSC) Operations

This procedure provides guidance to activate and operate the OSC.

P-EN-EP-801  Emergency Response Organization

This procedure outlines expectations and responsibilities for Emergency Response Organization (ERO) members, Site Management and the Emergency Planning staff; and, outlines responsibilities for personnel assigned to an ERO position and for other company personnel who may be called upon to support an emergency response effort, but are not directly assigned to an ERO position.

P-EN-TQ-110  Emergency Response Organization Training

This procedure establishes the training and qualification requirements for personnel assigned to the Emergency Response Organization (ERO); and establishes the training offered to off-site emergency response organizations.

P-EN-TQ-110-01  Fleet EPlan Training Course Summary

This procedure lists the Fleet-specific curricula and learning items required for each of the standard Emergency Response Organization (ERO) positions specified in P-EN-EP-801, Emergency Response Organization.
GENERAL EQUIPMENT IN EMERGENCY KITS

Emergency kits will be maintained and inspected at least quarterly and readily accessible. Kits are typically maintained in the following locations: Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF), Emergency Vehicles, Health Physics Office and support hospitals. Specific kit locations are specified in the Emergency Implementing Procedures. Specific equipment inventories are contained in the Emergency Implementing Procedures.

Emergency kits consist of the following generic equipment classifications:

a. Monitoring instrumentation and equipment including: dose rate and count rate meters, air sampling equipment, personnel dosimetry equipment.

b. Protective equipment including: protective clothing, respiratory equipment, thyroid blocking agent.

c. Communications equipment including: radios, telephones, microphones.

d. Reference material including: Emergency plans and procedures, maps, equipment lists, spare forms.

e. Miscellaneous equipment including: survey, posting and boundary equipment, plastic bags, flashlights, office supplies, decontamination equipment.

f. Maintenance equipment.

g. Medical Emergency equipment including: monitoring instrumentation and equipment, protective equipment, survey, posting and boundary equipment, decontamination and first aid supplies.

h. Medical Emergency First Aid equipment including: Medical First Aid supplies for use in responding to contaminated or noncontaminated injuries.
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Attachment 4

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

Proposed Revision to the Palisades Nuclear Plant Site Emergency Plan (clean)

(129 Pages)
PALISADES NUCLEAR PLANT
POST-SHUTDOWN EMERGENCY PLAN

TITLE: SITE EMERGENCY PLAN

Approved: / Procedure Sponsor

Process Applicability Exclusion □

Revision TBD

FULL REVISION TO ADDRESS IMPLEMENTATION OF THE POST-SHUTDOWN EMERGENCY PLAN
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Appendix I, "NUREG-0654 Cross Reference"
PSEP Supp 1, "POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts"
(Note: PSEP Supp 1 is under separate cover with its own revision number.)
PSEP Supp 2, "Evacuation Time Estimates," Revision 1, August 2012 (Note: PSEP Supp 2 will be maintained in the same binder as the Post-Shutdown Emergency Plan with its own revision number.)
SOURCES AND REFERENCES

SOURCE DOCUMENTS


2. Title 10 of the Code of Federal Regulations, Part 50

3. P-EN-HU-106, "Procedure and Work Instruction Use and Adherence"

4. NUREG-0737 Supplement 1, "Clarification of TMI Action Plan Requirements"

5. Palisades Administrative Procedure 4.00, "Operations Organization, Responsibilities, and Conduct"

6. Abnormal Operating Procedure AOP-23, "Primary Coolant Leak"

7. Abnormal Operating Procedure AOP-24, "Steam Generator Tube Leak"

8. NEI 99-01 Revision 5, "Methodology for Development of Emergency Action Levels"


10. Engineering Analysis, EA-JBB-01-04, "Failed Fuel Dose Rates on NSSS Piping"


REFERENCE DOCUMENTS

1. Regulatory Guide 1.70, Revision 2, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants"

2. Palisades Nuclear Plant Emergency Implementing Procedures

3. 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities"

4. 10 CFR 100, "Reactor Site Criteria"

5. Palisades Final Safety Analysis Report

7. Palisades Safeguards Contingency Procedures
8. Palisades Health Physics Procedures
9. Palisades Abnormal Operating Procedures
10. Palisades Emergency Operating Procedures
11. Palisades Nuclear Plant Public Information Policies and Procedures
12. Palisades Fire Protection Plan
14. Palisades Administrative Procedure 4.00, "Operations Organization, Responsibilities and Conduct"
15. P-EN-OM-119, "On-Site Safety Review Committee"
16. Emergency Implementing Procedure EI-1, "Emergency Classification and Actions"
17. Emergency Implementing Procedure EI-2.2, "Emergency Staff Augmentation"
18. Emergency Implementing Procedure EI-3, "Communications and Notifications"
22. Emergency Implementing Procedure EI-5.0, "Reentry"
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24. Emergency Implementing Procedure EI-6, "Rapid Dose Calculation"
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26. Emergency Implementing Procedure EI-6.2, "Release Rate Determination from Steam Line Monitors RIA-2323 and RIA-2324 for Steam Releases through Atmospheric Dump Valves"

27. Emergency Implementing Procedure EI-6.3, "Release Rate Determination from High-Range Effluent Monitors"


29. Emergency Implementing Procedure EI-6.6, "Gamma E-Bar Determinations"

30. Emergency Implementing Procedure EI-6.7, "Plant Site Meterological System"

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32. Emergency Implementing Procedure EI-6.9, "Automated Dose Assessment Program"


35. Emergency Implementing Procedure EI-7.0, "Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates"


37. Emergency Implementing Procedure EI-8, "Onsite Radiological Monitoring"

38. Emergency Implementing Procedure EI-9, "Offsite Radiological Monitoring"

39. Emergency Implementing Procedure EI-10, "Accident Environmental Assessment"

40. Emergency Implementing Procedure EI-11, "Determination of Extent of Core Damage"

41. Emergency Implementing Procedure EI-12.1, "Personnel Accountability and Assembly"

42. Emergency Implementing Procedure EI-12.3, "Search and Rescue Team Responsibilities"

43. Emergency Implementing Procedure EI-13, "Evacuation/Reassembly"
44. Emergency Implementing Procedure EI-14, "Medical Care/Treatment of Contaminated, Injured Personnel"

45. Emergency Implementing Procedure EI-15.2, "Communications Tests"

46. Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment"

47. Emergency Implementing Procedure EI-17, "Compensating Measures for OOS EAL Equipment and Listing of Non-EAL Equipment Important for Emergency Preparedness"

48. 10 CFR 20, "Standards for Protection Against Radiation"

49. Oil and Hazardous Materials Spill Prevention Plan

50. Palisades Technical Specifications


53. Michigan Emergency Management Plan

54. Van Buren County Emergency Plan

55. Allegan County Emergency Plan

56. Berrien County Emergency Plan

57. Palisades Administrative Procedure 1.14, "Meteorological Monitoring Program"

58. P-EN-IT-103, "Nuclear Cyber Security Program"

59. NEI 99-01 Revisions 5, "Methodology for Development of Emergency Action Levels"


61. NEI White Paper dated November 18th, 2005, "Enhancements to Emergency Preparedness Programs for Hostile Action" (Endorsed by NRC RIS 2006-12)

62. POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - "EAL Wall Charts" (Note: PSEP Supp 1 is under separate cover with its own revision number.)
63. POST-SHUTDOWN EMERGENCY PLAN Supplement 2 - "Evacuation Time Estimates" (Revision 1, August 2012) (Note: PSEP Supp 2 will be maintained in the same binder as the Site Emergency Plan.)

64. Engineering Analysis, EA-JBB-01-04, "Failed Fuel Dose Rates on NSSS Piping"

65. P-EN-TQ-110, "Emergency Response Organization Training"


68. P-EN-EP-306, "Drills and Exercises"

69. Palisades Nuclear Plant Analysis of Proposed Post-Shutdown On-Shift Staffing, Revision 0 dated August, 2017 conducted as required by 10CFR50, Appendix E, Section IV.A
1.0 INTRODUCTION

The purpose of the Palisades Post-Shutdown Emergency Plan (PSEP) is to aid in protecting members of the general public, persons temporarily visiting the site, and site employees.


Detailed procedures concerning the implementation of the Post-Shutdown Emergency Plan are not included here, but are included in the Palisades Nuclear Plant Emergency Implementing Procedures. These procedures describe the duties and actions of individuals and groups in the event of an emergency and also serve as an interface of the Post-Shutdown Emergency Plan with Plant operations, security, and radiological controls procedures. Selected elements of the Quality Program are applied to the Post-Shutdown Emergency Planning Function for the Palisades Plant.

1.1 DEFINITIONS

1.1.1 Accident

Any unexpected or unintentional event resulting in radiological exposure, contamination, or physical injury to individuals requiring offsite medical treatment, and/or physical damage to safety-related components.

1.1.2 Activation

Actions taken to staff and setup an emergency response facility to make it operational. Actions include, but are not limited to, notification of emergency personnel, equipment setup, and equipment operability testing.
1.1.3 Affected Persons

Individuals who have been radiologically exposed or physically injured as a result of an accident to a degree requiring special attention, e.g., decontamination, first aid, or medical services.

1.1.4 Alarm

An indication of abnormal Plant conditions and/or equipment status.

1.1.5 Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.1.6 Annunciation

An alarm or indication of normal or abnormal conditions.

1.1.7 Assessment Actions

Those actions taken during or after an accident to provide data to make decisions.

1.1.8 Command and Control

Resides with the Shift Manager or EOF Emergency Director following assumption of overall authority for Entergy Corporation emergency response. At minimum, this individual will assume responsibility for event classification, dose assessment, protective action recommendations, and notification of offsite authorities.

1.1.9 Control Room

The location at Palisades Plant from which systems are controlled. The assembly area for Control Room personnel.

1.1.10 Control Room Personnel

The credited on shift complement consists of a Shift Manager (qualified as a Certified Fuel Handler (CFH)) and two (2) Non-Certified Operators.
1.1.11 Corrective Actions

Those emergency measures taken to lessen or terminate an emergency situation at, or near, the source of the problem.

1.1.12 Decontamination

The removal of radioactive material from individuals, equipment, surfaces, foodstuffs, etc.

1.1.13 Emergency

Any occurrence at the Palisades Nuclear Power Plant that may result in undue risk to the health and safety of the onsite personnel or the public.

1.1.14 Emergency Action Levels (EAL)

A predetermined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

There are times when an EAL will be a threshold point on a measurable continuous function, such as a primary system coolant leak that has exceeded technical specifications.

At other times, the EAL lists a discrete event that places the plant in a particular emergency class.

1.1.15 Emergency Operations Facility (EOF)

An offsite emergency center from which the offsite emergency support actions of Entergy Corporation are controlled and coordinated with state, local, and federal authorities to mitigate the consequences of an emergency.

1.1.16 Emergency Implementing Procedures

Specific procedures providing specific actions to implement the Post-Shutdown Emergency Plan in order to mitigate or terminate an emergency situation.
1.1.17 Emergency Planning Zones (EPZ)

Two zones that encircle the Palisades Plant. The primary EPZ plume exposure pathway, with a radius of 10 miles, has been established to prevent excessive airborne exposure, and the secondary EPZ, ingestion exposure pathway, with a radius of 50 miles, has been established to prevent excessive ingestion of contaminated food. Within these two zones, protective actions are described for the protection of the public.

1.1.18 Fitness For Duty

Provide reasonable assurance that personnel who maintain unescorted access will perform their tasks in a reliable and trustworthy manner and are not under the influence of any substance, legal or illegal, or mentally or physically impaired from any cause, which in any way adversely affects their ability to safely and competently perform their duties.

1.1.19 Fully Operational

Status of an Emergency Response Facility following assumption of all responsibilities.

1.1.20 General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

1.1.21 Hostile Action

An act toward an NPP or its personnel that includes the use of violent force to destroy equipment, takes hostages, and/or intimidates the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the NPP. Nonterrorism-based EALs should be used to address such activities (eg, violent acts between individuals in the owner controlled area).
1.1.22 Hostile Force

One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

1.1.23 Ingestion Exposure Pathway

The path affected by fallout from a radioactive plume. Of major concern is the contamination of food and water within the emergency planning zones.

1.1.24 Initiating Condition (IC): One of a predetermined subset of nuclear power plant conditions when either the potential exists for a radiological emergency, or such an emergency has occurred.

- An IC is an emergency condition, which sets it apart from the broad class of conditions that may or may not have the potential to escalate into a radiological emergency.

- It can be a continuous, measurable function that is outside technical specifications, such as elevated PCS temperature or falling reactor coolant level (a symptom).

1.1.25 Offsite

All land and water areas outside the owner-controlled area.

1.1.26 Onsite

All land and water areas within the owner-controlled area, use of which must be authorized by Entergy Corporation.

1.1.27 Operational

Status of an emergency facility, declared by the appropriate facility manager upon determining that the facility is adequately staffed and equipment is setup and available to assume/perform the emergency functions assigned to that facility.
1.1.28 **Operations Support Center (OSC)**

The onsite area in which onsite support personnel can assemble for subsequent assignment to duties in support of emergency operations. Support personnel assigned to the OSC normally consist of Chemistry, Radiation Protection, and repairpersons from I&C, Electrical, and Mechanical Maintenance.

1.1.29 **Owner Controlled Area**

The area surrounding the Plant in which the reactor licensee has the authority to determine all activities including exclusion or removal of persons and property from the area during accident conditions.

1.1.30 **Plume Exposure Pathway**

The path by which a radioactive cloud (plume) can expose the population-at-risk and/or onsite personnel to radiation. The principle exposure sources for this pathway are:

a. Whole body external exposure to gamma radiation from the radioactive plume and from deposited material.

b. Inhalation exposure from the passing radioactive plume.

1.1.31 **Population at Risk**

Those persons for whom protective actions are or would be taken.

1.1.32 **Protective Actions**

Those emergency measures taken for the purpose of preventing or minimizing radiological exposures to individuals that would be likely to occur if the actions were not taken.

1.1.33 **Protective Action Guides (PAG)**

Projected radiological dose or dose commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action.
<table>
<thead>
<tr>
<th>Section</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.34</td>
<td>Protected Area</td>
</tr>
<tr>
<td></td>
<td>The fenced area immediately surrounding the nuclear Plant, access to which is controlled in accordance with the Safeguards Contingency Procedures.</td>
</tr>
<tr>
<td>1.1.35</td>
<td>Radiological Emergency</td>
</tr>
<tr>
<td></td>
<td>An emergency involving radioactive material.</td>
</tr>
<tr>
<td>1.1.36</td>
<td>Recovery Actions</td>
</tr>
<tr>
<td></td>
<td>Those actions taken after the emergency to restore the Plant as nearly as possible to its pre-emergency condition.</td>
</tr>
<tr>
<td>1.1.37</td>
<td>Site Area Emergency</td>
</tr>
<tr>
<td></td>
<td>Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.</td>
</tr>
<tr>
<td>1.1.38</td>
<td>Emergency Plant Manager</td>
</tr>
<tr>
<td></td>
<td>The person designated as responsible for all onsite actions during an emergency condition.</td>
</tr>
<tr>
<td>1.1.39</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>The State of Michigan.</td>
</tr>
<tr>
<td>1.1.40</td>
<td>Technical Support Center (TSC)</td>
</tr>
<tr>
<td></td>
<td>An area which accommodates personnel which will provide management and technical support to Plant Operations personnel during emergency conditions from a location outside the Control Room.</td>
</tr>
</tbody>
</table>
1.1.41 Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

2.0 SCOPE AND APPLICABILITY

2.1 GENERAL INFORMATION AND SITE DESCRIPTION

The Palisades Nuclear Power Plant is owned by Entergy Corporation. An area map showing the location of the facility is provided in Figure 2-1.

The Palisades Nuclear Power Plant (PNP) ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). On January 4, 2017, Entergy Nuclear Operations (ENO) submitted a certification of permanent cessation of power operations pursuant to 10 CFR 50.82(a)(1)(i). ENO has submitted written certification to the NRC in accordance with 10 CFR 50.82(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9) certifying that fuel has been permanently removed from the reactor vessel. Upon docketing of these certifications, the 10 CFR Part 50 license for PNP no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

With irradiated fuel being stored in the Spent Fuel Pool and the Independent Spent Fuel Storage Installation (ISFSI), the reactor coolant system and secondary systems have no function related to the storage of the irradiated fuel. Therefore, the postulated accidents involving failure or malfunction of the reactor and reactor coolant system or secondary systems are no longer applicable.

The Palisades Plant is located in Covert Township, Van Buren County, Michigan. The Plant is bordered to the north by the Van Buren State Park and to the west by Lake Michigan. The south and east are sparsely populated, underdeveloped, or used for farming. Interstate 196 and the Blue Star Highway lie within one mile east of the site. Much of the area around the site is devoted to recreation and tourism, which produces a fluctuating and seasonal population.

Highway access to the Plant is provided from the Blue Star Highway (A-2) via the Plant access road.

2.2 POPULATION DISTRIBUTION AND EVACUATION TIMES
The area within a 10-mile radius surrounding the Palisades Plant is designated as the plume exposure Emergency Planning Zone (EPZ). A comprehensive population study was prepared in August 2012 by KLD Engineering. The Evacuation Time Estimates for the plume EPZ are adopted as a progeny procedure to Palisades Post-Shutdown Emergency Plan. See PSEP Supp 2, "Evacuation Time Estimates."

### 2.3 EMERGENCY PLANNING ZONES

EPZs are areas designated for which planning is recommended to assure that prompt and effective actions are taken to protect the public in the event of an accident.

Two EPZs have been identified for the purpose of development and implementation of emergency planning. The plume exposure emergency planning zone has a 10 mile radius. Within this zone, shelter and/or evacuation is the immediate protective action to be recommended for the general public. The principal concern with the plume exposure pathway is that of Total Effective Dose Equivalent (TEDE) exposure and/or exposure to the adult thyroid Committed Dose Equivalent (CDE) due to inhalation and ingestion.

The ingestion exposure EPZ extends to a 50-mile radius. Once exceeding the 10-mile radius, the plume exposure pathway is no longer of significant concern. At this point, the ingestion pathway is of greatest concern.

### 2.4 PURPOSES AND OBJECTIVES

Effective emergency preparedness needs to incorporate not only the emergency response for systems, but must also include response for people. Engineering safety systems at the Plant are designed to ensure that the consequences of a major malfunction will be mitigated prior to any adverse effect to the general public or facility. The basis for emergency planning is to provide human emergency response in much the same way as safety systems do for design.

It is imperative that all plans, programs, and procedures be well coordinated with the Emergency Plan. Only when they are well coordinated can the response to emergencies be initiated in a timely and effective manner.
2.4.1 Regulatory Requirements

10 CFR 50, "Domestic Licensing Of Production and Utilization Facilities" Section 50.34, "Contents of Applications; Technical Information", requires that each application for a license to operate a facility include in a Final Safety Analysis Report (FSAR), along with other information, the applicant's plans for coping with emergencies, including the items specified in Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," 10 CFR 50. Section 100.3, 10 CFR 100, "Reactor Site Criteria," in the definitions of exclusion area and low population zone, establishes additional criteria for plans to cope with emergencies and serious accidents. 10 CFR 50.47, "Emergency Plans," requires that adequate protective measures can and will be taken in the event of a radiological emergency.

Supplemental guidance has been provided by the Nuclear Regulatory Commission (NRC) by the following documents:


These documents describe methods acceptable to the NRC staff for compliance with the Commission's regulations in regard to the content of emergency plans for nuclear power plants including provisions for the periodic review and revision of the Emergency Plans.

2.4.2 Purpose of Emergency Preparedness

The purpose of emergency preparedness is to provide a mechanism that would be used in making decisions in the event of an emergency, and to assure that the necessary equipment, supplies, and essential services are available to protect the health and safety of the public.

2.4.3 Objectives of the Palisades Post-Shutdown Emergency Plan

The objectives of the Post-Shutdown Emergency Plan are to:

a. Establish criteria for classifying emergencies, performing notifications, activating emergency facilities, and activating portions of the emergency organization.
b. Establish an emergency organization and assign responsibilities in the emergency organization for classifying emergencies, performing notifications, performing onsite protective actions, performing dose assessments, and making recommendations to offsite authorities.

c. Identify the support that will be provided to the onsite emergency organization by the Entergy Corporation headquarters and offsite organizations (ie, fire, ambulance, medical).

d. Identify the offsite authorities that are responsible for taking protective actions on behalf of members of the general public or that interface with this Emergency Plan.

e. Identify emergency facilities and available communication systems to be used by the emergency organization.

f. Identify training for personnel in the emergency organization.

g. Provide for drills and exercises of the emergency organization.

h. Provide for periodic review and update of the plan.

2.5 SUMMARY OF EMERGENCY PLAN INTERRELATIONSHIPS

This Emergency Plan should not, in itself, be considered the sole working document to be used during an emergency. The purpose of the Emergency Plan is to classify emergencies according to their severity, to assign responsibilities for actions, and to clearly outline the most effective course of action required to safeguard the public and Plant personnel in the event of an emergency. Detailed instructions and guidelines for emergency actions are included in other plans, programs, and procedures as described below.

2.5.1 Post-Shutdown Emergency Plan Supplement 1

The "Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts" contains the Palisades Emergency Action Levels in a wall chart format. It is part of the Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP's revision number.

The "Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts" will be maintained in the same binder as the Post-Shutdown Emergency Plan.
2.5.2 Post-Shutdown Emergency Plan Supplement 2

The Post-Shutdown Emergency Plan Supplement 2 - "Evacuation Time Estimates (Revision 1, August 2012)" contains the Palisades updated Evacuation Time Estimates study (Revision 1, August 2012). It is part of the Post-Shutdown Emergency Plan. Changes to the supplement require all the same types of reviews and approvals as required for the Post-Shutdown Emergency Plan. Revisions to the supplement will be tracked by its own revision number, not the PSEP’s revision number.

The Post-Shutdown Emergency Plan Supplement 2 - "Evacuation Time Estimates" will be maintained in the same binder as the Post-Shutdown Emergency Plan.

2.5.3 Emergency Implementing Procedures

Detailed Emergency Implementing Procedures required to implement the plan have been developed. An index of the Emergency Implementing Procedures is included in Appendix D.

Detailed implementing procedures for emergencies considered to be special events, such as civil disturbances, bomb threats, and breaches in security are included as part of the Safeguards Contingency Procedures.

Separate emergency procedures are not provided for activities already covered by Plant or section Operating Procedures (ie, calibration of survey instruments). The plan relies on certain aspects of the Plant’s operating procedures, radiation protection procedures, and security procedures, where they are required for clarification.

2.5.4 Related Plans, Programs, and Procedures

Several plans, programs, and procedures have been developed to assure the safe operation of the Plant. The Post-Shutdown Emergency Plan and Emergency Implementing Procedures have been written to coordinate these plans with other programs and procedures. During emergency situations, the coordination and utilization of all plans and procedures are essential.

The Safeguards Contingency Procedures have been coordinated with the Post-Shutdown Emergency Plan and Emergency Implementing Procedures to minimize the consequences of an emergency situation. Security procedures contain an explanation of the duties and responsibilities for security personnel in the event of an emergency.
Provisions for radiological control at the Plant have been covered in Radiation Protection Procedures. These procedures establish controls and protective measures to be placed on work being conducted in radiation areas. Inclusive within the area of radiation control are the procedures that Radiation Protection establishes for determining exposure through surveys, analysis, and various other avenues.

The Palisades Nuclear Plant Public Information Policies and Procedures contain the information necessary to establish a flow of emergency information to the public.

The Palisades Fire Protection Plan has been developed to assure the safe operation of the Plant during a fire.
FIGURE 2-2
PALISADES FACILITIES
FIGURE 2-3
PALISADES NUCLEAR PLANT SITE
3.0 POST-SHUTDOWN EMERGENCY PLAN SUMMARY

The Post-Shutdown Emergency Plan establishes the basic steps that will be used to determine the response of the emergency organization for each of four emergency classes. The emergency classes are as follows: Unusual Event, Alert, Site Area Emergency, and General Emergency. The conditions that must exist for the declaration of a specific emergency class are presented in the Post-Shutdown Emergency Plan, Supplement 1 - EAL Wall Charts.

The declaration of each class will lead to specific notification of offsite authorities. Emergency facilities shall be activated as described in Table 3-1, "Emergency Classifications and the Level of Response by Participating Groups," and staffed as presented in Section 5 of the Palisades Post-Shutdown Emergency Plan. In response to a particular event, certain protective actions may be initiated or certain offsite agencies may be activated. These actions are detailed in Section 6 of the Palisades Post-Shutdown Emergency Plan. Palisades maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and promptly declares the emergency condition as soon as possible following identification of the appropriate emergency classification level.

For emergencies that result in (1) the release of radioactive materials greater than specified levels, or (2) the degradation of barriers to the release of radioactive materials, assessments of the offsite consequences or the projected offsite consequences shall be made. These assessments will be transmitted to the offsite authorities responsible for taking protective actions on behalf of the general public. Recommendations to these offsite authorities will be based on the protective actions identified in Table 6-2 from the Palisades Post-Shutdown Emergency Plan.

3.1 POST-SHUTDOWN EMERGENCY PLAN STEPS

In general, the Post-shutdown Emergency Plan encompasses the following basic steps:

a. Detection of the emergency
b. Classification of the emergency
c. Notification of offsite agencies
d. Activation of the responding organization(s)
e. Assessment of the situation
f. Initiation of protective actions
g. Initiation of corrective actions
h. Aid to affected persons
i. Reentry and recovery
3.2 ENTERGY CORPORATION EMERGENCY ORGANIZATION

This Post-Shutdown Emergency Plan establishes an organization capable of responding to the complete spectrum of incidents covered by this Post-Shutdown Emergency Plan. Provisions are made for rapid notification of appropriate portions of the response organization, and for expanding the response organization if the situation dictates.

An individual having the authority and responsibility to initiate any emergency actions within the provisions of this Post-Shutdown Emergency Plan, including the exchange of information with authorities responsible for coordinating offsite emergency measures, is onsite at all times. This individual is the Shift Manager until relieved by the Emergency Director.

The operating shift crew is responsible for implementing emergency action(s) in accordance with assigned response functions. Emergency response functions are also assigned to additional Plant staff personnel who are rapidly alerted and mobilized to augment or relieve the operating shift personnel of emergency duties as deemed appropriate by the Emergency Plant Manager, and in accordance with the implementing procedures of this Plan.

In addition, this Plan includes offsite agencies and organizations who have signed letters of agreement with Palisades Nuclear Power Plant (see Appendix A). Their designated response functions include implementation of offsite protective actions, transportation and treatment of personnel requiring medical treatment, control of access to the station, fire-fighting support, radiological sampling and assessment, technical consultation, and testing.

3.3 EMERGENCY CLASSIFICATIONS

Emergencies are grouped into four classifications listed below in order of severity:

a. Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
b. Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

c. Site Area Emergency

Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

d. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

Section 4 from the Palisades Nuclear Plant Post-Shutdown Emergency Plan contains a more detailed discussion of the classifications of emergencies. Table 3-1, "Emergency Classifications and the Level of Response by Participating Groups," shows, in column form, the emergency classifications, and the degrees of involvement of onsite and offsite organizations.
3.4 EMERGENCY ACTIONS

In all instances, when one of the classifications of the above emergencies occurs in the Plant, the Shift Manager is responsible for taking immediate action to safeguard personnel and equipment. Utilizing the Palisades Nuclear Plant Emergency Implementing Procedures, the Shift Manager shall activate the necessary portions of the Post-Shutdown Emergency Plan. The basic considerations for safe operation of the Plant, and for action in the event of an emergency in the Plant, are summarized as follows:

a. In any event, protection of Plant personnel and the public is the highest priority. A range of protective actions to protect onsite personnel during hostile action is provided to ensure the continued ability to perform the functions of the emergency plan. Plant system and equipment protection is secondary.

b. When there is doubt as to the classification of the emergency condition, the more conservative case is considered.

c. The instrumentation is assumed to be providing correct information unless it is clearly identified that an instrument is erroneous or out of service.

d. All alarms are promptly acknowledged, any required response action is taken, and an immediate investigation of the cause that initiated the alarm is made.
<table>
<thead>
<tr>
<th>EMERGENCY</th>
<th>SHIFT RESPONSE</th>
<th>NOTIFICATION</th>
<th>PLANT STAFF RESPONSE</th>
<th>SUPPORT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unusual Event</td>
<td>Investigate. Shift Manager activates appropriate emergency team(s).</td>
<td>Duty Station Manager, Van Buren County, State, and NRC.</td>
<td>Supplement on-shift resources as needed.</td>
<td>None</td>
</tr>
<tr>
<td>General Emergency</td>
<td>Investigate. Shift Manager activates appropriate teams. Required Plant protective actions performed.</td>
<td>Duty Station Manager, Van Buren County, State, NRC, and staff augmentation.</td>
<td>TSC/OSC/EOF/JIC activation. Supplement activated emergency teams. Investigate event, assist shift personnel in controlling Plant response. Assess radiological consequences. EOF Director provides protective action recommendations to offsite authorities.</td>
<td>Determine need for further offsite support. Acquire offsite support as required.</td>
</tr>
</tbody>
</table>
4.0 POST-SHUTDOWN EMERGENCY CONDITIONS

4.1 EMERGENCY CLASSIFICATION SYSTEM

This Post-Shutdown Emergency Plan provides four mutually exclusive classifications covering the postulated spectrum of emergency situations. For each classification, a particular set of immediate actions to be taken is established as described in Section 6, of the Post-Shutdown Emergency Plan. Actions for each of the four mutually exclusive classifications are defined in Emergency Implementing Procedure EI-1, "Emergency Classification and Actions," Attachment 1, "Emergency Actions."

The various classifications of accidents represent a hierarchy of accidents based on potential or actual hazards presented to the general public. Accidents may be classified in a lower category at first and then escalated to another higher classification if the situation deteriorates. Accident classification may be downgraded as conditions improve. The four classes that comprise the Emergency Classification System are:

a. Unusual Event

b. Alert

c. Site Area Emergency

d. General Emergency

All emergency measures begin with the notification of the Shift Manager that a situation exists which presents a real or potential hazard. This is followed by assessment and evaluation by the Shift Manager, classification of the emergency, notifications, and activation and/or mobilization of the applicable emergency organizations. Section 6 summarizes the emergency measures to be taken by both the onsite and offsite emergency organizations.

Emergency Action Levels (EALs) are used to describe each of the four emergency classes. These levels are composed of a combination of Plant parameters (such as instrument readings and system status) that can be used to give relatively quick indication to the Plant operating staff of the severity of the accident situation.
The purpose of the EAL is to provide the earliest possible identification of actual or potential accident situations. In most cases, further assessment action will be conducted both onsite and offsite before actual protective actions are initiated. EALs associated with radioactive releases are related to the Environmental Protection Agency's Protective Actions Guides (PAG) summarized in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." An assessment by the Plant emergency organization along with state support agencies of the potential of reaching or exceeding the PAG will be performed following the declaration of an emergency class.

When EALs are observed in conjunction with Plant or equipment status due to planned maintenance or testing activities, an emergency condition does not exist.

A conservative philosophy for classification shall be used to declare the highest classification for which an EAL has been exceeded. For example, a Site Area Emergency would be declared directly if a Site Area Emergency level is exceeded without having previously been declared in a lower Alert classification.

The Emergency Action Levels are not necessarily all inclusive. The Shift Manager/EOF Emergency Director shall declare an appropriate emergency classification whenever, in their personal judgment, the Plant status warrants such a declaration.

Palisades Emergency Action Levels can be found in the "Post-Shutdown Emergency Plan Supplement 1 - EAL Wall Charts."

4.1.1 Unusual Event

The Unusual Event is the least severe of the four emergency classifications. For the purposes of this plan, an Unusual Event is defined as that situation where, "Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs."

The purpose of the Unusual Event declaration is to:

a. Assure that the first step in any response later found to be necessary has been carried out.

b. Bring the Plant operations staff to a state of readiness.
c. Provide systematic handling of Unusual Events information and decision-making.

Guidelines for Plant, State, and local actions are listed in Table 4-1. An incident shall be classified as an Unusual Event if the event is minor in nature, involves no releases of radioactive material requiring offsite response or monitoring, and presents no immediate hazard to the public. Events in this classification are selected based upon a potential to degenerate to a more severe situation rather than an actual public hazard.

4.1.2 Alert

An Alert is defined as that situation where, "Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels." The Alert class involves relatively minor emergency situations that have a direct effect on the Plant safety-related systems. The Alert shall set into motion personnel onsite and offsite who would be required to perform actions up to and including the evacuation of near-site areas. The Alert class also addresses limited releases of radioactive material and, therefore, might require some assessment actions by the emergency organizations.

The purpose of the Alert declaration is to:

a. Assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required.

b. Provide offsite authorities current status information.

Guidelines for Plant, State, and local actions are listed in Table 4-1. An incident shall be classified as an Alert if there is real or potential limited releases of radioactive material to the environment. A situation shall be classified at the Alert level only if EALs for higher classification have not been exceeded or are not expected to be exceeded in the near term.
4.1.3 Site Area Emergency

A Site Area Emergency is defined as that situation where, "Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary."

The purpose of the Site Area Emergency declaration is to:

a. Assure that emergency response facilities are manned.

b. Assure that radiation-monitoring teams are dispatched both onsite and offsite.

c. Assure that personnel required for evacuation of near-site areas are at their duty stations if the situation becomes more serious.

d. Provide consultation with offsite authorities.

e. Provide updates for the public through offsite authorities.

Guidelines for Plant, State, and local actions are listed in Table 4-1. Although immediate protective actions are not automatically required, declaration of a Site Area Emergency shall set into motion all personnel onsite and offsite who would be required to perform actions up to and including the evacuation of near-site areas. Dispatched radiation monitoring teams will make continuing assessments to provide officials with information to decide protective actions. The Site Area Emergency classification includes accidents that have significant radiation release potential.

Unlike the Unusual Event and Alert classifications of emergencies, the Site Area Emergency classification may involve some radiation exposure to the near-site public. Many of the accidents included in this classification have the potential for degradation to the General Emergency classification. Although the EALs for this classification have been selected at values well below the EPA PAGs, offsite monitoring team reports and continuing assessment actions shall lead to any final decision on protective actions to be taken.

Accidents that have significant potential for the release of radioactive material shall be classified as a Site Area Emergency.
4.1.4 General Emergency

The General Emergency is the most severe classification of emergency. The General Emergency classification is defined as that situation where, "Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area."

The purpose of the General Emergency declaration is to:

a. Initiate predetermined protective actions for the public.

b. Provide continuous assessment of information from Palisades Plant, and offsite monitoring groups.

c. Initiate additional measures as indicated by event releases or potential releases.

d. Provide consultation with offsite authorities.

e. Provide updates for the public through offsite authorities.

Guidelines for Plant, State, and local actions are listed in Table 4-1. Some protective actions may be recommended upon declaration of the General Emergency since the lower limits of the EPA PAGs are likely to be exceeded. Emergency Action Levels (EAL) have been selected so that time should be available to make some confirmatory measurements in the field prior to implementation of the more extensive (i.e., evacuation) protective action. Some of the General Emergency action levels require a dose projection calculation using actual meteorology. This differs from the adverse meteorology assumptions used in the Site Emergency Action Levels in order to remove this built-in conservatism and to preclude declaring a General Emergency when actual conditions do not warrant the higher classification. Declaration of a General Emergency requires a recommendation to the State for protective actions for the local population.

4.2 CLASSIFICATION OF POSTULATED ACCIDENTS

The events postulated in Section 14, Palisades Plant Final Safety Analysis Report (FSAR), may be categorized into one or more of the four emergency classifications. A complete discussion of these events may be found in the FSAR.
### TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNUSUAL EVENT</strong></td>
<td><strong>Class Description</strong>&lt;br&gt;Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.</td>
<td>1. Promptly inform state and local offsite authorities of nature of unusual condition as soon as discovered.</td>
</tr>
<tr>
<td></td>
<td><strong>Purpose</strong>&lt;br&gt;Purpose of offsite notification is to: (1) assure that the first step in any response later found to be necessary has been carried out, (2) bring the operating staff to a state of readiness, and (3) provide systematic handling of Unusual Events information and decision making.</td>
<td>2. Augment on-shift resources as needed.</td>
</tr>
<tr>
<td></td>
<td>1. Promptly inform state and local offsite authorities of nature of unusual condition as soon as discovered.</td>
<td>1. Provide fire or security assistance if requested.</td>
</tr>
<tr>
<td></td>
<td>2. Augment on-shift resources as needed.</td>
<td>2. Escalate to a more severe class, if appropriate.</td>
</tr>
<tr>
<td></td>
<td>3. Assess and respond.</td>
<td>3. Stand by until verbal closeout.</td>
</tr>
<tr>
<td></td>
<td>4. Escalate to a more severe class, if appropriate, or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Close out with verbal summary to offsite authorities; followed by written summary.</td>
<td></td>
</tr>
</tbody>
</table>
## TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
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<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALERT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Class Description

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

### Purpose

Purpose of the Alert is to (1) assure that emergency personnel are readily available to respond if situation becomes more serious or to perform confirmatory radiation monitoring if required, and (2) provide offsite authorities current status information.

1. Promptly inform state and local offsite authorities of Alert status and reason for emergency as soon as discovered.
3. Assess and respond.
4. Dispatch onsite monitoring teams and associated communications.
5. Designate an individual for Plant status updates to offsite authorities.
6. Provide meteorological data to off site authorities and if any releases are occurring, dose estimates for actual releases.
7. Escalate to a more severe class, if appropriate
   - or
8. Close out or recommend reduction in emergency class by briefing of offsite authorities and by phone followed by written summary.

1. Provide fire or security assistance if requested.
2. Augment resources and bring primary response centers and Emergency Alert System to standby status.
3. Alert to standby status key emergency personnel including monitoring teams and associated communications.
5. Escalate to a more severe class, if appropriate.
6. Maintain Alert status until verbal closeout or reduction of emergency class.
### TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SITE AREA EMERGENCY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Class Description</strong></td>
<td>Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.</td>
<td></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Purpose of the Site Area Emergency declaration is to: (1) assure that response centers are manned, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.</td>
<td>1. Provide any assistance requested.</td>
</tr>
<tr>
<td></td>
<td>1. Promptly inform state and local offsite authorities of Site Area Emergency status and reason for emergency as soon as discovered.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Assess and respond.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Dispatch onsite and offsite monitoring teams and associated communications.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Designate an individual for Plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Make senior technical and management staff onsite available for consultation with NRC and state on a periodic basis.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Provide meteorological and dose estimates to offsite authorities for actual releases via a designated individual or automated data transmission.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cont'd on next page.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. If sheltering near the site is desirable, activate public notification system within at least two miles of the Plant.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Provide public within at least about 10 miles periodic updates on emergency status.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Augment resources by activating primary response centers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Dispatch key emergency personnel including monitoring teams and associated communications.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Alert to standby status other emergency personnel (eg, those needed for evacuation) and dispatch personnel to near-site duty stations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Provide off-site monitoring results to licensee, DOE, and others and jointly assess them.</td>
<td></td>
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<tr>
<td></td>
<td>Cont'd on next page.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>SITE AREA EMERGENCY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(cont)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Provide release and dose projections based on available Plant condition information and foreseeable contingencies.</td>
<td>8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.</td>
</tr>
<tr>
<td>9.</td>
<td>Escalate to a General Emergency class, if appropriate.</td>
<td>9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11. Escalate to General Emergency class, if appropriate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12. Maintain General Emergency status until closeout or reduction of emergency class.</td>
</tr>
</tbody>
</table>
### TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL EMERGENCY</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Class Description</strong></td>
<td>Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.</td>
<td></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Purpose of the General Emergency declaration is to: (1) initiate predetermined protective actions for the public, (2) provide continuous assessment of information from licensee and offsite organization measurement, (3) initiate additional measures as indicated by actual or potential releases, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Promptly inform state and local offsite authorities of General Emergency status and reason for emergency as soon as discovered (parallel notification of state/local).</td>
<td>1. Provide any assistance requested.</td>
</tr>
<tr>
<td></td>
<td>3. Assess and respond.</td>
<td>3. For actual or projected severe core damage accidents or loss of control of facility, recommend evacuation for 2 mile radius and 5 miles downwind (unless conditions make evacuation dangerous) and assess need to extend distances. Advise the remainder of plume EPZ to go indoors and listen to Emergency Alert System (EAS) messages.</td>
</tr>
<tr>
<td></td>
<td>4. Dispatch onsite and offsite monitoring teams and associated communications.</td>
<td>4. Augment resources by activating primary response centers.</td>
</tr>
<tr>
<td></td>
<td>5. Designate an individual for Plant status updates to offsite authorities and periodic press briefings (perhaps joint offsite authorities).</td>
<td>5. Dispatch key emergency personnel including monitoring teams and associated communications.</td>
</tr>
<tr>
<td></td>
<td>6. Make senior technical and management staff onsite available for consultation with NRC and state on a periodic basis.</td>
<td>6. Dispatch other emergency personnel to duty stations within five-mile radius and alert all others to standby status.</td>
</tr>
<tr>
<td></td>
<td>7. Provide meteorological and dose estimates to offsite authorities for actual releases via a designated individual or automated data transmission.</td>
<td>7. Provide offsite monitoring results to licensee, DOE, and others and jointly assess them.</td>
</tr>
</tbody>
</table>

Cont’d on next page.
## TABLE 4-1
GUIDELINES FOR PLANT, STATE AND LOCAL ACTIONS

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LICENSEE ACTIONS</th>
<th>STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL EMERGENCY (cont)</td>
<td>Provide release and dose projections based on available Plant condition information and foreseeable contingencies.</td>
<td>Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources.</td>
</tr>
<tr>
<td>8.</td>
<td>Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary.</td>
<td>Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance.</td>
</tr>
<tr>
<td>10.</td>
<td>Maintain General Emergency status until closeout or reduction of emergency class.</td>
<td></td>
</tr>
</tbody>
</table>
5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

Emergency planning must consider the capabilities of the normally present operating staff, augmented by support from other utility personnel and local and distant support. The initial phases of an emergency situation at a permanently shutdown and defueled nuclear power plant will involve a relatively small number of individuals. These individuals must be capable of: (1) determining that an emergency exists, (2) providing initial classification and assessment, and (3) promptly notifying other groups and individuals in the emergency organization.

The Palisades Plant Organization has complete capability, at all times, to perform the detection, classification, and notification functions required in the early phases of an emergency. These capabilities are augmented, as required, by the Palisades Emergency Response Organization (ERO).

This section of the Post-Shutdown Emergency Plan addresses the assignment of personnel and the establishment of responsibilities and authority for the:

a. Palisades Plant Organization
b. Palisades Emergency Response Organization

Figure 5-1 shows the interfaces between these organizations, governmental agencies, and the general public.

5.1 PALISADES PLANT ORGANIZATION

The Palisades Nuclear Plant shift activities are under the control of the General Manager, Plant Operations. The shift activities at the Plant are conducted by operating crews on twelve-hour shifts. Each twelve-hour shift is responsible for continuous operation of the Plant.

5.2 OPERATING AND ENGINEERING ORGANIZATION

The Palisades Plant organization includes personnel encompassing both the management and operations staff. The minimum on-shift staffing is indicated in Figure 5-2.
5.2.1 GENERAL MANAGER, PLANT OPERATIONS

The General Manager, Plant Operations is responsible for the technical and administrative management of the day-to-day physical operation of the Plant; this includes Operations, Chemistry and Radiological Services, Maintenance, and Planning and Scheduling.

5.2.2 Director - Emergency Programs

The Director, Emergency Programs, is directly responsible for Entergy Emergency Preparedness, including: company-wide projects, National emergency interfaces, and regulatory issues.

5.2.3 Director - Engineering

The Director - Engineering is responsible for system and design engineering, nuclear engineering, engineering programs, dry fuel services, and nuclear fuel supply.

5.2.4 Regulatory and Performance Improvement Director

The Regulatory and Performance Improvement Director provides onsite oversight/supervision for emergency planning.

5.2.5 Duty Station Manager

This is a rotating position among qualified Plant upper management (as defined by the General Manager, Plant Operations). The Duty Station Manager functions as the General Manager, Plant Operations on backshifts and weekends.

5.2.6 Shift Manager

The Shift Manager, one of whom is on duty at all times, is responsible for the safe and efficient operation of the Plant during his assigned shift. The Shift Manager maintains control over Plant operations as the Certified Fuel Handler (CFH) unless properly relieved by another Shift Manager. In an emergency condition, the Shift Manager initially assumes the role of Emergency Director.

5.2.7 DELETED

5.3 PALISADES EMERGENCY RESPONSE ORGANIZATION

In the event of an emergency in which one of the classification levels is declared (Unusual Event, Alert, Site Area Emergency, or General Emergency), all or a portion
of the Post-Shutdown Emergency Plan will be activated. The assignment of responsibilities in the Emergency Response Organization (ERO) is ultimately the responsibility of the General Manager, Plant Operations. However, the ERO is predefined and alternate assignments to various positions are specified to provide for automatic, unambiguous staffing of the emergency organization within the time necessary to respond to the emergency.

In general, the emergency organization will be housed in five emergency response centers:

a. Control Room
b. Technical Support Center
c. Operations Support Center
d. Emergency Operations Facility
e. Joint Information Center

### 5.3.1 Control Room

The Control Room is designed to be habitable under accident conditions and shall serve as the on-site Emergency Control Center. Emergency lighting, power, air filtration-ventilation system, and shielded walls enable the operators to remain in the Control Room to ensure that the plant remains in a safe condition. The minimum on-shift staffing is indicated in Figure 5-2.

### 5.3.2 Technical Support Center

The Technical Support Center (TSC) will provide Plant management and technical support to Operations personnel during emergency conditions and guidance to Control Room operating personnel to mitigate the effects of the emergency condition.

The TSC organization can be found in Emergency Implementing Procedure EI-4.1, "Technical Support Center Activation."

### 5.3.3 Operations Support Center

The Operations Support Center (OSC) will coordinate Emergency Maintenance, Radiation Protection, and Chemistry activities of Plant personnel. The Control Room or TSC (when activated) will direct the priorities for the OSC. The OSC organization
5.3.4 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is located in downtown Benton Harbor, approximately 16 miles South Southwest from the Plant. The EOF staff is responsible for overall management of an emergency and for communicating with external agencies upon transfer of responsibility from the Control Room.

Activation of the EOF is mandatory at the Alert, Site Area, and General Emergency Classifications. Activation of the EOF at an Unusual Event will be at the request of the Shift Manager. The EOF will be staffed by Plant personnel. The initial staff may be supplemented by federal, state, and local officials.

Once activated and operational, the EOF Emergency Director will be responsible for management of overall emergency response. The EOF will coordinate emergency response activities with federal, state, and local agencies to mitigate the consequences of an emergency. The EOF organization can be found in Emergency Implementing Procedure EI-4.3, "Emergency Operations Facility Activation."

The EOF provides an alternative facility, with communications capabilities for contacting the Control Room and plant security, to serve as a staging area for augmented emergency response staff if the site is under threat of, or experiencing hostile action.

The design features of the EOF are discussed in Palisades Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."

5.3.5 Joint Information Center (JIC)

The plant Communications personnel shall be responsible for maintenance of the Palisades Nuclear Plant Public Information Policies and Procedures. These provide for disseminating information to the public via the media and establishing a system for rumor control during an emergency. Public Affairs personnel shall coordinate the activation and management of the Joint Information Center (JIC) in cooperation with the Corporate Public Affairs Department. Public Affairs personnel shall prepare and issue press releases in cooperation with state and local agencies. Reference Palisades Nuclear Plant Emergency Public Information Policies and Procedures for details.

5.4 EMERGENCY STAFFING
Normal Plant staffing provides sufficient personnel for continuous protracted emergency operation. The extent to which the emergency organization is activated is dependent upon the classification of the emergency. A method for emergency staff augmentation is available to the Shift Manager. Figure 5-2 provides requirements for minimum additional staffing and required arrival times. Details of emergency staff augmentation are available in Emergency Implementing Procedure EI-2.2, "Emergency Staff Augmentation."

5.4.1 Shift Manager/EOF Emergency Director

The Shift Manager/EOF Emergency Director is responsible for the overall assessment of emergency conditions, especially where emergency conditions present a real or potential hazard to off-site persons or property. The Shift Manager/EOF Emergency Director will have the overall responsibility for operational decisions involving the safety of the Plant and its personnel, and for making recommendations based on technical information supplied by support personnel regarding the general public during an emergency situation. The Shift Manager/EOF Emergency Director will also implement the Palisades Post-Shutdown Emergency Plan through the use of specific Emergency Plan Implementing Procedures. The Shift Manager/EOF Emergency Director is responsible for ensuring the capability for continuous operation of emergency response centers, including personnel and material resources. In addition, the Shift Manager/EOF Emergency Director is responsible for providing off-site officials with pertinent information regarding the conditions at the Plant.

**NOTE:** Any conflicts that should arise between the Emergency Plant Manager and the EOF Emergency Director will be resolved by the Site Vice President.

5.4.2 Shift Manager/Emergency Plant Manager

The Shift Manager/Emergency Plant Manager may not delegate the decision to evacuate the site or the decision to authorize exposures that exceed the 10 CFR 20 regulatory exposure limits for emergency workers.

Prior to activation of the EOF, the decision to recommend protective actions to off-site organizations also cannot be delegated. The EOF Director, in consultation with the Shift Manager, will assume this responsibility after the EOF is activated.

For backshifts and weekends, the Duty Station Manager assumes the role of the Plant General Manager.

**NOTE:** The Shift Manager assumes the responsibilities of the Post-Shutdown Emergency Plan until relieved by the EOF Director.
The Emergency Plant Manager shall be assigned to the Technical Support Center once it is activated.

5.5 RECOVERY ORGANIZATION

Recovery after an emergency condition will be handled by the emergency organization unless conditions indicate that recovery will be complicated or will take a long period of time. At the discretion of the EOF Emergency Director, the Plant will shift from an emergency organization structure to a Recovery Organization. Guidelines that will be employed for determining this shift are explained in Palisades Post-Shutdown Emergency Plan, Section 9.0, "Recovery."

The Recovery Organization will depend upon the nature of the accident and the situations preceding the accident.

The TSC Engineering Coordinator will also support the EOF Rad Assessment Coordinator in determining how much radioactivity potentially can be released to the atmosphere based on the nature and extent of spent fuel damage.

5.6 OFF-SITE EMERGENCY RESPONSE SERVICES

The potential consequences of some emergencies may require the support services of off-site individuals, organizations, and agencies. As a result, local support service arrangements have been made with offsite groups to provide onsite aid in the event of an emergency situation, including those resulting from hostile actions. Support services encompass such areas as medical assistance, fire control, evacuation, ambulance services, and law enforcement. Written agreements are entered into to assure these individuals'/agencies'/organizations' availability and capabilities. In the written agreements, the agencies have outlined their responsibilities or have agreed to their responsibilities as outlined in this section. A listing of the letters of agreement, contracts, or signature pages has been included in Appendix A. In those cases where agency assistance is mandated by law (i.e., the State of Michigan), a letter of agreement may be excluded from the Plan. The services provided by local support groups are listed in the following sections.

5.6.1 Medical Services

The primary hospital facility for the treatment of serious medical emergencies occurring at the Plant is South Haven Community Hospital, located in South Haven, Michigan, approximately 6 miles from the Plant. South Haven Community Hospital is equipped to receive and treat all types of accident victims, including those with radioactive contamination. The backup medical facility is Lakeland Regional Medical Center, located approximately 20 miles from the Plant in St Joseph, Michigan. The hospital shall be notified of incoming accident victims at the direction of the
Emergency Director. The hospital may contact the Plant by telephone in the event information is required in the treatment of a victim.

Ambulance service for the transportation of accident victims, including radioactively contaminated victims, is provided by the Covert Fire Department, with backup services provided by South Haven Ambulance Service and Medic I of Benton Harbor.

The ambulance units and Emergency Medical Technicians are trained and equipped to respond to a medical emergency at the Plant. The Shift Manager is responsible for the decision to request off-site medical support. The ambulance service shall be notified at the direction of the Shift Manager. Contact with the ambulance may be maintained through the respective medical service dispatcher.

5.6.2 Fire-Fighting Services

When it is determined by the Emergency Director that off-site fire support is necessary, fire protection response will be by the Covert Fire Department with mutual aid provided by the Van Buren County Mutual Aid Pact. Contact may be made using the telephone system. Fire Department personnel will be trained in handling emergency situations for nuclear facilities.

In addition to their fire suppression capabilities, the fire departments will provide specially equipped vehicles and personnel trained for emergency rescue and other contingencies.

5.6.3 Law Enforcement Agencies

In the event of a civil disturbance or criminal act, the Michigan State Police, Van Buren County Sheriff Department, and the Covert Township Police Department may provide law enforcement assistance.

An Auto-Dial line exists to the Michigan State Police Operations in Lansing, Michigan and the Van Buren County Sheriff Department in Paw Paw, Michigan.
5.6.4 Van Buren County Office of Domestic Preparedness

The Van Buren County Office of Domestic Preparedness is located in the County Sheriff's Courthouse Annex, Paw Paw, Michigan. In the event of an emergency, Van Buren County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chairman of the Van Buren County Board of Commissioners, Van Buren County Domestic Preparedness Director, and the Emergency Operations Center (EOC), if activated. Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chairman of the Van Buren County Board of Commissioners is responsible for activation of the county's Emergency Operations Plan. The Van Buren County Domestic Preparedness Director is responsible for overall coordination and planning of emergency response activities within the county. The Director will implement the activation and operational aspects of the EOC and alert key officials and agencies. The Director will coordinate efforts with other agencies to inform the public in affected portions of the county to take protective actions when conditions warrant.
5.6.5 Berrien County Emergency Management

The Berrien County Emergency Operations Center (EOC) is located in Benton Harbor, Michigan. The Chief of Staff (Director of Emergency Management) is responsible for overall coordination of emergency operations in Berrien County in the event of an emergency. The Chief of Staff operates under the direction of the Chief Executive (Chair, Berrien County Board of Commissioners). Berrien County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chief of Staff and/or the Emergency Management Coordinator and the Emergency Operations Center (EOC), if activated. Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chief Executive (Chair, Berrien County Board of Commissioners) is responsible for activation of the County's Emergency Operations Plan and for overall coordination and planning of emergency operations with Van Buren County until this information and direction is provided by the State of Michigan. The Chief of Staff (Director of Emergency Management) is responsible for initiating the staffing of the EOC. By prior agreement between counties, communications between the Plant and Berrien County will normally be directed through Van Buren County.

5.6.6 Allegan County Office of Emergency Preparedness

The Allegan County Office of Emergency Management is located at the Allegan County Office Complex, Allegan, Michigan. In the event of an emergency, Allegan County Sheriff's Department will disseminate information and recommendations initially supplied by Entergy Corporation to the Chairperson of the Allegan County Board of Commissioners, Allegan County Emergency Management Director, and the Emergency Operations Center (EOC), if activated. By prior agreement between the counties, communications between the Plant and Allegan County will normally be directed through Van Buren County. Palisades Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment," summarizes communications.

The Chairperson of the Allegan County Board of Commissioners is responsible for the activation of the County's Emergency Operations Plan. The Allegan County Emergency Management Director is responsible for overall coordination and planning of emergency response activities within the county. The Emergency Management Director will implement activation of the EOC and alert key officials and agencies.
5.7 COORDINATION WITH GOVERNMENTAL AGENCIES

The coordination between the state, county, and federal emergency plans and the Palisades Post-Shutdown Emergency Plan serves to ensure the safety and health of the public. The coordination of the emergency plans enables all organizations to participate without confusion or hesitation in regard to their responsibilities. All participating agencies should have a clear picture of the roles they play during an emergency situation. As a part of the coordination effort, each participating agency is assigned specific responsibilities and authority in regard to both emergency planning and emergency response. Written agreements with governmental agencies are included in Appendix A, "Agreement With Offsite Individuals, Agencies, and Organizations."

5.7.1 State of Michigan Agencies

State agencies are under the direction of the Governor of the State of Michigan.


The State Police Emergency Management and Homeland Security Division is the leading state agency for emergency response planning and operations. This agency is under the direction of the State Director of Emergency Management. Responsibilities of this group include:

1. Development and maintenance of the Michigan Emergency Management Plan and assistance to the counties in developing their individual emergency operations plans.

2. Recommendations to the Governor of the State of Michigan regarding emergency measures.

3. Arranging training programs for state and local agencies designed to promote effective response to radiological incidents.

4. Providing communications, radiological monitoring, and other available support to affected local governments.

5. Coordinating the support of other state agencies or political subdivisions near the affected area and obtaining the assistance of federal agencies as required.

The normal point of contact for the Palisades Plant is through the Operations Division of the Michigan State Police in Lansing.
The Palisades Plant will support the State Police by providing specific information pertaining to the nature of the incident, recommendations on protective actions, and other available information and technical guidance.

b. Michigan State Police - Paw Paw Post

Michigan State Police (MSP) is responsible for providing emergency traffic control and other available assistance. The MSPs nearest post is located in Paw Paw, Michigan with direct radio communications to Van Buren, Allegan, and Berrien Counties. Communications are detailed in Palisades Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."

c. Michigan Department of Transportation

Michigan Department of Transportation (MDOT) assists in emergency traffic regulation coordination with the Michigan State Police, the Sheriff, and the County Road Commission of the affected county.

d. Michigan Department of Environmental Quality (DEQ)

The Michigan Department of Environmental Quality, Radiological Protection Section located in Lansing is responsible for administering and directing radiation control programs and activities within the state. Their Radcon Field Team provides direct radiological emergency response capability during emergency conditions. The team's responsibilities include:

1. Moving immediately to the affected area and performing radiological monitoring, as appropriate.

2. Determining and reporting the nature and scope of the hazard.

3. Providing state government with technical guidance, recommending appropriate emergency countermeasures and recovery actions, and otherwise assisting the affected community.

The Department of Environmental Quality, Radiological Protection Section is responsible for providing the public with health hazard evaluation, guidance, or protective actions and other pertinent information concerning radiological incidents.
e. Michigan Department of Health and Human Service

The Michigan Department of Health and Human Services is responsible for coordinating emergency medical support of radiological incidents, as requested by DEQ, Radiological Protection Section, or local health authorities.

f. Michigan Department of Agriculture and Rural Development

The Michigan Department of Agriculture and Rural Development acts on advice from the State Health Director for controlling agricultural products and production for the purpose of radiation health hazard abatement. Protective actions initiated by the Department of Agriculture and Rural Development may include any or all of the protective actions recommended by the Environmental Protection Agency.

5.7.2 Federal Agencies

a. Nuclear Regulatory Commission (NRC)

Nuclear Regulatory Commission for the State of Michigan may request the Federal Department of Energy dispatch Federal Radiological Monitoring and Assessment Center (FRMAC) personnel to the scene in the event of an emergency who could perform radiological monitoring and dose assessment. The Emergency Director has the authority to request NRC assistance. The office may also furnish advice and assistance to the Plant as deemed necessary. The NRC shall be notified within an hour, anytime all or part of the Post-Shutdown Emergency Plan is activated. Means of communications are described in the Post-Shutdown Emergency Plan, Section 7.0, "Emergency Facilities and Equipment."

Facilities for the NRC are available in the Technical Support Center and the Emergency Operations Facility, including work space and telephones. The Emergency Operations Facility provides space for trailers for long term support capabilities.
b. US Department of Energy (DOE)

The Department of Energy will assist during radiological emergencies by furnishing advice, consultation, and assistance regarding the protection of personnel, treatment of injured and/or exposed persons, minimization of further exposure and contamination, and the determination of existence and extent of contamination. The DOE will respond to the FRMAC in support of the state and local monitoring operations, but may receive requests for assistance directly from the Plant as authorized by the Emergency Director.

Contact with the DOE may be established using telephone lines. The Emergency Operations Facility provides space for trailers in support of DOE activities.

c. Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency will assist the utility in real events with consultation and expertise in controlling an actual emergency. FEMA also evaluates Local and State Emergency Plans to ensure adequacy.

d. Federal Radiological Monitoring and Assessment Center

The Federal Radiological Monitoring and Assessment Center is a joint facility for all federal agencies involved in evaluating and mitigating radiological events. The NRC is the Lead Federal Agency (LFA) for the FRMAC and will coordinate the efforts of all federal agencies involved. The FRMAC will supply information and support to state and local governments concerning radiological conditions.

5.8 INSTITUTE OF NUCLEAR POWER OPERATIONS (INPO)

The Institute of Nuclear Power Operations will provide emergency response as requested by Entergy Corporation. INPO can provide assistance locating sources of emergency manpower and equipment, analyzing operational aspects of the event, and organizing industrial experts who could advise Entergy Corporation on technical matters. INPO will be contacted by means of its 24-hour telephone number in the event of a radiological emergency. The EOF Emergency Director shall be responsible for requesting assistance from INPO.
### FIGURE 5-2
POST-SHUTDOWN PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60 Min</td>
</tr>
<tr>
<td>Plant Operations and Assessment of Operational Aspects</td>
<td>Shift Manager</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Non-Certified Operators</td>
<td>2</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Emergency Director</td>
<td>Shift Manager</td>
<td>1*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Notification/ Communication</td>
<td>Notify licensee, state, local, and federal personnel and maintain communication</td>
<td>1*</td>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>Radiological Accident Assessment and Support of Operational Accident Assessment</td>
<td>Emergency Operations Facility (EOF) Director</td>
<td>Senior Manager</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Offsite Dose Assessment</td>
<td>Senior Radiation Protection (RP) Expertise</td>
<td>1*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Chemistry/Radiochemistry</td>
<td>RP Technicians</td>
<td>1*</td>
<td>--</td>
</tr>
</tbody>
</table>

**NOTES:**
* May be provided by shift personnel assigned other functions.
<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60 Min 90 Min</td>
</tr>
<tr>
<td>Plant System Engineering, Repair, and Corrective Actions</td>
<td>Technical Support</td>
<td>Electrical/Mechanical</td>
<td>--</td>
<td>1  --</td>
</tr>
<tr>
<td>Repair and Corrective Actions</td>
<td>Mechanical Maintenance Electrical Maintenance</td>
<td>1* 1*</td>
<td>1  --</td>
<td></td>
</tr>
<tr>
<td>Field Monitoring Teams (FMTs)</td>
<td>Onsite FMT - Radiation monitor to assess environmental radiation/contamination and provide input to Senior Radiation Protection Expertise. Also provide RP coverage for FMT.</td>
<td>RP Technician</td>
<td>--</td>
<td>1  --</td>
</tr>
<tr>
<td></td>
<td>Offsite FMT - Perform environmental radiation/contamination assessments and radioactive plume tracking. Communicate and coordinate with applicable ERO supervision. Responsible for the radiation protection of the FMT.</td>
<td>RP Technicians</td>
<td>--</td>
<td>1  1</td>
</tr>
<tr>
<td>Transportation</td>
<td>Drivers</td>
<td></td>
<td></td>
<td>1  1</td>
</tr>
</tbody>
</table>
### Figure 5-2
**Post-Shutdown Plant Staffing and Augmentation Requirements**

<table>
<thead>
<tr>
<th>Major Functional Area</th>
<th>Major Tasks</th>
<th>Position Title or Expertise</th>
<th>On Shift</th>
<th>Staff Augmentation Capability and Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Fighting</td>
<td>--</td>
<td>--</td>
<td>60 Min</td>
<td>90 Min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fire Brigade per Technical Specifications</td>
<td>Local Support</td>
<td></td>
</tr>
</tbody>
</table>
## FIGURE 5-2
PLANT STAFFING AND AUGMENTATION REQUIREMENTS

<table>
<thead>
<tr>
<th>MAJOR FUNCTIONAL AREA</th>
<th>MAJOR TASKS</th>
<th>POSITION TITLE OR EXPERTISE</th>
<th>ON SHIFT</th>
<th>STAFF AUGMENTATION CAPABILITY AND RESPONSE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rescue Operations and First-Aid</td>
<td>--</td>
<td>--</td>
<td>2*</td>
<td>60 Min</td>
</tr>
<tr>
<td>Site Access Control and Personnel</td>
<td>Security, fire fighting communications, personnel accountability</td>
<td>Security Personnel</td>
<td>All per Security Plan</td>
<td>90 Min Local Support</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>4</td>
<td>12</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**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 additional 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.

* May be provided by shift personnel assigned other functions.
6.0 EMERGENCY MEASURES

a. This section identifies the measure to be used for each type of emergency previously classified in Section 4. The logic presented in this section is used as the basis for the detailed Palisades Nuclear Plant Emergency Implementing Procedures which define the emergency actions to be taken for each emergency classification. Emergency measures begin with the following:

1. Recognition, classification, and declaration of an emergency condition.
2. Notification of the applicable agencies and personnel (Figure 6-1).
3. Mobilization of the appropriate portions of the emergency organization.

b. Emergency measures are additionally organized into the following categories:

1. Assessment actions
2. Corrective actions
3. Protective actions

These measures are described in the following sections for each emergency classification.

6.1 ACTIVATION OF THE EMERGENCY ORGANIZATION

If it appears that an incident or condition may meet or exceed a predetermined value or condition specified as an Emergency Action Level in Emergency Implementing Procedure EI-1, "Emergency Classification and Actions," and PSEP Supplement 1 "POST-SHUTDOWN EMERGENCY PLAN Supplement 1 - EAL Wall Charts" then certain portions of this plan and specific procedures shall require implementation.

The Shift Manager will initially classify the emergency and ensure required notifications are made. The Shift Manager shall ensure that an overall assessment of the emergency is performed in order to determine the most appropriate classification and, based on this determination, activate portions of the emergency organization as necessary. The methodology used in activating the emergency organizations during each class of emergency is provided in the following sections:
6.1.1 Control Room Personnel

a. Should emergency conditions, either real or potential, arise, it is expected that the Shift Manager will initially be made aware of the situation by alarms, instrument readings, reports, etc. The Shift Manager shall ensure that the General Manager, Plant Operations or Duty Station Manager on backshift and weekends is immediately informed of any possible emergency situation.

b. The Shift Manager is responsible for ensuring the performance of the initial assessment of the emergency (e.g., Plant and spent fuel pool status, radiological conditions, etc.) in the following manner:

1. Determine the immediate actions necessary to be taken to ensure the safe and proper operation of the Plant.

2. If the situation requires activation of all or part of the Site Emergency Plan, the Shift Manager shall:

   (a) Initiate the applicable Emergency Implementing Procedures.

   (b) Initially classify the emergency.

   (c) Ensure the appropriate alarm is sounded.

   (d) Announce the location, type and classification of the emergency on the Plant public address system.

   (e) Notify the following personnel and agencies of the emergency condition(s): (Reference Emergency Implementing Procedure EI-3, "Communications and Notifications."). Message authentication may be used as deemed necessary.

   (1) Van Buren County

   (2) State of Michigan

   (3) NRC

   (4) The General Manager, Plant Operations or designated alternate (Duty Station Manager)
NOTE: While both pages of the notification form are not necessary for every notification, the two pages together include the elements listed in the following sections.

(f) Initial notification should consist of the following as appropriate:

(1) Name and telephone number (if needed).

(2) Location of incident.

(3) Date and time of incident.

(4) Emergency classification (Emergency Implementing Procedure EI-1, "Emergency Classification and Actions").

(5) Whether a release is taking/has taken place.

(6) The affected/potentially affected population.

(7) Recommended protective actions.

(g) Follow-up notification should consist of the following as appropriate:

(1) Name and telephone number (if needed).

(2) Location of incident.

(3) Date and time of incident.

(4) Emergency classification (EI-1).

(5) Type of actual or projected release (liquid or gaseous) and estimated duration/impact times.

(6) Estimate of amount or radioactive material released, points of release, and height of release (Emergency Implementing Procedure EI-6, "Offsite Dose Calculation and Recommendations for Protective Actions").

(7) Chemical and physical form of released material. Include estimates of the relative quantities and concentration of noble gas, iodine, and particulates (EI-6).
(8) Prevailing meteorological conditions (EI-6).

(9) Actual or projected dose rates of at the site boundary and the integrated dose rate at the site boundary (Emergency Implementing Procedures EI-6 and EI-9, "Offsite Radiological Monitoring").

(10) Projected dose rates and integrated dose rates at the projected peak and at 2, 5, and 10 miles from the site and the sectors affected.

(11) Estimate of surface contamination in Plant, onsite and offsite.

(12) Entergy Corporation emergency response actions underway.

(13) Recommended emergency actions, including protective measures.

(14) Requests for support from organizations.

(15) Prognosis for worsening or termination of event.

3. Due to the additional responsibilities assigned to the Shift Manager at the beginning of an emergency, the following actions are to be performed in the priority listed below:

(a) Ensure the safe operation of the Plant.

(b) Ensure that immediate notification requirements are met.

(c) Dispatch, in the event of radiological emergencies, Radiation Monitoring Teams, to designated analysis locations onsite and offsite.

(d) Perform additional emergency actions as time and conditions permit including accident assessment beyond that required for emergency classification.
6.1.2 Emergency Plant Manager

The Shift Manager will continue to perform the Command and Control actions of the Post-Shutdown Emergency Plan until relieved by the EOF Director. The Emergency Plant Manager reports to the EOF Emergency Director. When the EOF Director has taken Command and Control of the event and the TSC is Operational the Shift Manager and Control Room will report to the EPM. The EPM has the responsibility for command of all accident mitigation actions at the site and performs these duties from the Technical Support Center (TSC). Responsibilities include:

a. Assume command of the TSC and OSC and the onsite mitigation efforts
b. Provide information and recommendations to the ED regarding the classification of an emergency
c. Ensure timely ENS notifications
d. Perform accident assessment to prioritize mitigation actions.
e. Coordinate the activities of the CR, TSC and OSC
f. Direct personnel evacuation, assembly and accountability of non-essential personnel
g. Provide information and recommendations to the ED regarding plant activities
h. Advise the ED on plant conditions for classification and PAR determination
i. Direct the organization and coordination of repair corrective action teams
j. Direct onsite protective actions
k. Authorize emergency radiation exposure and issuance of KI to recommended personnel in the CR, TSC or OSC or to Security personnel
l. Make operational decisions involving the safety of the plant and its personnel and make recommendations to the Control Room Personnel
m. Initiate immediate corrective actions to limit or contain the emergency invoking the provisions of 10 CFR 50.54(x) if appropriate\(^1\)
o. Direct relocation to an alternate location
p. Integrate offsite responders with on-site response efforts when required
q. Perform emergency termination
r. Maintain Plant security

6.1.3 Emergency Director

The Emergency Director provides overall command and control of the emergency response. Responsibilities include:

a. Receive turnover from the SM/ED and assume command/control of EOF and activities outside the area controlled by the TSC
b. Direct the activation, operation and deactivation of the EOF
c. Determine to what extent the offsite and onsite emergency organization shall be activated
d. Upgrade the emergency classification level (cannot delegate)
e. Make Protective Action Recommendations (PAR) to offsite agencies (cannot delegate)
f. Direct and approve offsite notification to State and local agencies (cannot delegate)
g. Communicate within and between the emergency response facilities.
h. Ensure event information is communicated to other organizations (NRC, Entergy Corp, etc) to keep them informed of the emergency situation
i. Direct the activities of the EOF organization in support of the TSC and offsite response agencies (Counties, and the State of Michigan)
j. Direct protective actions for offsite monitoring teams, EOF ERO and offsite resources
k. Request assistance from offsite agencies, excluding requests for offsite medical/fire, security assistance (Coordinate request for Federal assistance through the State)
l. Authorize issuance of KI and radiation exposure in excess of 10CFR 20 limits for ERO members outside of the protected area
m. Conduct turnover of command and control to relief ED

n. Dispatch Palisades Plant liaisons to principal offsite emergency operations centers

o. Maintain adherence to the fitness for duty policy


In emergency situations, the Emergency Management and Homeland Security Division is responsible for coordinating the support of other state agencies and political subdivisions and obtaining the assistance of federal agencies as required.

The Emergency Management Division will provide the following emergency support:

a. Activation of the State Emergency Operations Center, as necessary

b. Communications, radiological monitoring, and other available support to the affected local government

c. Liaison with local, state, and federal agencies

6.1.5 Michigan Department of Environmental Quality, Radiological Protection Section

The Michigan Department of Environmental Quality, Radiological Protection Section is responsible for administering and directing radiation control programs and activities within the State of Michigan.

The Radiological Protection Section has the direct responsibility to provide the technical assistance necessary to evaluate the offsite consequences of a radiological incident, to provide protective action guidance to state and local authorities responsible for public safety, and to oversee offsite decontamination and reentry operations.

The Michigan Department of Community Health is responsible for coordinating emergency medical support as requested by the Michigan Department of Environmental Quality, Radiological Protection Section, or local health authorities.
6.1.6  Affected Counties: Van Buren County, Berrien County, and Allegan County

Emergency responsibilities of County Emergency Management include communication support to the responding county departments, providing warning and notification to the public, and assuring the continuation of vital services during the emergency.

6.2  ASSESSMENT ACTIONS

Effective coordination and direction of all portions of the emergency organization require almost continuous accident assessment during the course of the emergency. Each emergency class will require similar accident assessment methods; however, each classification imposes a different magnitude of assessment effort. In the following steps, the assessment actions to be taken for each emergency classification are outlined.

6.2.1  Assessment Actions for Unusual Events

The detection of an Unusual Event shall arise from exceeding a specific Emergency Action Level for this class. Detection of the event will come as a result of alarms, instrument readings, recognition through experience, or any combination thereof. The continuing assessment actions to be performed for this classification of emergency shall be in accordance with the Emergency Implementing Procedures and shall consist of the normal monitoring of Control Room and other Plant instrumentation and status indication until the situation is resolved. If a fire is the reason for the declaration of an Unusual Event, the Shift Manager will make continuing assessments based on his knowledge and experience on whether offsite firefighting assistance is needed.

6.2.2  Assessment Actions for Alerts

When an accident has been classified as an Alert by the Shift Manager, assessment actions shall be performed in accordance with the Emergency Implementing Procedures for an Alert.

These actions include:

- Accountability of onsite personnel.
- Staff augmentation, as needed.
- Increased surveillance of in-plant instrumentation.
d. Activation of appropriate emergency facilities.

e. Dispatch of shift personnel, if possible, to the identified problem area for confirmation and visual assessment.

f. Dispatch of onsite Radiation Monitoring Teams to monitor for possible release and to provide confirmation of correct accident classification.

g. If a radiological accident is occurring, surveillance of the in-plant instrumentation is necessary to obtain meteorological and radiological data required for calculating or estimating projected doses. This dose assessment activity shall continue until termination of the emergency in order that the updating of initial assessments may be provided to all concerned offsite agencies, the Shift Manager, and EOF Emergency Director. Emergency Implementing Procedures are provided to aid in a rapid, consistent projection of doses.

### 6.2.3 Assessment Actions for Site Area Emergencies

The assessment actions for the Site Area Emergency classification are similar to the actions for an Alert; however, due to the increased magnitude of the possible release of radioactive material, a significantly larger assessment will occur. The necessary personnel for this assessment effort shall be provided by mobilization of the onsite and offsite emergency organizations.

Specifically:

a. An increased amount of Plant instrumentation shall be monitored.

b. Radiological monitoring efforts shall be increased. Onsite and offsite radiological monitoring teams will be dispatched. In addition to beta-gamma field measurements, change out of environmental thermoluminescent dosimeters (TLD), air sampling, and collection of the environmental media for assessment of radioactive material transport and deposition may also be performed.
c. Dose assessment activities will be conducted more frequently with an increased emphasis on dose projections for use as a factor in determining the necessity for protective actions for the public. Radiological (e.g., TLDs) and meteorological instrumentation readings shall be used to project the dose rate at predetermined distances from the Plant, and to determine the integrated dose received. In reporting the dose projections to offsite agencies, the dose rate, dose, and the basis for the time used for the dose estimate shall always be provided. Any confirmation of dose rates by offsite Radiation Monitoring Teams shall be reflected in reporting and/or revising the dose estimate information provided to offsite agencies.

Dose projections shall be considered with respect to the Environmental Protection Agency Protective Action Guides (Table 6-1). Reporting of assessments to offsite authorities shall include the relationship of the dose to these guidelines. Emergency Implementing Procedures will be provided for recording all pertinent information.

6.2.4 Assessment Actions for General Emergencies

Assessment actions for the General Emergency classification shall be the same as for the Site Area Emergency with some possible shift of emphasis to greater offsite radiation monitoring and dose projections extending to distances farther from the site.

6.2.5 Estimation of Offsite Dose

The Emergency Implementing Procedures (reference Emergency Implementing Procedure EI-6, "Offsite Dose Calculation and Recommendations for Protective Actions") contain several methods for calculating offsite dose to population from accidental releases. These methods include:

a. Computer Method - Implements the above method using a personal computer to speed the process.


c. Segmented Gaussian - Variable trajectory Plume model.

The above methods have been developed in cooperation with state agencies and provide methods for rapid, accurate dose estimates.
6.2.6 Data Reporting, Recording, and Analysis

Specially assigned personnel at all designated emergency centers have the responsibility for collecting, recording, and analyzing data transmitted to them. Preplanned emergency logs and procedures are provided to ensure that all necessary information is received and recorded. Included will be:

a. Data from emergency survey teams as available. This will be recorded to define the affected environs.

b. Evacuated Plant personnel will be questioned to gather all possible information on observed conditions.

c. In addition to incoming data, a log of events occurring at the emergency centers (TSC, OSC, EOF) and Control Room will be kept. Individual sections of this log will record such items as personnel exposure, contamination levels, communications, and check-off lists.

6.2.7 Interviewing Evacuees or Other Witnesses

Information from personnel evacuating the site may be collected at the evacuation control point as directed by the Emergency Plant Manager. This information shall be reported to the TSC when possible.

6.2.8 Assessment Results Communications

The EOF Emergency Director is notified of assessment results from the site and from offsite support agencies. The EOF Emergency Director, in turn, is responsible for communication back to those groups so that emergency measures may be modified as necessary.

6.3 CORRECTIVE ACTIONS

Detailed operating procedures are available to the operators for use during emergencies as well as during normal operations. Specific emergency procedures are provided to assist the operators in placing the Plant in a safe condition and taking the necessary supplemental corrective actions. In addition, operations personnel are trained in the operation of the Plant systems and their associated procedures and are, therefore, capable of taking appropriate corrective actions based on their training, knowledge, and experience.
Corrective actions shall be planned events that are taken to lessen or terminate the emergency situation. Planned radioactive releases or corrective actions that may result in a radioactive release shall be evaluated by the EOF Emergency Director, and his staff, as far in advance of the event as is possible. Such events and data pertaining to the release shall be reported to the appropriate offsite emergency response organization and/or agencies.

6.3.1 Fire Control

Provisions for firefighting and control are described in the Fire Protection Implementing Procedures. The Covert Township Fire Department and the South Haven Fire Department provide Offsite backup firefighting support.

In-plant firefighting equipment ranges from portable extinguishers to automatic sprinkler control. The Plant emergency organization includes a trained fire brigade for immediate response to any fire situation.

The Van Buren Dispatch, via 911, is first to be called. They are required to dispatch both Covert and South Haven Fire Departments. These departments consist of personnel trained for firefighting, including situations involving radioactive contamination. Additional support is available from fire departments in nearby Allegan and Berrien Counties through mutual aid agreements. These fire departments are also trained and equipped for rescue work and control of hazardous gas leaks, including chlorine gas.

6.3.2 Repair and Damage Control

The Palisades Plant staff is comprised of technically and vocationally trained personnel capable of improvising necessary repair and control measures for correction of an emergency situation. Wherever possible, corrective measures are anticipated and included in emergency and operating procedures.

6.3.3 System Control

System design is aimed at automatic corrective actions, such as system isolation, whenever operating parameters become abnormal. Operating procedures are written for manual control of these same situations, should automatic features fail.
6.4 PROTECTIVE ACTIONS

Protective actions are emergency measures taken during or after an emergency situation that are intended to minimize or eliminate the hazard to the health and safety of the general public and/or Plant personnel. Such actions taken onsite are the responsibility of the Entergy Corporation, while those offsite actions are the responsibility of the State of Michigan and local political jurisdictions. Protective Action Guides for the Environmental Protection Agency and the State of Michigan are shown on Tables 6-1 and 6-2. All visitors to the site protected area shall be either escorted by an employee knowledgeable as to the Emergency Plan response actions or shall receive training on actions required by them during an emergency.

6.4.1 Sheltering, Evacuation, Personnel Accountability

During an emergency, the relocation of personnel may be required in order to prevent or minimize exposure to radiation and radioactive materials. The following steps present information on policies applicable to such situations:

a. Plant Site
   1. Notification

   All persons onsite at the time of an Alert, Site Area, or General Emergency shall be notified of the emergency by a two-minute steady siren and an announcement over the public address system in the assembly areas. Notification of an Unusual Event should be over the Plant public address system. For the Alert and above, personnel shall be instructed to report to assembly areas for accountability, monitoring, and possible evacuation. Personnel accountability shall be completed in approximately 30 minutes. Specific assembly areas are designated in the Emergency Implementing Procedures. All personnel shall be trained in the locations of the assembly areas, or be escorted by an employee who is so trained. At the assembly area, members of the emergency organization shall direct efforts per the applicable Emergency Implementing Procedure. These procedures shall provide contingency plans for weather, traffic, and radiological impediments to evacuation.
2. Site Access Control

Provisions for control of access to the Palisades site have been included in the Safeguards Contingency Procedures to take care of personnel entering for business purposes and for those who might inadvertently enter. Access to the exclusion areas of the Plant is controlled by the Plant security force. Offsite support is provided by local and/or state law enforcement personnel.

3. Monitoring of Evacuees

A combination of checking electronic dosimeters and questioning of evacuees will be used to initially determine if there were any high external exposures involved in the emergency. For any known or suspected high exposures, the permanent dosimeters will be read as soon as possible and further investigation will be conducted to determine the amount of exposure or necessary actions to be taken.

Monitoring for contamination and internal ingestion at the assembly areas will be accomplished by using portable instrumentation and questioning. Priority for decontamination will be given persons found with the highest levels of contamination. Any persons suspected or known to have ingested radioactivity will be whole-body counted, as soon as conditions permit, to assess their internal exposure. Decontamination supplies for evacuees shall be available.

4. Egress Routes

Three potential routes are available: Plant access road to the east and the beach to the north or south. Unless conditions dictate otherwise, the Plant access road to the east will be the primary evacuation route. An evacuation procedure shall require a personnel accountability check at the appropriate control point/monitoring station. Security officers shall be dispatched by the Emergency Plant Manager to stop ingress from the access roads and to assist Plant personnel evacuating the site. A control point/monitoring station shall be established along the egress route in an area expected to be outside the path of possible radioactive releases.
b. Offsite Areas

1. Agency Responsibilities

The Palisades Nuclear Plant is located in Van Buren County (Covert Township), and the 10-mile emergency planning zone includes portions of Allegan and Berrien counties, including the city of South Haven. In a radiological emergency, operational control will be from the State Emergency Operations Center (SEOC) in Lansing, with local operation control from the county EOCs. Each county has an Emergency Preparedness Plan which is a legal document in compliance with Act 390 of the Michigan Public Acts of 1976.

The Michigan Department of Environmental Quality is responsible for directing radiation control programs and emergency responses within the state as stated in Act 368, Michigan Public Acts of 1978 and the Michigan Emergency Management Plan (MEMP), and the Governor's Executive Order 1996-1.

The Deputy State Director of Emergency Management of the Michigan State Police provides overall coordination of emergency operations, including the use of all state government resources upon proclamation of a State of Disaster, or State of Emergency by the Governor. The Michigan State Police will coordinate the disaster response activities of all departments of State Government.

2. Notification and Response

The local government will provide notification of the general public involved and define and identify this population. The state government will give detailed directions for protection of this population, including provisions for evacuation of personnel from affected sectors of the environs if necessary.
3. Protective Actions

Protective action procedures are covered in the Michigan Emergency Preparedness Plan and the Van Buren, Allegan, and Berrien County Emergency Plans. In summary, these plans contain the following:

(a) A public warning system composed of two components, alert and notification.

   (1) The alert component is comprised of a siren system which provides coverage for a 10 mile radius around the plant, and allows the resident and transient populations to be warned within 15 minutes of the issuance of a protective action.

   (2) The notification component consists of several local radio stations that broadcast appropriate initial and follow-up messages on protective actions to be taken.

   (3) If a backup means of notification is necessary, other television/radio communications, vehicles with mobile public address systems (Route Alerting) and other means as necessary can be utilized.

(b) Predesignated areas are based on continuous mile circles from the Palisades Plant. These areas will be used by the responsible authorities in ordering protective actions.

(c) A communication system has been established for emergency notification of offsite agencies having protective response assignments.

(d) Emergency response and evacuation plans for offsite areas have been formulated by state and local agencies. Evacuation clear times for areas near Palisades are shown in Appendix C.
6.4.2 Contamination Control Measures

This section describes the provisions for preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other contaminable surfaces.

a. Plant Area

Access to the owner-controlled area shall be controlled. In addition, within the owner-controlled area, there are no areas for producing agricultural products. In-plant contamination control shall be exercised in accordance with approved radiation protection procedures.

b. Offsite Areas

Criteria for preventing or minimizing ingestion of, or exposure to, contaminated materials or areas is contained in the Michigan Emergency Management Plan.

Included are:

1. Isolation or quarantine and area access control.
2. Control of the distribution of affected commercial agricultural crops.
3. Control of public water supplies.
4. Means for providing advisory information regarding the use of affected home food and water supplies.
5. Criteria for permitting return to normal use.

Action levels and responsibilities for execution of these measures are included. Contaminated areas will be barricaded and posted to control access until time allows for decontamination activities. Michigan Department of Environmental Quality representatives will be responsible for these actions and will be assisted by other Michigan State Departments and/or Entergy Corporation upon request.
6.5 AID TO AFFECTED PERSONNEL

6.5.1 Emergency Personnel Exposure Criteria

Although an emergency situation transcends the normal requirements for limiting exposure, there are suggested levels of exposure acceptable in emergencies. Even under these conditions, every reasonable effort to minimize exposure must be made and personnel must be provided with appropriate monitoring devices. Three categories of risk versus benefit must be considered:

a. Saving of human life and reduction of injury.

b. Protection of health and safety of the public.

c. Protection of property.

In order to avoid restricting actions that may be necessary to save lives, it shall be left to the judgment of the individual to determine the amount of exposure that he will accept to perform an emergency action that will result in the saving of human life. Emergency team members are instructed in radiation effects and the risks involved for emergency doses. Basic guidelines provided to emergency team members are the EPA recommendations contained in Table 6-3. These exposures must be authorized by the Emergency Plant Manager based on the recommendation of the TSC Rad Coordinator.

The Radiation Protection Procedures shall be followed. In the event emergency exposure limits are approved, the same administrative methods for dose control shall be used with the higher emergency exposure limits.

Once the emergency condition has been mitigated, steps shall be taken to recover from the incident. All actions from this point shall be preplanned in order to limit exposures. Normal exposure limits will be used, areas will be controlled, and exposure of personnel documented.
6.5.2 Decontamination and First Aid

Onsite personnel decontamination facilities for emergency conditions are fully equipped with decontamination material. The decontamination facility at Palisades Plant is located at the access control area of the auxiliary building. The decontamination facility consists of a shower, sink, and first-aid kits. Decontamination supplies such as various decontamination solutions and surgical brushes will be stored in the decontamination facility. Emergency equipment located around the site is available and includes personnel monitoring equipment. There are also additional personnel monitoring equipment located at the access control area including dosimeters, and high and low-range survey instruments. A comprehensive list of materials and equipment available for use can be found in Appendix E.

In an emergency situation, decontamination is the responsibility of the Radiation Monitoring Team. When decontamination of an area or equipment is required, personnel from Operations, Maintenance, and Radiation Protection will work jointly.

Medical first-aid training is provided to designated members of the Plant emergency organization that, as a minimum, includes the Red Cross Multimedia course or equivalent, combined with the American Heart Association Cardiopulmonary Resuscitation course. This training for members of the Plant staff also includes methods of handling contaminated patients and/or injuries. At least one person on each operating shift is required to have this first-aid training.

The Covert Township Fire Department ambulance personnel and the South Haven Area Emergency Services ambulance staff are trained in caring for radiologically contaminated victims.

6.5.3 Medical Treatment

In the event of a serious accident at Palisades Plant requiring medical treatment, agreements have been made with the area hospitals. These hospitals are:

a. South Haven Community Hospital, South Haven, Michigan.

b. Lakeland Regional Medical Center, St Joseph, Michigan.
### TABLE 6-1
ENVIRONMENTAL PROTECTION AGENCY - PROTECTIVE ACTION GUIDES

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Projected Dose</td>
</tr>
<tr>
<td></td>
<td>Whichever is more limiting</td>
</tr>
<tr>
<td>Intervention Level *</td>
<td>0.5 rem (CEDE)</td>
</tr>
<tr>
<td></td>
<td>Whole body or any set of organs</td>
</tr>
<tr>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td>5 rem (CDE) any single organ</td>
</tr>
</tbody>
</table>

**NOTE:** Specific PAs are not provided due to the wide variety of actions that could be taken.
### TABLE 6-2
PROTECTIVE ACTION GUIDES (PAGs) & OBJECTIVES

#### Early Plume PAGs (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG Projected Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evacuation (or sheltering)</td>
<td>1-5 rem TEDE</td>
<td>Evacuating (or for some situations, sheltering) should normally be initiated at the lower limits.</td>
</tr>
<tr>
<td></td>
<td>5-25 rem thyroid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-500 rem skin</td>
<td></td>
</tr>
<tr>
<td>Administration of stable iodine</td>
<td>25 rem thyroid</td>
<td>Requires approval of State Medical Officials</td>
</tr>
</tbody>
</table>

#### Relocation PAGs (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Protective Action</th>
<th>PAG Projected 1st Year Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocate the general population</td>
<td>≥ 2 rem TEDE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 100 rem beta skin dose</td>
<td></td>
</tr>
<tr>
<td>Apply simple dose reduction techniques</td>
<td>&lt; 2 rem TEDE</td>
<td>These protective actions should be taken to reduce doses to as low as practicable levels</td>
</tr>
</tbody>
</table>

#### Long Term Objectives (Source - EPA 400-R-92-001)

<table>
<thead>
<tr>
<th>Long Term Objectives</th>
<th>Period</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any single year (2 through 50)</td>
<td>0.5 rem TEDE</td>
</tr>
<tr>
<td></td>
<td>50 Years</td>
<td>5 rem TEDE</td>
</tr>
</tbody>
</table>
### TABLE 6-3
GUIDANCE ON DOSE LIMITS FOR WORKERS PERFORMING EMERGENCY SERVICES

<table>
<thead>
<tr>
<th>Dose Limit&lt;sup&gt;a&lt;/sup&gt; (rem)</th>
<th>Activity</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>all</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>protecting valuable property</td>
<td>lower dose not practicable</td>
</tr>
<tr>
<td>25</td>
<td>lifesaving or protection of large populations</td>
<td>lower dose not practicable</td>
</tr>
<tr>
<td>&gt;25</td>
<td>lifesaving or protection of large populations</td>
<td>only on a voluntary basis to persons fully aware of the risks involved</td>
</tr>
</tbody>
</table>

<sup>a</sup>Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas by members of the public during the intermediate phase of the incident.
FIGURE 6-1
PALISADES PLANT NORMAL NOTIFICATION CHAIN

Control Room or Emergency Operations Facility
Communicator

If Needed Notifications

Covert Fire Department
Ambulance Services
Hospitals
Van Buren State Park Superintendent
Palisades Park Superintendent
Federal Aviation Administration
Department of Energy
US Coast Guard
South Haven Water Department
Berrien County Sheriff
Allegan County Sheriff
Entergy
Public Affairs

Required Notifications

Van Buren County Sheriff*
Michigan State Police
Emergency Management Division
NRC
(Note: Communicator located in TSC)
Duty Station Manager

*Not a required notification if the State Emergency Operations Center is activated.
7.0  EMERGENCY FACILITIES AND EQUIPMENT

This section describes the equipment and facilities that are utilized to:

a. Assess the extent of accident hazards.

b. Mobilize the resources required to mitigate the consequences of an accident.

c. Provide protection to Plant personnel.

d. Support accident mitigation operations.

e. Provide immediate care for injured/contaminated personnel.

f. Effect damage control.

7.1  ONSITE EMERGENCY FACILITIES

Onsite emergency support centers include the Control Room and two other areas at Palisades. These areas are designated as the Technical Support Center and the Operations Support Center as described below.

7.1.1  Control Room

The principal emergency control center is the Plant's Control Room. Operations personnel will report to the Control Room and control all evolutions from this central location. Self-Contained Breathing Apparatuses are located in or near the Control Room for personnel protection from inhalation.
7.1.2 Technical Support Center

The Technical Support Center is located in the area immediately adjacent to the Control Room and includes the Shift Manager’s office, the viewing gallery hallway, and the adjacent open work area. The TSC will accommodate personnel who will provide technical support to Operations and Control Room personnel during emergency conditions. Complete record keeping and communications capabilities have been installed. All necessary equipment, furnishings, and documents are stored in the immediate area and are readily available for use. The TSC may be activated for Unusual Events, and will be activated for Alert, Site Area Emergency, and General Emergency conditions.

Further details concerning staffing, equipment, furnishings, procedures, and activation are outlined in the Emergency Implementing Procedures.

Habitability of the Control Room and the TSC is assured by the filtered ventilation system that serves this area. In addition, Self-Contained Breathing Apparatus (SCBA) is provided for up to eight individuals. An area radiation monitor in the viewing gallery area reads out in the Control Room to provide external dose rate data. Air sampling and analysis equipment are provided in the emergency equipment kits to monitor airborne radioactivity levels. Personal radiation dosimetry issued to some site personnel and visitors will provide individual radiation dose assessment data. In the event that the Technical Support Center is not habitable, an alternate center may be established at the OSC, Mechanical Maintenance Shop, or other site buildings.
7.1.3 Operations Support Center (OSC)

The Operations Support Center (OSC) is located near the men's locker room in the Service Building that is connected to the rest of the Plant by hallways.

The function of the OSC is to assemble and coordinate necessary personnel from Chemistry, Radiation Protection, Operations (Non-Certified Operators), I&C, Electrical, and Mechanical. These groups will be dispatched for specific jobs as directed by the TSC.

Additional details concerning staffing, equipment, furnishings, procedures, and activation are outlined in the Emergency Implementing Procedures.

Habitability of the OSC is verified using available emergency kit equipment. Equipment is provided for measuring external dose rates and airborne radioactive levels. The OSC ventilation system is independent of the Auxiliary Building system. This minimizes airborne contamination as a result of events in the Auxiliary Building. In the event the OSC should not be habitable, alternate locations such as the Mechanical Maintenance Shop or permanent construction buildings are available for use.

A maintenance kit containing only maintenance supplies is kept in the men's locker room.

7.2 EMERGENCY OPERATIONS FACILITY (EOF)

The Palisades Emergency Operations Facility (EOF) is located in downtown Benton Harbor, approximately 16 miles South Southwest from the Plant. The EOF assumes overall responsibility for Entergy Corporation emergency response. The EOF is designed to provide assistance in the decision-making process to protect the public health and safety, and to control radiological monitoring teams offsite. The EOF may be activated for the Unusual Event, and shall be fully activated for the Alert, Site Area Emergency, and General Emergency categories.

To assure the safety of the staff, equipment is provided for measuring external dose rates, and airborne radioactivity levels.

The staff is comprised of personnel from the Plant. In addition, liaison personnel from the county, state, and federal governments will also be present in the EOF.
The EOF has ready access to up-to-date Plant records, procedures, and emergency plans needed to exercise overall utility resources management and for recovery management. Hard copy records stored and maintained at the EOF include, but are not limited to:

- Palisades Technical Specifications
- Palisades Operating Procedures
- Palisades Final Safety Analysis Report
- Palisades Abnormal Operating Procedures
- Palisades Post-Shutdown Emergency Plan
- Palisades Emergency Implementing Procedures
- Michigan Emergency Management Plan
- Van Buren County Emergency Plan
- Berrien County Emergency Plan
- Allegan County Emergency Plan
- Palisades Piping and Instrument Diagrams

Other up-to-date records including radiological records, procedures, drawings, schematics, and diagrams are readily available via transmittal to the EOF.

The EOF shall provide analysis of field monitoring data, and coordination for the collection sample media.

7.3 COUNTY AND STATE EMERGENCY CENTERS

7.3.1 County Emergency Operations Centers

Potential emergencies could directly impact those individuals living within the 10-Mile Emergency Planning Zone, and indirectly affect property within the 50-Mile Emergency Planning Zone. Therefore, emergency planning efforts have been initiated by those affected counties within the 10-Mile Emergency Planning Zone. The affected counties are: Van Buren, Berrien, and Allegan Counties.

Each of these counties has established and maintains an Emergency Operations Center (EOC). These centers are located as follows:

a. Van Buren County Courthouse Annex
   Paw Paw, Michigan

b. Berrien County Sheriff's Department
   Benton Harbor, Michigan

c. Allegan Central Dispatch
   Allegan, Michigan

7.3.2 State Emergency Operations Center
When it is determined that personnel and resources of state government are needed to support disaster operations of affected local governments, the State Emergency Operations Center (SEOC) is staffed in Lansing. This facility is staffed at any level of emergency depending on potential for required state response.

The Michigan State Field Team Center location will be determined at the time of the incident by personnel at the State EOC. That facility is equipped with the necessary communications control capabilities (when staffed), from which the State will dispatch offsite-monitoring teams. All decision makers remain in Lansing.

7.4 JOINT INFORMATION CENTER (JIC)

A Joint Information Center (JIC) will be established at the combined EOF/JIC located at 330 W Main, Benton Harbor. The JIC will be staffed by public information representatives of the utility, state, county, and federal governments. The Plant Communications Specialist will be located in this facility upon its activation.

7.5 COMMUNICATIONS EQUIPMENT

The members of the emergency organizations require correct and up-to-date information relevant to the potential or real emergency condition. Therefore, the communications systems that will be used by the emergency organizations must meet the following basic criteria:

a. Provide for prompt initial notification.

b. Maintain reliability.

c. Provide for alternate methods of communications.

7.5.1 Routine Communications System

Communications equipment available for offsite use include:

a. Commercial telephones - separate outside lines.

b. Intracompany telephone system.

c. State Police Radio - through Security Department.

d. Emergency Network System telephone to NRC.

e. Commercial telephone to Van Buren County Sheriff's Department, Paw Paw.
f. Commercial telephone to State Police Operation Center, Lansing.

g. Power failure phones in major onsite response centers (Control Room, TSC, OSC).

h. Satellite phones in major onsite response centers (Control Room, TSC, OSC, EOF).

Table 7-1 summarizes communications resources.

7.6 ASSESSMENT EQUIPMENT SYSTEMS

7.6.1 Radiation Monitoring System

The Radiation Monitoring System measures, indicates, and records the presence and level of radiation, and alerts Plant personnel to abnormal levels of radioactivity, thereby contributing to personnel protection and proper operation of Plant equipment.

The system consists of permanently installed, continuous monitoring devices together with a program and provisions for specific sample collections and laboratory analyses. The system is designed to provide information for use in evaluating the radiological consequences of normal Plant operation, anticipated operational occurrences, and accidents. Control actions are initiated on the required systems when radiation levels exceed predetermined amounts.

These monitoring functions are performed by the following subsystems and programs:

a. Area Radiation Monitoring

b. Liquid Radiation Monitoring

c. Airborne Radiation Monitoring
   1. Gas
   2. Particulate
   3. Iodine
Data from these subsystems are displayed by readouts, annunciators, and recorders located in the Control Room. (Portable airborne and area monitors are capable of being plugged into receptacles throughout the Plant.) Instrumentation power for the Radiation Monitoring System will be supplied from a reliable source.

d. Area Radiation Monitors

Area radiation monitors are primarily for the purpose of measuring radiation dose rates for protection of Plant personnel and providing supporting data to the surveillance of Plant radiation levels.

Monitor alarm setpoints depend on the normal background radiation at the detector location and the calculated levels for abnormal conditions. The monitors will operate within the range of normal environmental conditions applicable to their locations.

Monitored points within the Plant are in areas where personnel exposure to radiation is most likely, and at appropriate access control boundaries. Readouts and alarms are provided both locally and in the Control Room.

e. Airborne Radiation Monitors

The radiation monitors located in the gaseous release paths monitor radioactivity with sufficient sensitivity to demonstrate compliance with 10 CFR 20 limits. They also provide sampling capability, ie, removable filters and/or gas sample stop valves. Samples analyzed with laboratory equipment permit evaluation of compliance to more restrictive regulations and provide data required.

f. Liquid Radiation Monitors

The monitoring systems consist of fixed detectors that display radiation levels in the Control Room.

Testing and maintenance features, such as remotely operated check sources, flushing connections, and cutoff valves are included for periodic system check and/or calibration. The liquid radiation monitors are designed to ensure that liquid effluent releases are maintained below the DAC values of 10 CFR 20 by the use of alarms and automatic shutoff features.
7.6.2 Meteorology

Onsite meteorological data is provided by a meteorological tower located in the northeast sector of the site. This system is primarily concerned with providing data for estimating the actual or potential effects of an accidental, airborne release of radioactivity.

The following data is available:

a. Wind direction and speed at 10 and 60 meters.

b. Stability class.

This data is transmitted to the Control Room at 15-minute averages. A remote interrogation capability is available. Details of the system as it applies to emergency offsite dose calculation are provided in Emergency Implementing Procedure EI-6.7, "Plant Site Meteorological System." Details on the system in general are provided in "Palisades Meteorological Monitoring Project Plan."

Backup meteorological data can be obtained through use of Emergency Implementing Procedure EI-6.8, "Backup and Supplemental Meteorology."

Severe weather warnings are provided to the Plant by a private consultant. Predictions of sky to ground lightening, tornados, and wind speeds in excess of 40 mph are reported to the Control Room.

7.6.3 Fire Protection System

The Fire Protection System, including monitoring devices and fire suppression equipment, is completely detailed in the Fire Protection Implementing Procedures.
7.7 OFFSITE MONITORING

7.7.1 Radiological Monitoring

Radiological Monitoring Teams shall be activated at the direction of the Shift Manager or OSC Manager. If the OSC has not been activated, notification should be made directly to the Radiation Protection Office. Monitoring teams should consist of two Radiation Protection members. The emergency vehicle shall provide transportation and be equipped with radio communications and equipment suitable for monitoring and/or sampling gaseous or liquid releases. The equipment and procedures supplied to the offsite team(s) provide the capability to sample for radiiodine in concentration as low as 10^{-7} micro-curies per cubic centimeter. Following staff augmentation, the estimated deployment time for a monitoring team is 30 minutes.

a. The Environmental Monitoring Program provides a number of TLDs and airborne particulate sampling stations that are valuable for long-term appraisal of integrated dose.

b. The Michigan Department of Environmental Quality provides offsite field monitoring capability within approximately three hours.

c. The State Police Emergency Management Division can request aerial and field monitoring through the Department of Energy.

7.7.2 Laboratory Facilities

The Plant laboratory and counting rooms have the capability to perform the analyses required under emergency conditions. The Michigan Department of Environmental Quality, Radiological Protection Section operates a radiological laboratory in Lansing.

Palisades Plant, and the DC Cook Nuclear Plant, may exchange services for radiological laboratory analyses, laboratory boron analyses, and backup dispersion meteorology information.

GEL Laboratory has agreed to provide the following services: collecting, analyzing, evaluating, and reporting on appropriate samples as needed for protective action information. GEL Laboratory maintains a laboratory in Charleston, South Carolina which has the capability to perform chemical and radiological analyses.
7.8 FIRST AID AND MEDICAL CARE

7.8.1 First Aid and Medical Care

At least one person having American Red Cross Multimedia First Aid or equivalent will be available onsite at all times.

Specialized training is given for the treatment and handling of contaminated personnel and injuries.

Emergency call lists for ambulance service and medical facilities are kept current in the Emergency Implementing Procedures.

7.8.2 First Aid Equipment

There are first aid kits in appropriate areas of the Plant. Accountability and inventory checks are performed quarterly and after use.

7.8.3 Decontamination and First Aid

Personnel decontamination facilities for emergency conditions include showers, sinks, cleaning agents, and first aid kits, which are maintained near the Radiation Protection access control area. These supplies include special materials and Personnel Decontamination Procedures. Additional personnel decontamination equipment and facilities shall be available for decontamination of evacuees.

7.8.4 Medical Transportation

Company vehicles maintained onsite and/or private vehicles can be used to transport injured and/or contaminated personnel for medical treatment. In addition, ambulances are available from the Covert and South Haven Fire Departments, depending on the severity of the situation.

7.8.5 Medical Treatment

South Haven Community Hospital and Lakeland Regional Medical Center/St Joseph, have agreed to accept contaminated, injured patients.
7.8.6 Use of Protective Equipment and Supplies

Listings by general category of typical emergency protective equipment and supplies that are stored and maintained for emergency purposes are contained in Appendix E of the Plan. Additional protective actions considered as measures for minimizing radiological exposure and contamination of Plant personnel include use of protective equipment and clothing as described below:

a. Individual Respiratory Protection

Respiratory protection devices will be issued when necessary to significantly reduce the internal exposure to radionuclides. Self-Contained Breathing Apparatus will also be used in emergencies involving smoke, gases, oxygen deficient atmospheres, or unknown conditions. Both Self-Contained Breathing Apparatus and air-purifying type full-face respirators are maintained in or near the Control Room, and a larger supply of this equipment is available at the Radiation Protection area in access control. Respiratory protection devices will be issued to survey teams, rescue teams, and other personnel required to be in areas of suspected or known high airborne radioactivity. A reserve breathing air supply that is of a rate sufficient to support Control Room personnel for an extended period of time is available. In addition to breathing apparatus, thyroid-blocking agents (i.e., potassium iodide) will be dispensed for onsite personnel in accordance with Emergency Implementing Procedures.
b. Protective Clothing

Supplies of this apparel include coveralls, rubber gloves, shoe covers and boots, caps and hoods, and plastic suits. Inventories are maintained for normal Plant use in access control and in the stockroom.

Additional supplies of protective clothing are in the emergency kits. This clothing will be issued to survey teams, rescue teams, and other personnel required to enter known or suspect areas of radioactive contamination. It will also be issued to persons required to work in or occupy contaminated areas. For emergency conditions, normal street clothing is considered as protective apparel, which is supplemented as necessary to protect skin surfaces, and which can be cleaned or discarded later. Protective clothing is distributed offsite only to members of those support agencies required to occupy contaminated areas for some purpose. In this event, Entergy Corporation will provide supplies to those people as available.

c. Breathing Air

A local supplier of compressed air is capable of providing emergency air cylinders on a 24-hour basis.
### TABLE 7-1
PALISADES PSEP COMMUNICATIONS MATRIX

<table>
<thead>
<tr>
<th>Control Room</th>
<th>TSC</th>
<th>OSC</th>
<th>EOF</th>
<th>State EOC</th>
<th>Van Buren EOC</th>
<th>NRC</th>
<th>Offsite Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSC</td>
<td>1. Intp Phone 2. Co Network 1. SP Phone 2. Intp Phone</td>
<td>1. SP Phone 2. Intp Phone</td>
<td>1. Intp Phone 2. Radio³</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>1. Radio³ 2. Com Phone</td>
</tr>
<tr>
<td>NRC</td>
<td>1. ENS 2. Com Phone</td>
<td>1. ENS 2. Com Phone</td>
<td>NR</td>
<td>1. ENS 2. Com Phone</td>
<td>NR</td>
<td>NR</td>
<td></td>
</tr>
<tr>
<td>Offsite Teams</td>
<td>NR</td>
<td>NR</td>
<td>1. Radio³ 2. Com Phone</td>
<td>1. Radio³ 2. Com Phone</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

**Notes:**
- ¹Control Room/EOF (Located in Control Room)
- ²Plant Security Radio (in CAS & SAS/ Paw Paw State Police (backshifts & weekends))
- ³Radiation Protection Radio Network
- ENS - Emergency Notification System
- Intp Phone - Intraplant Telephone System
- SP Phone - Sound Powered Phone
- Ded Circuit - Dedicated Telephone Circuit (Digital/VOIP)
- Radio - ¹Control Room/EOF (Located in Control Room)
- Com Phone - Commercial Telephone
- Co Network - Palisades Telephone Network
- LEIN - Michigan State Police Communication System
- NR - Not Required
## TABLE 7-1

**PALISADES SEP COMMUNICATIONS MATRIX**

**BACKUP PHONE NUMBERS AND METHODS**

1. **State of Michigan**
   
   a. 517-241-8000  
   b. 517-332-2521  
   c. Security Radio

2. **Van Buren County Sheriff**
   
   a. 269-657-2058  
   b. 269-657-3101

3. **NRC**
   
   a. 301-816-5100  
   b. 301-951-0550  
   c. 301-415-0550
8.0 MAINTAINING EMERGENCY PREPAREDNESS

Palisades Plant shall maintain the Post-Shutdown Emergency Plan and the Palisades Nuclear Plant Emergency Implementing Procedures as two separate documents. It is intended that this Post-Shutdown Emergency Plan, although considered part of Palisades Nuclear Power Plant's Final Safety Analysis Report (FSAR), be maintained as a separate document.

The Site Vice President is the individual with overall authority and responsibility for the Site Emergency Preparedness.

In order to meet the constantly changing conditions, methods have been implemented to ensure that the Post-Shutdown Emergency Plan and Implementing Procedures remain effective over the life of the Plant. Efforts shall be made to assure continuous emergency preparedness and operational readiness among Entergy personnel and the offsite response agencies and organizations.

8.1 ORGANIZATION PREPAREDNESS

8.1.1 Training

Palisades Plant personnel, including non-permanent personnel, will receive training pertinent to the Post-Shutdown Emergency Plan and Implementing Procedures. Persons assigned specific responsibilities during an emergency will receive additional training appropriate to their respective assignments. The responsibility for training is that of the Training Manager. He may delegate specialty-training responsibilities to personnel qualified to perform such training, for example, State or County training personnel. Governance of Emergency Response Organization Training for Entergy personnel is provided by Procedure P-EN-TQ-110, "Emergency Response Organization Training." This procedure describes the responsibilities for conducting and administering initial and continuing emergency preparedness training; provides clarification and details to implement a remediation process; and follows the guidance of P-EN-TQ-201,"Systematic Approach to Training Process," and P-EN-EP-308, "Emergency Planning Critiques."
8.1.2 Drills and Exercises

Members of the operating staff need to be familiar with their specific duties and responsibilities in the event of an accident at the Palisades Plant. To accomplish this, periodic drills and exercises will be conducted to test the state of emergency preparedness. The prime objective of the drills and exercise is to verify emergency preparedness of participating personnel, organizations, and agencies.

Each drill and exercise will be conducted to meet the following objectives:

a. Ensure that the participants are familiar with their respective duties and responsibilities.

b. Verify the adequacy of the Palisades Plant Post-Shutdown Emergency Plan and the methods used in the Implementing Procedures.

c. Test communication networks and systems.

d. Check the adequacy of emergency supplies and equipment.

e. Verify the operability of emergency equipment.

f. Designed to allow for freeplay for decision making.

Emergency Planning will ensure that drills and exercises are conducted as specified in this Plan.

Scheduled drills and exercises will be held involving appropriate offsite as well as onsite emergency personnel, organizations, and agencies. These drills and exercises will be conducted to simulate actual emergency conditions. Drill scenarios will be prepared that involve participation of several emergency teams and will include specific parts of the onsite and offsite emergency organizations such as state, county, and federal organizations, and local services support personnel and organizations. Offsite emergency planning personnel will be given advance notice of the schedule date of the drill or exercise, although the actual details shall be kept confidential from Offsite Response Players. Official observers will be provided with materials in accordance with their requirements.
Recommendations for revisions to the Palisades Nuclear Power Plant Post-Shutdown Emergency Plan and/or Implementing Procedures and/or upgrading of emergency equipment and supplies as a result of a drill or exercise will be forwarded to Emergency Planning by observers and participants for inclusion in a formal critique. After review, recommendations will be forwarded to the Manager, Emergency Preparedness for comments. Recommended changes that are approved by the Regulatory and Performance Improvement Director will be incorporated into the Post-Shutdown Emergency Plan and Implementing Procedures. Records shall be maintained on drills and exercises conducted at the Palisades Plant.

8.1.3 **Major Drills and Exercises will include the following:**

a. **Medical Drill**

A Medical drill shall be conducted at least once per calendar year. The drill shall involve the participation of local medical support personnel and organizations (eg, physicians, ambulance services, hospital, etc). Scenarios may include cases of radiation overexposure, contaminated personnel and/or contaminated/injured personnel.

b. **Fire Emergency Drill**

Drills will be conducted in accordance with the Palisades Fire Plan which has been reviewed and approved by the NRC.

c. **Radiological Monitoring Drills**

A radiological monitoring drill (onsite and/or offsite) shall be conducted annually. This drill shall include the collection and analysis of various materials. These may include grass, water, soil, and air samples.

d. **Health Physics Drills**

Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples, and direct radiation measurements.
e. Radiological Emergency Preparedness Exercise

An exercise which tests the Emergency Preparedness Plan and organization shall be conducted at least once per calendar year. These exercises shall be varied such that plans and preparedness organizations are tested completely within an eight-year exercise cycle. Provisions should be made to start exercises between 6:00 PM and 4:00 AM once every eight year exercise cycle, and to develop scenarios that reach Site Area and/or General Emergency levels every two years to assist the state and counties in maintaining their Emergency Preparedness requirements.

Annual exercises may involve the local, county, and state government emergency planning agencies depending on their past participation and schedule in accordance with federal regulations. Federal emergency response agencies shall be involved in a major exercise at least once every five years. Specific items tested are: public warning, adequacy of Emergency Implementing Procedures, communications, accident assessment, radiological monitoring, use of the Protective Action Guidelines, evacuation methodology, direction and control, public information, recovery and reentry operations, and emergency equipment.

Official observers from federal, state, or local governments will be encouraged to observe, evaluate, and critique the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the Plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation or report shall result from the critique. Deficiencies identified in this evaluation shall be assigned to appropriate Entergy staff.

f. Communication Tests

Communications shall be tested monthly with NRC headquarters from the Control Room, Technical Support Center and near-site Emergency Operations Facility. Communications shall be tested monthly with state and local governments within the plume exposure pathway of the Emergency Planning Zones. Communication shall be tested quarterly with those federal and state emergency response organizations within the ingestion pathway. Communication links with state emergency operations centers and field assessment teams from the Plant shall be tested annually. Communication links with the county emergency operations centers shall be tested annually by calling the respective Sheriff's Department. Communications between the Control Room, Technical Support Center, and Emergency Operations Facility shall be tested annually.
8.1.4 Emergency Planning

Emergency Planning has been delegated responsibilities related to emergency planning that include, but are not limited to, the following:

a. Ensure offsite county, state, and supporting emergency plans are compatible with the Palisades Post-Shutdown Emergency Plan.

b. Conduct offsite agency training.

c. Ensure that the information, data, and procedures detailed in the Palisades Nuclear Plant Emergency Implementing Procedures are consistent with the Palisades Post-Shutdown Emergency Plan.

d. Ensure that the Emergency Plan Implementing Procedures are coordinated and interface properly with other procedures (e.g., Administrative Procedures, Security Procedures, Radiation Protection Procedures, and Training Procedures, etc.).

e. Coordinate the onsite emergency planning drill and exercise activities.

f. Coordinate the onsite review and updating of the Palisades Post-Shutdown Emergency Plan and Implementing Procedures.

g. Assist the Palisades Training Department, in coordinating and/or providing emergency planning related specialty training.

h. Ensure the maintenance and inventory of emergency equipment and supplies.

i. Be familiar with current changes in the federal regulations and guidance which impact emergency planning activities.

j. Document all corrective actions resulting from Plant-related Emergency Planning critiques and audits.

k. Initiate appropriate Plant-related corrective actions, if any, resulting from the critiques of each integrated practice drill conducted at the Plant.
8.2 EDUCATIONAL INFORMATION FOR THE PUBLIC

For resident and transient members of the public within the 10-Mile Emergency Planning Zone, Entergy Corporation, and the local and state governments will provide written information pertaining to topics associated with emergency planning. Information provided may include the following topics:

- Notification methods, time required for notification.
- Public initial actions.
- Educational information on radiation.
- Contact points and locations for additional information, including news media or local broadcast stations.
- Protective measures.
- Special needs of the handicapped.

This information can be disseminated to the public via varying methods. These methods may include direct mail of literature, information brochures contained in billing statements, telephone book inserts, and posting information documents in public areas.

At least annually, Entergy Corporation and the local and state governments will update the information, if necessary, for members of the public within the 10-Mile Emergency Planning Zone.

8.3 REVIEW AND UPDATING OF THE POST-SHUTDOWN EMERGENCY PLAN AND IMPLEMENTING PROCEDURES

The Palisades Plant Post-Shutdown Emergency Plan involves the coordination of Entergy personnel and offsite support agencies. To achieve and maintain the most efficient course of emergency actions, the Palisades Plant Post-Shutdown Emergency Plan and Implementing Procedures, including appended letters of agreement, will be reviewed on an annual basis and updated as needed. These reviews are conducted to comply with the Entergy procedures, federal regulations, and operation license provisions.
Proposed revisions to the Post-Shutdown Emergency Plan, Emergency Implementing Procedures and appended Letters of Agreement shall receive an effectiveness review in accordance with 10 CFR 50.54(q). If the change to the Post-Shutdown Emergency Plan reduces the effectiveness of the Plan, the Nuclear Regulatory Commission (NRC) shall review and approve the change prior to implementation. The proposed change shall be reviewed by the Management and Safety Review Committee (MSRC) prior to Plant Licensing submitting the proposed change to the NRC.

Proposed revisions to the Post-Shutdown Emergency Plan shall be reviewed and approved in accordance with the Procedure P-EN-OM-119, "On-Site Safety Review Committee."

When revisions to the Post-Shutdown Emergency Plan affect offsite support agencies, they shall be notified as the changes occur.

Editorial changes to the Post-Shutdown Emergency Plan or Emergency Implementing Procedures such as titles and telephone lists are not subject to the review process described above.

An independent review of the Emergency Preparedness Program shall be conducted in accordance with 10CFR50.54(t).

The review shall include the Post-Shutdown Emergency Plan, Emergency Implementing Procedures, training, drills and exercises, equipment, and interfaces with state and local governments. Records of the review shall be maintained for at least 5 years. Emergency Planning shall ensure state and local governments have access to appropriate findings.

As the Post-Shutdown Emergency Plan is reviewed, the emergency organization or procedures may be changed as a result of the following:

a. Drills may detect deficiencies and may indicate a more desirable organization or procedure.

b. Changes in key personnel involved in the organization or procedure.

c. Changes in the Plant's organizational structure.

d. Changes in the functions of supporting agencies, resulting from reorganization, personnel changes, and equipment requirements.

e. Changes in state or federal regulations.
f. Modifications to the Plant.

g. Recommendations received from other organizations, such as the state and federal agencies or other nuclear facilities.

8.4 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES

Emergency Planning is responsible for ensuring the quarterly inventory and/or seal inspection is completed for designated emergency supplies and equipment.

Designated emergency equipment and supplies and their storage locations will be listed in the Implementing Procedures. Equipment, supplies, and parts having shelf lives shall be checked and replaced as necessary. Operational readiness of emergency equipment and supplies can be assured by conducting surveillance testing, maintenance checks, calibration, or inventory of all supplies and conducting an annual review of the list of equipment important to Emergency Planning.

8.5 EMERGENCY EQUIPMENT NUCLEAR PERFORMANCE ASSESSMENT DEPARTMENT CONTROLS

8.5.1 Meteorological Monitoring Program

The Emergency Preparedness Section controls for the Palisades Plant Meteorological Monitoring Program are defined in Palisades Administrative Procedure 1.14, "Meteorological Monitoring Program."

8.5.2 Dose Assessment Computer Programs

The Dose Assessment Computer Programs are in accordance with Procedure P-EN-IT-103, "Nuclear Cyber Security Program."

9.0 RECOVERY

In any emergency, the immediate action is directed to limiting the consequences of the incident in a manner that will afford maximum protection of the Plant personnel and the public. Once the immediate corrective and protective actions have established an effective control over the incident situation, the emergency actions will shift into the recovery phase.

A recovery plan, from a practical standpoint, must be flexible enough to adapt to existing, rather than theoretical, conditions. It is not possible to anticipate in advance all of the conditions that may be encountered in an emergency situation; therefore, the Palisades Post-Shutdown Emergency Plan is addressed to general principles that will serve as a guide for developing a flexible plan of action.
In the period immediately following an incident, initial radiation monitoring functions will involve only gross hazard evaluations and isolation and definition of radiological problem areas. This immediate radiation surveillance activity is intended to provide the basic information for the second stage of reentry and recovery.

9.1 The following is a brief description of actions that will be examined as required prior to authorizing reentry by the emergency staff.

9.1.1 Review available radiation surveillance data. Determine Plant areas potentially affected by radiation and contamination.

9.1.2 Review radiation exposures of personnel to participate in recovery operations. Determine need for additional personnel.

9.1.3 Review adequacy of radiation survey instrumentation and equipment (type, ranges, number, calibration, etc).

9.1.4 Preplan survey team activities:

a. Areas to be surveyed
b. Anticipated radiation and contamination levels
c. Radiation survey equipment required
d. Shielding requirements and availability
e. Protective clothing and equipment required
f. Access control procedures (issuance of RWP)
g. Exposure control limits and personnel dosimetry required
h. Decontamination requirements
i. Communications required

9.2 The initial reentry into the Plant areas should encompass the following (in order of priority):

9.2.1 Determine initial recovery operations.

9.2.2 Identify hazards or potential hazards associated with the recovery operations.
9.2.3 Conduct comprehensive radiation surveillance of Plant facilities and define radiological problem areas.

9.2.4 Isolate and post areas in the Plant with appropriate warning signs and rope barriers, as Radiation Areas, High Radiation Areas, and Contaminated Areas, as appropriate.

9.3 The nature and extent of the emergency situation will determine what recovery operations are required. The Recovery Organization described in Section 5 will be established as directed by the Recovery Manager.

9.3.1 In order for the recovery phase of the emergency to commence, the conditions which caused the incident must no longer exist. It is the responsibility of the EOF Emergency Director to determine that the facility and/or surroundings are safe.

9.3.2 The following criteria must be met before the recovery and reentry phase can begin:

   a. The Plant is in a controlled and stable condition,
   b. The release of radioactive materials to the environment is under control or has ceased.
   c. In-plant radiation levels are stable or decreasing.
   d. Fire, flood, etc, is under control or has ceased.
   e. At least one level of redundancy in plant systems should be available to prevent reinitiation of the event.
   f. Consensus has been reached among the SED, EOF Director, NRC, and the State.

9.4 The initial objectives of the recovery program are the determination of the damage to equipment, the installation of shielding, rope barriers and signs, the application of clearance tags, decontamination, and cleanup as required to place the Plant in an acceptable long-term condition. Other recovery operations will not be initiated until the area affected by the emergency has been defined. Particular attention will be directed toward isolating and tagging out components and systems as required to control or minimize hazards. A systematic investigation will be conducted to determine the equipment damaged and the extent of the damage.
9.5 Once the initial objectives are completed, a detailed investigation of the accident causes and consequences both to the Plant and to the environment will be conducted. Determination will be made as to the equipment repair work required as well as the need to modify Plant operating procedures. Repair work and approved modifications shall be carried out as authorized. Test programs to confirm fitness for return to service will be developed and executed.

9.6 Recovery operations will be conducted in compliance with normal operational radiation exposure levels as specified in 10 CFR 20. When possible, any necessary releases of radiation during recovery will be planned, controlled, evaluated in advance for radiological impact, and appropriate offsite organizations and agencies informed of the scheduled releases and estimated impact.

9.7 The State EOC will be advised when the Plant deems it safe to begin the reentry phase of the offsite recovery operation. If the Governor has ordered an evacuation, it is legally required for the Governor to officially rescind the order. The Michigan Department of Environmental Quality is responsible for coordinating reentry procedures for the offsite population.
FIGURE 9-1
LONG TERM RECOVERY ORGANIZATION

SITE VICE PRESIDENT

PLANT COMMUNICATIONS SPECIALIST

RECOVERY MANAGER

ADMINISTRATION AND LOGISTICS

PLANNING AND LOGISTICS

PLANT ENGINEERING

PLANT OPERATIONS

RADIATION PROTECTION

PLANT MAINTENANCE
AGREEMENTS WITH OFF-SITE INDIVIDUALS, AGENCIES, AND ORGANIZATIONS

Criteria for agreements with off-site individuals, agencies, and organizations.

Letters of agreement, contracts, or signature pages may be used to verify agreements made with offsite individuals, agencies, and organizations. The use of signature pages is appropriate for use with organizations or agencies where response functions are covered by laws, regulations, or executive orders.

Letters of agreement contain the following as appropriate:

1. Concepts of operations,
2. Emergency measures or services to be provided,
3. Mutually acceptable criteria for implementation,
4. Arrangements for exchange of information,
5. Authorities,
6. Responsibilities,
7. And Limits of actions.

Contracts or contract excerpts may be used in place of letters of agreement and should address the above criteria as appropriate.

As specified in Section 8 of this plan, letters of agreement, contracts, and signature pages will be reviewed annually. The following agreements will be reviewed annually and updated as needed.

1. Covert Fire Department
2. South Haven Area Emergency Services Authority
3. Lakeland Regional Medical Center
4. South Haven Community Hospital
5. Medic 1 Community Emergency Service
6. GEL Laboratories
AGREEMENTS WITH OFF-SITE INDIVIDUALS, AGENCIES, AND ORGANIZATIONS

7. Memo on Agreement with NSSS Vendor
8. Memo on Agreement with Nuclear Fuel Supplier
9. Reciprocal Laboratory Use Agreement
10. Institute of Nuclear Power Operations
11. Mutual Assistance Agreement
12. Hostile Action Memorandum of Understanding

All letters of agreement, contracts, and signature pages are kept with the master file for this appendix in Document Control.
The following basis for deleting Appendix B of the Palisades Site Emergency Plan was taken from the 12/17/86 memorandum by RAEnglish and DLFugere. This document is filed in Document Control under A200/22*06*01/LP.

I. A. The plots of calculated time/distance/dose contained in Appendix B were generated during the development of evacuation time estimates. They were placed in the Plan because it was thought that this information might be useful during an emergency. The plots are no longer needed because this information can be more quickly obtained through the Company's new automated dose assessment program maintained on the IBM PC's or the backup manual dose calculation procedures. In addition, the plots are only applicable for Maximum Hypothetical Accident Conditions where as the automated program or manual procedures provide results which are applicable for any accident scenario.

B. NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans & Preparedness in Support of Nuclear Power Plants, does not indicate that these plots have to be in the Plan.

C. The plots are not referenced in the Plan nor are they used in the Emergency Implementing Procedures.

II. A. The curves of dose rate versus time since reactor shutdown, based on the containment isolation monitors RIA-1805 thru RIA-1808 contained in Appendix B are typical of working level material and as such should not be in the Plan. NUREG-0654 does not require this type of material in the Plan.
POPULATION DISTRIBUTION AND EVACUATION TIME ESTIMATES

The contents of Appendix C have been relocated to a progeny procedure to the Post-Shutdown Emergency Plan. See PSEP Supp 2, "Evacuation Time Estimates," Revision 1, August 2012.
Palisades Site Specific Procedures

**EI-1**  **Emergency Classification and Actions**  (SEP Section 4)

Upon recognition that abnormal Plant or site conditions exist, this procedure will be used in conjunction with SEP Sup 1 "SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts" to determine the appropriate Emergency Action Level(s) and to assure that all mandatory and subsequent actions are carried out.

**EI-1.1**  **Emergency Response to Credible Security Threats**  (Canceled)  (SEP Section 4)

This procedure provides guidance for declaring and responding to an Unusual Event or an Alert based on a credible security threat. (This procedure was canceled following the implementation of the NEI 99-01 Revision 4 EALs as this version of EALs incorporated the security threat EALs.)

**EI-2.1**  **Emergency Plant Manager**  (Canceled)  (SEP Section 5)

This procedure defines the responsibilities of the Emergency Plant Manager.

**EI-2.2**  **Emergency Staff Augmentation**  (SEP Section 5)

This procedure establishes a method for augmenting onsite staffing under emergency conditions.

**EI-3**  **Communications and Notifications**  (SEP Section 6)

This procedure details the notification format and provides call lists of offsite agencies. The primary and alternate communications lines are also described.

**EI-4.1**  **Technical Support Center Activation**  (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the TSC.

**EI-4.2**  **Operations Support Center Activation**  (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the OSC.

**EI-4.3**  **Emergency Operations Facility Activation**  (SEP Section 5)

This procedure describes the activation, staffing, physical facilities, equipment, and operations of the EOF.
EMERGENCY IMPLEMENTING PROCEDURES

EI-5.0  **Reentry** (SEP Section 9)

This procedure provides guidelines for entry into the affected area of the Plant after the emergency condition has been stabilized. It also provides guidelines for the initial recovery operation prior to the establishment of the Long-Term Recovery Organization.

EI-5.1  **Recovery** (SEP Section 9)

This procedure describes the recovery phase of emergency response at Palisades, and provides guidelines for restoring the plant to its preemergency condition.

EI-6  **Rapid Dose Calculation** (SEP Section 6)

This procedure provides a method to determine the appropriate steps required to calculate offsite dose and recommend offsite protective actions.

EI-6.1  **Release Rate Determination from Stack Gas Monitors** (SEP Section 6)

This procedure provides a manual calculation of a release rate for radioactive effluents from the Plant stack.

EI-6.2  **Release Rate Determination from Steam Line Monitors RIA-2323 and RIA-2324 for Steam Releases Through Atmospheric Dump Valves** (SEP Section 6)

This procedure provides a manual calculation of a release rate for radioactive effluents from the atmospheric dump valves.

EI-6.3  **Release Rate Determination from High-Range Effluent Monitors** (SEP Section 6)

This procedure provides a release rate calculation for radioactive effluents from the Plant stack or steam dumps.

EI-6.4  **Release/Potential Release Determination from Containment High-Range Monitors** (SEP Section 6)

This procedure provides a release/potential release rate from radioactive material released into containment.

EI-6.6  **Gamma E-Bar Determinations** (SEP Section 6)

This procedure provides a Gamma E-Bar (Average Gamma Energy Per Disintegration) for input into offsite dose calculations.
EMERGENCY IMPLEMENTING PROCEDURES

EI-6.7  **Plant Site Meteorological System** (SEP Section 7)

This procedure provides a means to access the Plant site meteorological system for meteorological data required in the offsite dose calculations.

EI-6.8  **Backup and Supplemental Meteorology** (SEP Section 7)

This procedure provides a means to access the Weather Services International (WSI) meteorological system and obtain meteorological data required in the offsite dose calculations when onsite meteorological data is not available.

EI-6.9  **Automated Dose Assessment Program** (SEP Section 6)

This procedure provides basic instruction on how to initiate and operate the IBM PC Automated Dose Assessment Program "Offsite."

EI-6.10  **Offsite Dose Calculation - Straight Line Gaussian (Manual Method)**  
(SEP Section 6)

This procedure provides a manual backup to the automated dose assessment program to calculate whole body and thyroid dose rates.

EI-6.13  **Protective Action Recommendations for Offsite Population** (SEP Section 6)

This procedure provides guidelines for determining protection actions for the general public to be recommended to the appropriate state and local authorities in the event of a radiological emergency.

EI-7.0  **Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates** (SEP Section 6)

This procedure provides the decision process necessary to implement sampling under emergency conditions.

EI-7.1  **Emergency Sampling - PCS Liquid/Gas and Containment Air** (Canceled)

This procedure describes the sequential method of sampling the Primary Coolant System (PCS) and/or the containment atmosphere during a post-accident condition using the PASM panel. (This procedure was canceled following elimination of the PASM panel.)
EMERGENCY IMPLEMENTING PROCEDURES

EI-7.2 Emergency Post Accident Analysis (Canceled)

This procedure describes the sequential method of analyzing the PCS samples obtained during an accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.3 Hydrogen and Oxygen Gas Analysis of Post-Accident Samples (Canceled)

This procedure describes the steps necessary to determine the hydrogen concentration from a PCS gas sample collected at the PASM panel, as well as the hydrogen and oxygen concentration from containment atmospheric gas samples. (This procedure was canceled following elimination of the PASM panel.)

EI-7.4 Post Accident Gas and Liquid Activity Analysis (Canceled)

This procedure describes the steps necessary to analyze samples for gamma activity during a post-accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.5 Boron: Chloride Ion Chromatography Method Post Accident (Canceled)

This procedure describes the steps necessary to analyze and determine the boron concentration in a diluted PCS sample during a post-accident condition. (This procedure was canceled following elimination of the PASM panel.)

EI-7.8 pH: Hydrogen Specific Ion Electrode (Canceled 10/95)

This procedure describes the steps necessary to determine the pH of an undiluted PCS sample during a post-accident condition. (This procedure was canceled 10/95).

EI-7.10 Post Accident Sampling, Radioactive Gaseous Effluent Monitoring (SEP Section 6)

This procedure describes the steps necessary to obtain a post-accident sample of the stack effluent utilizing the radioactive gaseous effluent monitor.

EI-8 Onsite Radiological Monitoring (SEP Section 6)

This procedure provides guidelines for post-accident radiological monitoring on site.

EI-9 Offsite Radiological Monitoring (SEP Section 6)

This procedure provides guidelines for post-accident radiological monitoring off site.
EMERGENCY IMPLEMENTING PROCEDURES

El-10  **Accident Environmental Assessment** (SEP Section 6)

This procedure provides guidelines for post-accident collection and replacement of accident TLDs, obtaining data from air monitoring stations, collection and assessment of waterborne effluents, and obtaining water/milk/vegetation samples.

El-11  **Determination of Extent of Core Damage** (SEP Section 6)

This procedure provides a method of estimating the degree of core damage during accident conditions.

El-11.2  **Core Damage Assessment from Post Accident Sampling** (Canceled)

This procedure provides a method of determining extent of core damage via gamma isotopic analysis at the PASM panel. (This procedure was canceled following elimination of the PASM panel.)

El-12.1  **Personnel Accountability and Assembly** (SEP Section 6)

To provide guidelines and assign responsibility for personnel assembly and accountability.

El-12.2  **Assembly Area Personnel Lists** (Canceled 10/95)

Provides updates for assembly area lists. (This procedure was canceled 10/95).

El-12.3  **Search and Rescue Team Responsibilities** (SEP Section 6)

Provides guidelines for search and rescue teams during an emergency.

El-13  **Evacuation/Reassembly** (SEP Section 6)

This procedure provides site evacuation procedures and the subsequent reassembly of personnel.

El-14  **Medical Care/Treatment of Contaminated, Injured Personnel** (SEP Section 6)

This procedure provides guidelines on personnel emergency radiation exposure limits, personnel decontamination procedures, the use of thyroid blocking agents, and the methods of transporting contaminated/injured victims to hospitals.
EMERGENCY IMPLEMENTING PROCEDURES

EI-15.1 Drills and Exercises (Cancelled)

This procedure details the requirements for drills and exercises which test the efficiency of the Site Emergency Plan. (This procedure was canceled following the implementation of Entergy Procedure EN-EP-306, Drills and Exercises.)

EI-15.2 Communications Tests (SEP Section 8)

This procedure establishes requirements for testing the emergency communications systems.

EI-15.3 Post Accident Sample Monitoring System Operator Training (Canceled)

This procedure provides training guidelines for the post-accident sample panel. (This procedure was canceled following elimination of the PASM panel.)

EI-16.1 Maintenance of Emergency Equipment (SEP Section 7)

This procedure establishes a method for the regular inventory and testing of emergency equipment and supplies.

EI-16.2 Post Accident Sample Monitoring System Supplies and Associated Equipment Checks (Canceled)

This procedure establishes a method for the regular inventory and operability checks of the Post Accident Sample Monitoring Panel supply cabinets and associated equipment. (This procedure was canceled following elimination of the PASM panel.)

EI-17 Compensating Measures For OOS EAL Equipment And Listing Of Non-EAL Equipment Important For Emergency Preparedness

This procedure lists equipment important to Emergency Preparedness. It provides time restrictions for the length of time the equipment may be out of service.

Additional Procedures

P-EN-EP-306 Drills and Exercises

This procedure provides guidance for the planning, preparation, scheduling, conduct, evaluation, and documentation of Emergency Planning drills and exercises.
EMERGENCY IMPLEMENTING PROCEDURES

P-EN-EP-307  **Hostile Action Based Drills and Exercises**

This procedure provides guidance for the preparation and conduct of integrated Emergency Planning (EP) and Security exercises using hostile action based scenarios; and, provides guidance for the preparation and conduct of a pre-exercise hostile action-based tabletop.

P-EN-EP-308  **Emergency Planning Critiques**

This procedure describes the means for tracking and correcting deficiencies identified in drills.

P-EN-EP-310  **Emergency Response Organization Notification System**

This procedure provides guidance to maintain the ERO notification system in a state of readiness.


This procedure provides for a secure network communications connection supporting the transmission of station parameters to the Nuclear Regulatory Commission (NRC) in the event of a declared emergency; and provides instructions for verification of connections for those plants which maintain 24/7 connectivity.

P-EN-EP-313  **Offsite Dose Assessment using the Unified RASCAL Interface**

This procedure provides the methods and instructions for performing offsite dose assessment using the Unified RASCAL Interface (URI).

P-EN-EP-609  **Emergency Operations Facility (EOF) Operations**

This procedure provides guidance to activate and operate the EOF focusing on classification, notification, dose assessment and protective action recommendations.

P-EN-EP-610  **Technical Support Center (TSC) Operations**

This procedure provides guidance to activate and operate the TSC; and, contains guidelines regarding personnel emergency radiation exposure limits and issuance of thyroid blocking agents.
EMERGENCY IMPLEMENTING PROCEDURES

P-EN-EP-611 Operations Support Center (OSC) Operations

This procedure provides guidance to activate and operate the OSC.

P-EN-EP-801 Emergency Response Organization

This procedure outlines expectations and responsibilities for Emergency Response Organization (ERO) members, Site Management and the Emergency Planning staff; and, outlines responsibilities for personnel assigned to an ERO position and for other company personnel who may be called upon to support an emergency response effort, but are not directly assigned to an ERO position.

P-EN-TQ-110 Emergency Response Organization Training

This procedure establishes the training and qualification requirements for personnel assigned to the Emergency Response Organization (ERO); and establishes the training offered to off-site emergency response organizations.

P-EN-TQ-110-01 EPlan Training Course Summary

This procedure lists the specific curricula and learning items required for each of the Emergency Response Organization (ERO) positions specified in P-EN-EP-801, Emergency Response Organization.
GENERAL EQUIPMENT IN EMERGENCY KITS

Emergency kits will be maintained and inspected at least quarterly and readily accessible. Kits are typically maintained in the following locations: Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF), Emergency Vehicles, Health Physics Office and support hospitals. Specific kit locations are specified in the Emergency Implementing Procedures. Specific equipment inventories are contained in the Emergency Implementing Procedures.

Emergency kits consist of the following generic equipment classifications:

a. Monitoring instrumentation and equipment including: dose rate and count rate meters, air sampling equipment, personnel dosimetry equipment.

b. Protective equipment including: protective clothing, respiratory equipment, thyroid blocking agent.

c. Communications equipment including: radios, telephones, microphones.

d. Reference material including: Emergency plans and procedures, maps, equipment lists, spare forms.

e. Miscellaneous equipment including: survey, posting and boundary equipment, plastic bags, flashlights, office supplies, decontamination equipment.

f. Maintenance equipment.

g. Medical Emergency equipment including: monitoring instrumentation and equipment, protective equipment, survey, posting and boundary equipment, decontamination and first aid supplies.

h. Medical Emergency First Aid equipment including: Medical First Aid supplies for use in responding to contaminated or noncontaminated injuries.
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Attachment 5

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

Analysis of Proposed Post-Shutdown On-Shift Staffing

(44 Pages)
PALISADES NUCLEAR PLANT
ANALYSIS OF PROPOSED POST-SHUTDOWN ON-SHIFT STAFFING

August 2017
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I. INTRODUCTION

On January 4, 2017, Entergy Nuclear Operations, Inc. (ENO) informed the Nuclear Regulatory Commission (NRC) that the Palisades Nuclear Plant (PNP) will permanently cease power operations on October 1, 2018. ENO will supplement the January 4, 2017 letter certifying the cessation date in accordance with 10 CFR 50.82(a)(1)(i) and 10 CFR 50.4(b)(9). Once fuel has been permanently removed from the reactor vessel, ENO will submit a written certification to the NRC, in accordance with 10 CFR 50.82(a)(1)(ii) that meets the requirements of 10 CFR 50.4(b)(9). Upon docketing of these certifications, the 10 CFR Part 50 license for PNP will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). In the permanently defueled condition, the Final Safety Analysis Report (FSAR) credible accidents (postulated accidents) are reduced via the 50.59 process. In order to address the transition from an operating facility to a permanently defueled facility, changes are required to preserve the effectiveness of the PNP Site Emergency Plan (SEP) to properly reflect the conditions of the facility.

This report details the preliminary analysis of the proposed post-shutdown on-shift staffing for PNP, incorporating anticipated changes to the on-shift staffing and postulated accidents to address the post-shutdown and permanently defueled conditions. Specifically, it reassigns some on-shift tasks to align with proposed changes to on-shift staffing and the resulting changes to PNP Emergency Plan Implementing Procedures (EPIPs). This analysis will be updated and formal Time Motion Studies (TMS) will be conducted, as necessary, following development and validation of procedures that address PNP’s permanently shut down and defueled conditions.

This analysis evaluates the ability of the proposed post-shutdown minimum on-shift staff to implement all emergency tasks, as applicable to the permanently shut down and defueled conditions.

This analysis satisfies the requirements of 10 CFR Part 50, Appendix E Section IV.A.9, which states that nuclear power 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.” To support reduced staffing following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the proposed post-shutdown on-shift staffing was evaluated in conjunction with the postulated accidents that will be applicable in the permanently defueled condition and assumed corresponding changes to procedures. This analysis examined the capability of the proposed post-shutdown minimum staff to perform the actions for the key functional areas for events applicable in the permanently defueled condition until augmenting Emergency Response Organization (ERO) staff arrives in accordance with the PNP SEP.

II. ANALYSIS SUMMARY

This analysis determined that a proposed post-shutdown on-shift staff of eight (8) (including the required Fire Brigade) can cope with the spectrum of analyzed events, as described in Section IV of this report, until
augmenting ERO staff arrives. The on-shift staff consists of individuals necessary to support each of the following emergency plan functional areas or tasks:

- Emergency Direction and Control
- Plant Operations and SFP Cooling
- Fire Fighting (Fire Brigade)
- Accident/Dose Assessment
- Radiation Protection and Chemistry
- Notification/Communication
- Access Control and Accountability

It is acceptable for certain functions to be assigned to personnel already assigned other functions/tasks. These include Repair and Corrective Action, Rescue Operations, and First Aid.

PNP intends to enter the post-shutdown and permanently defueled condition with a 5-person Fire Brigade. However, 10 CFR 50.48(f) states, "Licensees that have submitted the certifications required under § 50.82(a)(1) shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials (i.e., that could result in a radiological hazard)." 10 CFR 50.48(f)(1)(ii) requires the plant to "rapidly detect, control, and extinguish fires that do occur." The NRC has provided guidance in Regulatory Guide 1.191, Fire protection Program for Nuclear Plants During Decommissioning and Permanent Shutdown. Subsection 4.3.4 Onsite Fire Brigade and Offsite Fire Emergency Response, provides guidance with regards to maintenance of a fire brigade during the post-shutdown period. The following factors should be considered in determining the manual firefighting capability:

- The magnitude and complexity of potential fires in and around plant areas where radioactive materials or contamination are present
- The availability of onsite staffing for a fire brigade at any time.
- The availability of offsite emergency services, the capability of their staff and equipment, the response time, the staff’s training, and access to the plant.
- The compatibility of the plant’s fire system connections and fittings with the fire apparatus and equipment of the offsite responders.

Considering the guidance in RG 1.191, PNP could elect to evaluate the possibility of making changes to the fire protection program, considering system abandonments and the reduction of hazards. This analysis could potentially include an evaluation of the feasibility of a smaller fire brigade. However, this analysis of proposed post-shutdown on-shift staffing considers the current 5-person fire brigade.
A. Emergency Plan Minimum Staffing

Per 10 CFR 50.54(q)(1)(iii), Emergency planning function means 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 and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

Only personnel proposed to be on-shift are credited in this analysis. This proposed staffing consists of a Shift Manager; two Non-Certified Operators; and one Radiation Protection Technician. An individual qualified as a CFH will supervise fuel handling operations in the permanently shut down and defueled condition. Shift Managers will be qualified as CFHs. The Shift Manager requires additional qualification beyond the CFH training. Command and Control will remain with the Shift Manager, regardless of location.

Additionally, four additional Fire Brigade positions and shift Security personnel are assigned. The on-shift staffing utilized for this analysis was defined with the following considerations:

- The Shift Manager performs as Emergency Director until properly relieved by a qualified position. After being relieved by another Command and Control position, the Shift Manager will provide assistance and direction to the Control Room staff as necessary.

- Non-Certified Operator duties include providing technical support for plant systems, providing input on repair and corrective actions, and notifications as directed by the Shift Manager. These notifications include the following: 1) required notifications to the states and counties; 2) required notifications to the NRC; and 3) notifications to the Emergency Response Organization. A Non-Certified Operator will also serve as the Fire Brigade Leader in compliance with the PNP fire protection program implementation with requisite plant knowledge to fill this role.

- Non-Certified Operator duties include making repairs and corrective actions on plant equipment until augmented plant maintenance staff arrives, participating as an active member of the Fire Brigade, or as Fire Brigade Leader when assigned by the Shift Manager.

- Shift Radiation Protection (RP) Technician duties include conducting radiological accident assessment and support, offsite dose assessment as requested by the Shift Manager, onsite in plant surveys, and chemistry and radiochemistry analysis.

- The proposed Fire Brigade minimum complement is 5, consisting of a Non-Certified Operator (Fire Brigade Leader) and four (4) other Fire Brigade qualified staff members assigned other functions.

The following table contains the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.

This analysis will be updated and formal TMSs will be conducted, as necessary, following development and validation of procedures that address PNP’s permanently shutdown and defueled conditions to verify the proposed post-shutdown on-shift staffing is appropriate.
### Position Licensing Basis Requirement E-Plan Functional Area Proposed On-Shift Staffing Analysis Results

<table>
<thead>
<tr>
<th>Position</th>
<th>Licensing Basis Requirement</th>
<th>E-Plan Functional Area</th>
<th>Proposed On-Shift Staffing Analysis Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift Manager (SM) (Certified Fuel Handler (CFH₁))</td>
<td>E-Plan Figure 5-2</td>
<td>Emergency Direction and Control</td>
<td>1</td>
</tr>
<tr>
<td>Non-Certified Operator #1¹</td>
<td>E-Plan Figure 5-2</td>
<td>Notifications/Communications</td>
<td>1</td>
</tr>
<tr>
<td>Non-Certified Operator #2¹</td>
<td>E-Plan Figure 5-2</td>
<td>Fire Brigade Leader</td>
<td>1³</td>
</tr>
<tr>
<td>Fire Brigade #2 (FB #2)</td>
<td>E-Plan Figure 5-2</td>
<td>Fire Brigade</td>
<td>1³, ⁴</td>
</tr>
<tr>
<td>Fire Brigade #3 (FB #3)</td>
<td>E-Plan Figure 5-2</td>
<td>Fire Brigade</td>
<td>1³, ⁴</td>
</tr>
<tr>
<td>Fire Brigade #4 (FB #4)</td>
<td>E-Plan Figure 5-2</td>
<td>Fire Brigade</td>
<td>1³, ⁴</td>
</tr>
<tr>
<td>Fire Brigade #5 (FB #5)</td>
<td>E-Plan Figure 5-2</td>
<td>Fire Brigade</td>
<td>1³, ⁴</td>
</tr>
<tr>
<td>Radiation Protection (RP) Technician</td>
<td>E-Plan Figure 5-2</td>
<td>Radiation Protection Accident/Dose Assessment²</td>
<td>1</td>
</tr>
<tr>
<td>Security</td>
<td>Security Contingency Plan/E-Plan Figure 5-2</td>
<td>Access Control and Accountability</td>
<td>Per Security Contingency Plan</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

¹ Use of the titles, CFH and Non-Certified Operator, are dependent upon NRC approval of proposed changes to Technical Specifications. Individuals qualified as CFHs will supervise fuel handling operations in the permanently defueled condition. Shift Managers will be qualified as CFHs. The Shift Manager requires additional qualification beyond the CFH training. Non-Certified Operators will perform duties typically associated with those formerly performed by Non-Licensed Nuclear Plant Operators, such as manipulation and monitoring of plant equipment.

² The Radiation Protection Technician is assigned Accident/Dose Assessment responsibilities in the Fuel Handling Accident analyses (Analyses #2 and #5). However, the Shift Manager and Non-Certified Operators are trained and qualified to perform accident/dose assessment and could be perform the task at the direction of the Shift Manager. There are no Accident/Dose Assessment tasks identified as being required during the remaining analyses.

³ The Fire Brigade consists of a minimum of 5 responders, the Fire Brigade Leader and a minimum of four (4) trained and qualified Fire Brigade Members. These positions do not have any actions or tasks that would conflict with Fire Brigade responsibilities in the events analyzed. The on-shift member is available to support the Shift Manager, where qualified, in non-fire events.

⁴ Provided by Fire Brigade qualified staff assigned other functions.
B. Other Commitments to Shift Staffing

None

C. Staffing Exceptions and Time Motion Studies (TMS)

1. No chemistry job tasks were noted as being required within the first 90 minutes of any of the analyzed events. Because the Chemistry Technician was not identified as having any specific Chemistry/Radiochemistry-related emergency tasks, and because the on-shift Radiation Protection Technician will be trained to perform sampling and analysis, the Chemistry Technician position is unnecessary and is not included in the proposed post-shutdown on-shift staffing complement.

2. During fuel movement, additional Operations and Radiation Protection personnel that are not part of the on-shift staff will be on site that, were a fuel handling accident to occur, will be able to respond to the event. Consequently, there are an adequate number of qualified personnel to perform plant surveys and dose assessment in the event of a fuel handling accident as discussed in Events 2 and 5. The task of accident/dose assessment will be performed as directed by the Shift Manager. It is acceptable to assign the Radiation Protection Technician the emergency plan function of dose assessment. No further analysis or TMS is required.

3. Because PNP will no longer be authorized to operate the reactor or place fuel into the reactor vessel, the Shift Engineer/Shift Technical Advisor position is unnecessary and is not included in the proposed post-shutdown on-shift staffing complement.

4. Because PNP will no longer be authorized to operate the reactor or place fuel into the reactor vessel, the Safe Shutdown (SSD) task is not necessary and is not considered in this analysis.

5. Because of the reduced actions necessary to mitigate an emergency in the permanently shut down and defueled condition and the minimal actions of the Control Room positions in this condition, no Licensed Nuclear Control Operator job tasks were noted as being required for any of the analyzed events. Because the Licensed Nuclear Control Operators were not identified as having any specific emergency tasks during the scenarios evaluated for this analysis, the position is not included in the proposed post-shutdown on-shift staffing complement.

6. The Shift Manager is assigned the responsibility to make some site specific event notifications such as to the Duty Plant Manager, Operations Manager, and Resident Inspector. These notifications by phone are considered communications that are approximately one minute in length and are deemed acceptable due to the short duration of the notifications. Additionally, these notifications are collectively evaluated in conjunction with other Shift Manager duties and responsibilities during Operations simulator training evaluations and Emergency Plan drills and are not deemed as impacting the Shift Managers ability to maintain oversight of the event or perform other required emergency plan tasks. Line 14 of Table 5 contained in Section VII of this
report does not reflect the performance of these short duration notifications. No further analysis or TMS is required.

7. A TMS was performed to verify the capability of the Non-Certified Operator to perform the Notification/Communication responsibilities assigned in each analysis. The PNP process for completing state and local emergency notification forms and performing the off-site notifications is automated and requires minimal manual actions. A TMS was conducted and demonstrated that these tasks could be performed by the on-shift Non-Certified Operator without impacting the ability of the Non-Certified Operator to remain in role providing support and oversight during the emergency. The TMS demonstrated the Notification/Communication responsibilities could be performed individually or in series without impacting the Non-Certified Operator function. The results are documented in Section VIII of this analysis.

The TMS is considered bounding for all scenarios considered in this analysis and demonstrated the Notification/Communication responsibilities could be performed individually or in series without impacting the Non-Certified Operator function. The results are documented in Section VIII of this analysis.

8. Station staff are required to maintain continuous communications with the notification source during an aircraft threat in accordance with 10 CFR 50.54(hh) and Reg. Guide 1.214. There are no specific qualifications required to perform this task and the function is not required to be assigned in advance. The analysis of this event identified there are sufficient personnel on-shift to perform this task during the event. No further analysis or TMS is required.

9. The Shift Manager is assigned the task of notifying the off-shift ERO of the emergency. A TMS was conducted during development of the initial Palisades Nuclear Station On-Shift Staffing Analysis Report to determine if the Shift Manager could perform the task of notifying the ERO of the emergency while continuing to maintain emergency direction and control. The TMS demonstrated the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. Additionally, the task of ERO notification is routinely evaluated in conjunction with other Shift Manager duties and responsibilities during Operations simulator training evaluations and Emergency Plan drills. No further analysis or TMS is required.

10. NRC event notifications required due to the declaration of an Emergency Classification in accordance with 10 CFR 50.72 is made verbally using the Emergency Notification System. A written event notification form is not generated by on-shift staff for this notification. Formal written notifications to the NRC as may be required by 10 CFR 50.72 resulting from any of the analyzed events may be generated by the augmented staff. The task of completing the NRC event notification form is therefore not included as an on-shift task requiring evaluation as part of this staffing analysis.
D. Emergency Plan Tasks Not Analyzed

1. Repair and Corrective Action - Per the guidance of NUREG-0654, Table B-1, repair and corrective action tasks may be performed by shift personnel assigned other functions. Repair and corrective action is defined as:

   - An action that can be performed promptly to restore a non-functional 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.

   The analysis included a review of repair and corrective action tasks. For the purpose of this analysis, the tasks were considered to fall into two broad categories:

   - Unplanned/unexpected actions that address equipment failures. These actions are contingent in nature and cannot be specified in advance.

   - Planned/expected actions performed in support of operating procedure implementation, including severe accident management guidelines.

   Non-Certified Operators are trained to perform the actions associated with this functional area. Actions (e.g., reset breakers, valve manipulation) directed by the Shift Manager to mitigate the event per procedures were performed by the Non-Certified Operators in this analysis. Repair and Corrective Action is an acceptable collateral duty and was not analyzed.

2. Rescue Operations and First Aid: The analysis also included a review of rescue operations and first aid response although neither task was required during the evaluated scenarios. Per the guidance of NUREG-0654, Table B-1, rescue operations and first aid may be performed by shift personnel assigned other functions. The on-shift Radiation Projection staff is trained and available to perform first aid and the site Fire Brigade staff are trained and available to perform rescue operations if required. First aid and rescue operations are acceptable collateral duties.

III. ANALYSIS PROCESS

The initial staffing analysis report, Rev. 0, was conducted by a joint team of corporate Emergency Preparedness (EP) personnel and station personnel from the Operations, Training, Licensing, Radiation Protection, Chemistry and Emergency Preparedness (EP) departments. Additionally, members of the Security staff provided input to the analysis. Revision 1 of the initial report was developed based on input, reviews and concurrence from station personnel from the same departments as those participating in the original analysis. The review process for the administrative changes included in Revisions 2, 3, and 4 was limited to an independent peer review and final review and concurrence by the PNP EP Manager.

The current analysis was developed by reviewing each scenario from Revision 4 to determine its applicability in a permanently shut down and defueled condition and 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 proposed post-shutdown on-shift staff positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel, ensuring that no actions were assigned to staff members that conflicted with either their proposed emergency plan role or operational role as appropriate. In cases where multiple tasks were assigned to an individual in their role, an evaluation of the timing of the tasks was conducted to ensure that they could be performed by the individual in series within any specified time requirements.

The results of the analysis for each of the scenarios are included in Section VII, APPENDIX B – ON-SHIFT STAFFING ANALYSIS. Note that NSIR DPR-ISG-01 states that only Design Basis Accidents (DBA) "which would result in an emergency declaration" should be evaluated in the staffing assessment. In a permanently shut down and defueled condition FSAR Chapter 14 will be revised to eliminate the DBAs that will not be applicable in the permanently defueled condition.

IV. ACCIDENT SCENARIOS

A. Accident Selection

1. The scenarios were chosen using the guidance of NSIR/DPR-ISG-01, based on the applicability in a permanently shut down and defueled condition. The evaluation considered the station DBAs described in the FSAR along with additional scenarios specified by the guidance documents. The following scenarios were considered for inclusion in this analysis:

   1. Design Basis Threat (DBT) ground assault
   2. DBA Fuel Handling Accident (FHA)
   3. Aircraft Probable Threat as described in 10 CFR 50.54(hh)
   4. Fire requiring evacuation of the Control Room and control of Spent Fuel Pool cooling
   5. General Emergency with Radioactive Release and PAR
   6. Station Blackout (SBO) as described in ISG-01
   7. DBA Cask drop in the SFP

B. Accident Scenarios included in the Analysis

1. Design Basis Threat

   The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.
2. Fuel Handling Accident (FHA)

The postulated design basis accident that will remain applicable to PNP in its permanently shut down and defueled condition is the FHA. This accident analysis assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.

3. Aircraft Probable Threat (50.54(hh))

Notification is received from the NRC that a probable aircraft threat exists (>5 minutes, <30 minutes).

4. Fire requiring evacuation of the Control Room and control of spent fuel pool (SFP) cooling

A fire occurs requiring the evacuation of the Control Room and procedures implemented to control SFP cooling from a remote location.

5. General Emergency with Radioactive Release and PAR

The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods. A General Emergency is declared when the Shift Manager is given a dose assessment update that projects >1 Rem TEDE dose at the site boundary.

C. Accident Scenarios not included in the Analysis

1. Station Blackout

ISG-01 provides guidance associated with the staffing analysis for a Station Blackout (SBO). ISG-01 states, in part:

Station blackouts are beyond the plant’s design basis and may not need to be addressed in the staffing analysis. The blackout coping analyses performed by licensees pursuant to 10 CFR 50.63 establish blackout coping times that exceed the required on-shift staff augmentation time. Also, since the control room fire scenario leading to evacuation and remote shutdown may adequately address the considerations involved with an Appendix R “safe shutdown” fire, licensees may not need to consider this scenario in the staffing analysis.

10 CFR 50.63(a)(1) states, in part:

Each light-water-cooled nuclear power plant licensed to operate under this part, each light-water-cooled nuclear power plant licensed under subpart C of 10 CFR part 52 after the Commission makes the finding under § 52.103(g) of this chapter, and each design for a light-water-cooled nuclear power plant approved under a standard design approval, standard design certification, and manufacturing license under part 52 of this chapter must be able to withstand for a specified duration and recover from a station blackout as defined in § 50.2.

Upon docketing of the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize operation of
the reactor or emplacement of fuel in the reactor vessel. PNP will no longer be a nuclear power plant licensed to operate under 10 CFR Part 50 and 10 CFR 50.63 will no longer be applicable. The SBO scenario is no longer considered an appropriate gauge by which to measure whether an event presents on-shift staff with responsibilities that would prevent the timely performance of assigned functions in the E-Plan. Therefore, this scenario is not considered in this analysis.

2. Dropped Cask as Described in FSAR 14.11

Analyzed dropped cask events were identified as events that would only occur with the availability of additional station staff above and beyond those represented by station minimum staff and are outside the bounds of this analysis. Additionally, it was determined that no emergency declaration would be expected for this event.

V. GENERAL ASSUMPTIONS AND LIMITATIONS

A. Notes and Assumptions applicable to all accidents in PNP Staffing Analysis:

1. The RP and Chemistry tasks reviewed were those directed by the Shift Manager to support actions in Operations procedures for Off-Normal Procedures (ONP), Emergency operating Procedures (EOP), and Emergency Plan Implementing Procedures (EI). Any additional tasks directed by the Technical Support Center (TSC), Operations Support Center (OSC), or Emergency Operations Facility (EOF) procedures were not reviewed.

2. PNP has 60 minute emergency responders when augmenting while the ERO is offsite. This analysis was conducted assuming a 90 minute response of the augmented ERO. There were no specific emergency response tasks assigned to the augmented ERO prior to the 90 minute response.

3. There are no time critical RP or Chemistry tasks and task performance is directed and prioritized by the Shift Manager. The time RP is directed to perform a task and the amount of time taken to complete tasks are estimated. No Chemistry samples are required by Tech Specs within the 90 minute period after a declaration. Because the Shift Manager directs when the tasks are performed, there are no overlapping RP or chemistry tasks.

B. Additional Assumptions

1. Response time used for this analysis was the maximum acceptable number of minutes elapsed between emergency declaration and the augmented ERO position holder at a location necessary to relieve an on-shift position of the emergency response task. As noted above, this analysis assumed a 90 minute augmentation time although the times noted in the Table 1 accident analysis tables reflects the PNP SEP required staffing time of 60 minutes.

2. On-shift personnel complement was based on the proposed post-shutdown on-shift positions expected to be in place following shutdown and permanent removal of fuel from the reactor vessel.
3. Although the temporary absence of a position may be allowed by Tech Specs, the analysis was performed assuming that all required on-shift positions are filled.

4. Each analyzed event occurred during off-normal work hours where the ERO was offsite and all required minimum on-shift positions were filled.

5. On-shift personnel reported to their assigned response locations within timeframes sufficient to allow for performance of assigned actions.

6. On-shift staff had necessary Radiation Worker qualifications to obtain normal dosimetry and enter the radiological control area (RCA) (but not locked high or very high radiation areas) without the aid of an RP technician.

7. Personnel assigned plant operations met the requirements and guidance (analyzed through other programs such as operator training) and were not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.

8. In-plant (manual) safety related operator actions to manipulate components and equipment from locations outside the control room to achieve and maintain SFP cooling was done by a member of the on-shift staff as defined in the unit’s Tech Specs.

9. Fire brigade (FB) staff performance is analyzed through other station programs (e.g., fire drills) and was not evaluated as part of this assessment unless a role/function/task from another major response area was assigned as a collateral duty.

10. Security was not evaluated unless a role or function from another major response area was assigned as a collateral duty.

11. Communications, briefings, and peer checks are acceptable collateral duties.

12. All on-shift staff positions were evaluated, even if they had no known collateral duties, to ensure they can perform the tasks assigned to them. [Ref NSIR/DPR-ISG-01]

13. The analysis specified the resources available to perform “Repair and Corrective Actions” and “Rescue Operations and First Aid” but these may be assigned as collateral duty to a designated on-shift responder.

14. For assessment purposes, NRC notifications were treated as a continuous action per 10CFR50.72(c)(3) and 73.71(b)(1). This means once the initial NRC communications are established, the NRC will request an open line be maintained with the NRC Operations Center.

15. DBA (postulated accident, Condition IV event, or limiting fault) is considered as “Unanticipated occurrences that are postulated for accident analysis purposes but not expected to occur during the life of the plant. A postulated accident could result in sufficient damage to preclude resumption of plant operation. As a result, a greater number and variety of actions would need to be implemented by plant personnel.”
16. DBT assumed a hostile force breached the protected area fence but was neutralized with no adverse consequences to plant safety. Damage inflicted on plant systems, structures and components was not sufficient to interrupt SFP cooling or cause a radiological release. There was no fire significant enough to warrant firefighting efforts prior to arrival of offsite resources and/or the augmented ERO.

17. The analysis used DBA analysis assumptions, inputs, timing of events, plant protective response, and specified manual operator actions and their timing, as documented in the FSAR.

18. In cases where a DBA analysis included a radiological release, and the starting point of the release was not clearly defined, the staffing analysis assumed that the release began 15-minutes after the initiating event.
### VI. APPENDIX A - ANALYZED EVENTS AND ACCIDENTS

<table>
<thead>
<tr>
<th>Event #</th>
<th>Event Type</th>
<th>Summary Description of Event</th>
<th>Plant Mode¹</th>
<th>Reference Document(s)</th>
<th>Event ECL</th>
<th>Analysis Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DBT</td>
<td>Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).</td>
<td>Permanently Defueled</td>
<td>NEI 10-05</td>
<td>Site Area Emergency</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>DBA</td>
<td>Fuel Handling Accident</td>
<td>Permanently Defueled</td>
<td>FSAR Chapter 14.19 (as revised to address permanently defueled conditions)</td>
<td>Alert</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Assumed for Analysis Purpose</td>
<td>Aircraft Probable Threat</td>
<td>Permanently Defueled</td>
<td>10CFR50.54hh(1) RG 1.214</td>
<td>Alert</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Assumed for Analysis Purpose</td>
<td>Control Room Evacuation and maintain SFP cooling</td>
<td>Permanently Defueled</td>
<td>10 CFR Part 50.48</td>
<td>Alert</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Assumed for Analysis Purpose</td>
<td>General Emergency with Radioactive Release and PAR</td>
<td>Permanently Defueled</td>
<td>NEI 10-05</td>
<td>General Emergency</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Assumed for Analysis Purpose</td>
<td>Station Blackout</td>
<td>Permanently Defueled</td>
<td>10CFR50.63</td>
<td>Site Area Emergency</td>
<td>No²</td>
</tr>
<tr>
<td>7</td>
<td>DBA</td>
<td>Dropped Cask</td>
<td>Permanently Defueled</td>
<td>FSAR 14.11</td>
<td>None</td>
<td>No³</td>
</tr>
</tbody>
</table>

¹ Once PNP submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel. PNP will no longer be a nuclear power plant licensed to operate under Part 50.

² Once PNP submits the certification of permanent removal of fuel in accordance with 10 CFR 50.82(a)(1)(ii), per 10 CFR 50.82(a)(2) the 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement of fuel in the reactor vessel and 10 CFR 50.63 will no longer be applicable.

³ No emergency declaration is expected for this event.
VII. APPENDIX B – ON-SHIFT STAFFING ANALYSIS

A. Accident Analysis #1 – Design Basis Threat

1. Accident Summary
   - Land and/or waterborne HOSTILE ACTION directed against the Protected Area by a HOSTILE FORCE. Assume adversary characteristics defined by the Design Basis Threat (DBT).
   - This analysis concluded that sufficient staff was available to simultaneously implement both the Emergency Plan and the Security Plan. The conclusion that sufficient staff was available to implement the Security Plan was based on Security staff personnel not being assigned collateral duties that would prevent the timely performance of their assigned functions. As noted in the analysis assumptions detailed in Section V.B. 10 of this report, the Security organization is assumed to be able to satisfactorily perform all tasks related to Site and Protected Area Access Controls under all event or accident conditions.

2. Accident Specific Assumptions Made
   - The PNP DBT for this analysis assumes a land based threat although a waterborne threat as also considered to determine if it was a more manpower limiting event. This analysis identified that a change to the mode of attack did not impact the staffing analysis or identify the assignment of any additional collateral duties for on-shift personnel which would prevent the timely performance of their assigned functions as specified in the Emergency Plan.
   - This event assumes the threat is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.
   - Assume Spent Fuel Pool Temperature of 125°F.
   - Security notifies the Shift Manager of condition of hostile action occurring within the protected area (Security code RED)
   - Assume all non-security staff is located inside the protected area at their normal work station when the event occurs.
   - Assume all systems function and the spent fuel remains covered. No fuel damage and no release.

3. Procedures for Accident Response
   - AOP-44, Rev. 0, Response to Attack on Palisades
   - EOP-1.0, Rev. 19, Standard Post Trip Actions
   - EI-1, Rev. 57, Emergency Classifications and Actions
   - EI-3, Rev. 33, Communications and Notifications
   - EI-2.2, Rev. 16, Emergency Staff Augmentation
   - EI-12.1, Rev. 19, Personnel Accountability and Assembly
   - ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
### PNP TABLE 1 – ON-SHIFT POSITIONS
#### Analysis # 1 DBT Security Threat

<table>
<thead>
<tr>
<th>Line #</th>
<th>On-shift Position</th>
<th>E-Plan Reference</th>
<th>Augmentation Elapsed Time (min)*</th>
<th>Role in Table # / Line #</th>
<th>Unanalyzed Task?</th>
<th>TMS Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager (SM)</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T2/L1 T5/L1 T5/L3 T5/L5 T5/L6</td>
<td>No</td>
<td>Yes¹</td>
</tr>
<tr>
<td>2</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T2/L2 T5/L7* T5/L8 T5/L9 T5/L13</td>
<td>No</td>
<td>Yes²</td>
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<td>3</td>
<td>Non-Certified Operator #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>FB #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
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<td>5</td>
<td>FB #3</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
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<td>6</td>
<td>FB #4</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>FB #5</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>RP Technician</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>Security</td>
<td>Security Contingency Plan / Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T5/L15</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

² See Section VIII.A

* Expected duration of less than 1 minute. Therefore, Task not included in the TMS included in Section VIII.A.
### PNP TABLE 2 – PLANT OPERATIONS
One Unit – One Control Room

**ANALYSIS # 1 DBT Security Threat**

Minimum Operations Crew Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager</td>
<td>SM</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Unit Supervisor</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
</tbody>
</table>

Other (non-Operations) Personnel Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Mechanic</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Electrician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>I&amp;C Technician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Fire Brigade**

### PNP TABLE 3 – FIREFIGHTING

**ANALYSIS # 1 DBT Security Threat**

<table>
<thead>
<tr>
<th>Line #</th>
<th>Performed by</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This accident does not include the need for firefighting, first aid or search & rescue.
<table>
<thead>
<tr>
<th>LINE</th>
<th>Position Performing Function / Task</th>
<th>Performance Time Period After Emergency Declaration (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-Plant Survey: N/A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>On-site Survey: N/A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Personnel Monitoring: N/A</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Job Coverage: N/A</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Offsite Rad Assessment: N/A</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Other site specific RP (describe): N/A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chemistry Function task #1 (describe) N/A</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Chemistry Function task #2 (describe) N/A</td>
<td></td>
</tr>
</tbody>
</table>

No chemistry or RP job function tasks for the conditions described in the DBT assumptions. RP takes cover as directed.
<table>
<thead>
<tr>
<th>Line#</th>
<th>Function / Task</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Declare the emergency classification level (ECL)</td>
<td>SM</td>
<td>Emergency Planning Training Program / EP Drills</td>
</tr>
<tr>
<td>2</td>
<td>Approve Offsite Protective Action Recommendations</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Approve content of State/local notifications</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>4</td>
<td>Approve extension to allowable dose</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)</td>
<td>SM</td>
<td>Licensed Operator Training Program / Emergency Planning Training Program</td>
</tr>
<tr>
<td>6</td>
<td>ERO notification</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>7</td>
<td>Abbreviated NRC notification for DBT event</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>8</td>
<td>Complete State/local notification form</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>9</td>
<td>Perform State/local notifications</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>10</td>
<td>Complete NRC event notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Activate ERDS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Offsite radiological assessment</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>13</td>
<td>Perform NRC notifications</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>14</td>
<td>Perform other site-specific event notifications</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
B. Accident Analysis #2 – Fuel Handling Accident

1. Accident Summary
   • The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.

2. Accident Specific Assumptions Made
   • This analysis assumes an ALERT declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
   • Additional station personnel, including Operations, Chemistry, and Radiation Protection Technicians, would be on-site during fuel assembly movement. The presence of additional plant personnel would free the on-shift RP Technician to perform dose assessment.

3. Procedures for Accident Response
   • AOP-34, Rev. 0, Fuel Handling Accident
   • EI-1, Rev. 57, Emergency Classification and Actions
   • EI-3, Rev. 33, Communications and Notifications
   • EI-2.2, Rev. 16, Emergency Staff Augmentation
   • EI-12.1, Rev. 19, Personnel Accountability and Assembly
   • ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
### Tables

<table>
<thead>
<tr>
<th>Line #</th>
<th>On-shift Position</th>
<th>E-Plan Reference</th>
<th>Augmentation Elapsed Time (min)</th>
<th>Role in Table # / Line #</th>
<th>Unanalyzed Task?</th>
<th>TMS Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SM</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T2/L1 T5/L1 T5/L3 T5/L5 T5/L6</td>
<td>No</td>
<td>Yes¹</td>
</tr>
<tr>
<td>2</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T2/L2 T5/L8 T5/L9 T5/L13</td>
<td>No</td>
<td>Yes²</td>
</tr>
<tr>
<td>3</td>
<td>Non-Certified Operator #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>FB #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>FB #3</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>FB #4</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>FB #5</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>RP Technician</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T4/L2 T5/L12</td>
<td>No</td>
<td>Yes³</td>
</tr>
<tr>
<td>9</td>
<td>Security</td>
<td>Security Contingency Plan / Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T5/L15</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

² See Section VIII.A

³ See Section II.C.2 for the exception taken for the Radiation Protection Technician to perform dose assessment. No Time Motion Study or corrective action required.

---

1. The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

2. See Section VIII.A

3. See Section II.C.2 for the exception taken for the Radiation Protection Technician to perform dose assessment. No Time Motion Study or corrective action required.
## PNP TABLE 2 – PLANT OPERATIONS
One Unit – One Control Room
ANALYSIS # 2 – Fuel Handling Accident

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager</td>
<td>SM</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Unit Supervisor</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
</tbody>
</table>

Other (non-Operations) Personnel Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Mechanic</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Electrician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>I&amp;C Technician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Fire Brigade

## PNP TABLE 3 – FIREFIGHTING
ANALYSIS # 2 – Fuel Handling Accident

<table>
<thead>
<tr>
<th>Line #</th>
<th>Performed by</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This accident does not include the need for firefighting, first aid or search & rescue.
<table>
<thead>
<tr>
<th>LINE</th>
<th>Position Performing Function / Task</th>
<th>Performance Time Period After Emergency Declaration (minutes)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-Plant Survey: N/A (Rad Monitors in use)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>On-site Survey: RP</td>
<td>X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>3</td>
<td>Personnel Monitoring: N/A</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Job Coverage: N/A</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Offsite Rad Assessment: (Included in Table 5)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Other site specific RP (describe): N/A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chemistry Function task #1 (describe): N/A</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Chemistry Function task #2 (describe): N/A</td>
<td></td>
</tr>
</tbody>
</table>

The time* to commence and complete the task is estimated.

The on-shift RP Technician will perform the above task as directed by the Shift Manager. Tasks are not time critical. The on-shift RP Technician is available for dose assessment if a release occurs.
### PNP TABLE 5 – EMERGENCY PLAN IMPLEMENTATION

**Analysis #2 – Fuel Handling Accident**

<table>
<thead>
<tr>
<th>Line #</th>
<th>Function / Task</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Declare the emergency classification level (ECL)</td>
<td>SM</td>
<td>Emergency Planning Training Program / EP Drills</td>
</tr>
<tr>
<td>2</td>
<td>Approve Offsite Protective Action Recommendations</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Approve content of State/local notifications</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>4</td>
<td>Approve extension to allowable dose</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)</td>
<td>SM</td>
<td>Licensed Operator Training Program / Emergency Planning Training Program</td>
</tr>
<tr>
<td>6</td>
<td>ERO notification</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>7</td>
<td>Abbreviated NRC notification for DBT event</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Complete State/local notification form</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>9</td>
<td>Perform State/local notifications</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>10</td>
<td>Complete NRC event notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Activate ERDS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Offsite radiological assessment</td>
<td>RP Technician</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>13</td>
<td>Perform NRC notifications</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>14</td>
<td>Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Personnel Accountability</td>
<td>Security Officer</td>
<td>Security Training Program</td>
</tr>
</tbody>
</table>
C. Accident Analysis #3 – Aircraft Probable Threat

1. Accident Summary
   - The analysis includes all emergency response actions taken prior to an aircraft impact in accordance with RG 1.214 for an aircraft threat that is greater than 5 minutes, but less than 30 minutes from the site, and considers the dispersal of the site fire brigade away from target areas for firefighting.
   - The analysis does not include a scenario or response actions taken during or after a crash.

2. Accident Specific Assumptions Made
   - The Shift Manager receives the call from the NRC of probable aircraft threat.
   - All non-security on-shift personnel are inside the protected area fence at their normal workstation.

3. Procedures for Accident Response
   - AOP-44, Rev. 0, Response to Security Threats
   - EOP-1.0, Rev. 19, Standard Post Trip Actions
   - EI-1, Rev. 57, Emergency Classification and Actions
   - EI-3, Rev. 33, Communications and Notifications
   - EI-2,2, Rev. 16, Emergency Staff Augmentation
   - EI-12.1, Rev. 19, Personnel Accountability and Assembly
   - ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
### 4. Tables

<table>
<thead>
<tr>
<th>Line #</th>
<th>On-shift Position</th>
<th>E-Plan Reference</th>
<th>Augmentation Elapsed Time (min)</th>
<th>Role in Table # / Line #</th>
<th>Unanalyzed Task?</th>
<th>TMS Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SM</td>
<td>Emergency Plan Table 8.4</td>
<td>60</td>
<td>T2/L1 T5/L1 T5/L3 T5/L5 T5/L6</td>
<td>No</td>
<td>Yes¹</td>
</tr>
<tr>
<td>2</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>T2/L2 T5/L9 T5/L13</td>
<td>No</td>
<td>Yes²</td>
</tr>
<tr>
<td>3</td>
<td>Non-Certified Operator #2</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>FB #2</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>FB #3</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>FB #4</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>FB #5</td>
<td>Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>RP Technician</td>
<td>Emergency Plan Table 8.4</td>
<td>60</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>Security</td>
<td>Security Contingency Plan / Emergency Plan Table 8.4</td>
<td>N/A</td>
<td>T5/L15</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

² See bounding analysis in Section VIII.A
### PNP TABLE 2 – PLANT OPERATIONS & SAFE SHUTDOWN

**One Unit – One Control Room**

**Analysis #3 – Aircraft Potential Threat**

Minimum Operations Crew Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager</td>
<td>SM</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Unit Supervisor</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
</tbody>
</table>

Other (non-Operations) Personnel Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Mechanic</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Electrician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>I&amp;C Technician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Fire Brigade**

### PNP TABLE 3 – FIREFIGHTING

**Analysis #3 – Aircraft Probable Threat**

<table>
<thead>
<tr>
<th>Line #</th>
<th>Performed by</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This accident does not include the need for firefighting, first aid or search & rescue. The Fire Brigade relocates to the Training Center.
<table>
<thead>
<tr>
<th>Position Performing Function / Task</th>
<th>Performance Time Period After Emergency Declaration (minutes)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LINE 1</strong> In-Plant Survey: N/A</td>
<td>0-5</td>
</tr>
<tr>
<td><strong>LINE 4</strong> Job Coverage: N/A</td>
<td>0-5</td>
</tr>
<tr>
<td>(Included in Table 5 – N/A)</td>
<td>0-5</td>
</tr>
<tr>
<td><strong>LINE 6</strong> Other site specific RP</td>
<td>0-5</td>
</tr>
<tr>
<td>(describe): N/A**</td>
<td>0-5</td>
</tr>
<tr>
<td><strong>LINE 7</strong> Chemistry Function task</td>
<td>0-5</td>
</tr>
<tr>
<td>#1 (describe) – N/A</td>
<td>0-5</td>
</tr>
<tr>
<td><strong>LINE 8</strong> Chemistry Function task</td>
<td>0-5</td>
</tr>
<tr>
<td>#2 (describe) – N/A</td>
<td>0-5</td>
</tr>
</tbody>
</table>

*Times are estimated.

** The Radiation Protection Technician has assigned no tasks in response to this event and would be available, if needed, to maintain continuous communications with the NRC during the event.
<table>
<thead>
<tr>
<th>Line #</th>
<th>Function / Task</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Declare the emergency classification level (ECL)</td>
<td>SM</td>
<td>Emergency Planning Training Program / EP Drills</td>
</tr>
<tr>
<td>2</td>
<td>Approve Offsite Protective Action Recommendations</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Approve content of State/local notifications</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>4</td>
<td>Approve extension to allowable dose</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)</td>
<td>SM</td>
<td>Licensed Operator Training Program / Emergency Planning Training Program</td>
</tr>
<tr>
<td>6</td>
<td>ERO notification</td>
<td>SM</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>7</td>
<td>Abbreviated NRC notification for DBT event</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Complete State/local notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Perform State/local notification form</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>10</td>
<td>Complete NRC event notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Activate ERDS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Offsite radiological assessment</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>13</td>
<td>Perform NRC notifications</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>14</td>
<td>Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Personnel Accountability</td>
<td>Security</td>
<td>Security Training Program</td>
</tr>
</tbody>
</table>

Note: Lines 8 and 10 are not performed during an aircraft threat.
D. Accident Analysis #4 – Control Room Fire Requiring Evacuation and Maintain SFP Cooling

1. Accident Summary
   - This event involves a large transient fire requiring evacuation of the Control Room. The event has the potential to include shorts and/or spurious signals producing potential to lose SFP cooling capabilities.

2. Accident Specific Assumptions Made
   - Assumed control room staff does not have time to perform any procedural actions other than declare the Alert and make the plant announcement before leaving the control room.

3. Procedures for Accident Response
   - AOP-40, Rev. 2, Fire Which Threatens Safety Related Equipment
   - AOP-41, Rev. 3, Alternate Safe Shutdown Procedure
   - EI-1, Rev. 57, Emergency Classification and Actions
   - EI-3, Rev. 33, Communications and Notifications
   - EI-2, Rev. 16, Emergency Staff Augmentation
   - EI-12.1, Rev. 19, Personnel Accountability and Assembly
   - ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
4. Tables

PNP TABLE 1 – ON-SHIFT POSITIONS
Analysis #4 – CR Evacuation & SFP Cooling

<table>
<thead>
<tr>
<th>Line #</th>
<th>On-shift Position</th>
<th>E-Plan Reference</th>
<th>Augmentation Elapsed Time (min)</th>
<th>Role in Table # / Line #</th>
<th>Unanalyzed Task?</th>
<th>TMS Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SM</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T2/L1 T5/L1 T5/L3 T5/L5 T5/L6</td>
<td>No</td>
<td>Yes¹</td>
</tr>
<tr>
<td>2</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T2/L2 T5/L8 T5/L9 T5/L13</td>
<td>No</td>
<td>Yes²</td>
</tr>
<tr>
<td>3</td>
<td>Non-Certified Operator #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T3/L1</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>FB #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T3/L2</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>FB #3</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T3/L3</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>FB #4</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T3/L4</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>FB #5</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T3/L5</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>RP Technician</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>Security</td>
<td>Security Contingency Plan / Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

² See Section VIII.A
### PNP TABLE 2 – PLANT OPERATIONS
One Unit – One Control Room
Analysis #4 – CR Evacuation & SFP Cooling

Minimum Operations Crew Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager</td>
<td>SM</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Unit Supervisor</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
</tbody>
</table>

Other (non-Operations) Personnel Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Mechanic</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Electrician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>I&amp;C Technician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Fire Brigade

### PNP TABLE 3 – FIREFIGHTING
Analysis #4 – CR Evacuation & SFP Cooling

<table>
<thead>
<tr>
<th>Line #</th>
<th>Performed by</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-Certified Operator</td>
<td>Fire Protection Program</td>
</tr>
<tr>
<td>2</td>
<td>FB #2</td>
<td>Fire Protection Program</td>
</tr>
<tr>
<td>3</td>
<td>FB #3</td>
<td>Fire Protection Program</td>
</tr>
<tr>
<td>4</td>
<td>FB#4</td>
<td>Fire Protection Program</td>
</tr>
<tr>
<td>5</td>
<td>FB#5</td>
<td>Fire Protection Program</td>
</tr>
</tbody>
</table>
### PNP TABLE 4 – RADIATION PROTECTION AND CHEMISTRY
#### Analysis #4 – CR Evacuation & SFP Cooling

<table>
<thead>
<tr>
<th>Line</th>
<th>Position Performing Function / Task</th>
<th>Performance Time Period After Emergency Declaration (minutes)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-Plant Survey: N/A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>On-site Survey: N/A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Personnel Monitoring: N/A</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Job Coverage: N/A</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Offsite Rad Assessment: (Included in Table 5)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Other site specific RP (describe): N/A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chemistry Function task #1 (describe) – N/A</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Chemistry Function task #2 (describe) – N/A</td>
<td></td>
</tr>
</tbody>
</table>

No specific time critical tasks were identified for RP or Chemistry for this event.
<table>
<thead>
<tr>
<th>Line #</th>
<th>Function / Task</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Declare the emergency classification level (ECL)</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program / EP Drills</td>
</tr>
<tr>
<td>2</td>
<td>Approve Offsite Protective Action Recommendations</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Approve content of State/local notifications</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>4</td>
<td>Approve extension to allowable dose</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)</td>
<td>Shift Manager</td>
<td>Licensed Operator Training Program / Emergency Planning Training Program</td>
</tr>
<tr>
<td>6</td>
<td>ERO notification</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>7</td>
<td>Abbreviated NRC notification for DBT event</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Complete State/local notification form</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>9</td>
<td>Perform State/local notifications</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>10</td>
<td>Complete NRC event notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Activate ERDS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Offsite radiological assessment</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>13</td>
<td>Perform NRC notifications</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>14</td>
<td>Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Personnel Accountability</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
E. Accident Analysis #5 – General Emergency with Radioactive Release and PAR

1. Accident Summary (Assumed for Staffing Analysis Purpose)
   - The FHA assumes the drop of a spent fuel assembly onto the spent fuel racks within the SFP resulting in breaking the fuel rods.
   - A General Emergency is declared when the Shift Manager is given a dose assessment update that projects >1 Rem TEDE dose at the site boundary.

2. Accident Specific Assumptions Made
   - The FSAR does not contain detailed radiological conditions or release rates to determine an EAL classification. This analysis, therefore, assumed a General Emergency declaration based on area radiation monitors reaching levels to prompt an emergency declaration.
   - Additional plant personnel, including Operations, Chemistry, and Radiation Protection Specialists, would be on-site during fuel assembly movement. The presence of additional plant personnel would free the on-shift RP Technician to perform dose assessment.

3. Procedures for Accident Response
   - AOP-34, Rev. 0, Fuel Handling Accident
   - EI-1, Rev. 57, Emergency Classification and Actions
   - EI-3, Rev. 33, Communications and Notifications
   - EI-2.2, Rev. 16, Emergency Staff Augmentation
   - EI-12.1, Rev. 19, Personnel Accountability and Assembly
   - ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
### PNP TABLE 1 – ON-SHIFT POSITIONS

**Analysis #5 – GE with PAR**

<table>
<thead>
<tr>
<th>Line #</th>
<th>On-shift Position</th>
<th>E-Plan Reference</th>
<th>Augmentation Elapsed Time (min)</th>
<th>Role in Table # / Line #</th>
<th>Unanalyzed Task?</th>
<th>TMS Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SM</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T2/L1, T5/L1, T5/L2, T5/L3, T5/L4, T5/L5, T5/L6</td>
<td>No</td>
<td>Yes¹</td>
</tr>
<tr>
<td>2</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T2/L2, T5/L8, T5/L9, T5/L13</td>
<td>No</td>
<td>Yes²</td>
</tr>
<tr>
<td>3</td>
<td>Non-Certified Operator #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>FB #2</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>FB #3</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>FB #4</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>FB #5</td>
<td>Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>RP Technician</td>
<td>Emergency Plan Figure 5-2</td>
<td>60</td>
<td>T4/L4, T5/L12</td>
<td>No</td>
<td>Yes³</td>
</tr>
<tr>
<td>9</td>
<td>Security</td>
<td>Security Contingency Plan / Emergency Plan Figure 5-2</td>
<td>N/A</td>
<td>T5/L15</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

¹ The Shift Manager is assigned the responsibility to make ERO notifications. A TMS was conducted during development of the initial OSA and demonstrated that the Shift Manager was able to maintain Emergency Direction and Control during the approximate 2 minutes it took to notify the ERO. No further analysis or TMS is required to verify timely and effective implementation.

² See Section VIII.A

³ See Section II.C.2 for the exception taken for the Radiation Protection Specialist to perform dose assessment. No Time Motion Study or corrective action required.
### PNP TABLE 2 – PLANT OPERATIONS & SAFE SHUTDOWN
**One Unit – One Control Room**
**Analysis #5 – GE with PAR**

Minimum Operations Crew Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shift Manager</td>
<td>SM</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Unit Supervisor</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
</tbody>
</table>

Other (non-Operations) Personnel Necessary to Implement AOPs if Applicable

<table>
<thead>
<tr>
<th>Line #</th>
<th>Generic Title/Role</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Mechanic</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>Electrician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>I&amp;C Technician</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Other</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Fire Brigade

### PNP TABLE 3 – FIREFIGHTING
**Analysis #5 – GE with PAR**

<table>
<thead>
<tr>
<th>Line #</th>
<th>Performed by</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

This accident does not include the need for firefighting, first aid or search & rescue.
<table>
<thead>
<tr>
<th>LINE</th>
<th>Position Performing Function / Task</th>
<th>Performance Time Period After Emergency Declaration (minutes)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-Plant Survey: RP</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>On-site Survey: RP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Personnel Monitoring: N/A</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Job Coverage: As directed by the SM</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>Offsite Rad Assessment: See Table 5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Other site specific RP (describe): N/A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chemistry Function task #1 (describe) N/A</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Chemistry Function task #2 (describe) N/A</td>
<td></td>
</tr>
</tbody>
</table>

The on-shift Radiation Protection Specialist will perform the above task as directed by the Shift Manager. Tasks are not time critical.

* Times indicated above are estimated.
<table>
<thead>
<tr>
<th>Line #</th>
<th>Function / Task*</th>
<th>On-Shift Position</th>
<th>Task Analysis Controlling Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Declare the emergency classification level (ECL)</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program / EP Drills</td>
</tr>
<tr>
<td>2</td>
<td>Approve Offsite Protective Action Recommendations</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>3</td>
<td>Approve content of State/local notifications</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>4</td>
<td>Approve extension to allowable dose</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>5</td>
<td>Notification and direction to on-shift staff (e.g., to assemble, evacuate, etc.)</td>
<td>Shift Manager</td>
<td>Licensed Operator Training Program / Emergency Planning Training Program</td>
</tr>
<tr>
<td>6</td>
<td>ERO notification</td>
<td>Shift Manager</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>7</td>
<td>Abbreviated NRC notification for DBT event</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>Complete State/local notification form</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>9</td>
<td>Perform State/local notifications</td>
<td>Non-Certified Operator #1</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>10</td>
<td>Complete NRC event notification form</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>11</td>
<td>Activate ERDS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>Offsite radiological assessment</td>
<td>RP Technician</td>
<td>Emergency Planning Training Program</td>
</tr>
<tr>
<td>13</td>
<td>Perform NRC notifications</td>
<td>Non-Certified Operator #1</td>
<td>Licensed Operator Training Program</td>
</tr>
<tr>
<td>14</td>
<td>Perform other site-specific event notifications (e.g., Duty Plant Manager, INPO, ANI, etc.)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>Personnel Accountability</td>
<td>Security</td>
<td>Security Training Program</td>
</tr>
</tbody>
</table>
VIII. APPENDIX C – TIME MOTION STUDIES SUPPORTING THE STAFFING ANALYSIS

A. Multiple Scenarios (Bounding for all Analyses)

TIME MOTION STUDY OF OVERLAPPING TASKS

Multiple Scenarios

TASK 1: Complete the State/Local Notification Form
JOB: Non-Certified Operator

TASK 2: Perform NRC Notification
JOB: Non-Certified Operator

TASK 3: Perform Event Mitigation
JOB: Non-Certified Operator
PURPOSE:

Perform a Time Motion Study to evaluate whether the performance of actions assigned to the Non-Certified Operator #1 are acceptable task overlaps to the primary emergency plan function of event mitigation.

This analysis is considered bounding for all events.

NOTE:

Times for the activities performed are based on operating experience (e.g., drills, real events, etc.) and/or informed judgment with consideration given to the limited actions in a permanently shut down and defueled condition. Validation of actual times will be performed with updated procedures.

CONCLUSION:

The Time Motion Study demonstrated the Non-Certified Operator could perform the tasks of completing State, local and NRC notifications successfully, individually or in series, without impacting the ability of the Non-Certified Operator to remain in role providing support to the Shift Manager during the emergency.

LOCATION:

The response to this event was determined by conducting a discussion of the event with the applicable department personnel.

REQUIRED TOOLS/EQUIPMENT:

A. AOP-34, Rev. 0, Fuel Handling Accident
B. EI-1, Rev. 57, Emergency Classification and Actions
C. EI-3, Rev. 33, Communications and Notifications
D. EI-2, Rev. 16, Emergency Staff Augmentation
E. EI-12.1, Rev. 189 Personnel Accountability and Assembly
F. ADMIN-4, Rev. 59, Operations Organization, Responsibilities and Conduct
<table>
<thead>
<tr>
<th>Event: #5</th>
<th>Site: Palisades</th>
<th>Position: Non-Certified Operator</th>
<th>Line #: 8, 9, 13</th>
</tr>
</thead>
</table>

**Function / Responsibility (Task) Analysis Template**

<table>
<thead>
<tr>
<th>Function</th>
<th>Responsibility (Task)</th>
<th>Action Step</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Off-Site Notification</td>
<td>1.1 Complete the notification form.</td>
<td>1.1.1 Retrieve Procedure EI-3, Communications and Notifications”.</td>
<td>2 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1.2 Enter required information.</td>
<td>5 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1.3 Shift Manager approval of notification form.</td>
<td>Performed by Shift Manager 2 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TASK duration for complete notification form</strong></td>
<td>9 min</td>
</tr>
<tr>
<td></td>
<td>1.2 Transmit the notification form</td>
<td>1.2.1 Perform state/local notification.</td>
<td>2 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TASK duration for state/local notification</strong></td>
<td>2 min</td>
</tr>
<tr>
<td>2. NRC Notification</td>
<td>2.1 Complete NRC event notification</td>
<td>2.1.1 Prepare Event Notification Worksheet.</td>
<td>0 min (performed above)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.1.2 Complete the NRC Notification Worksheet immediately after state notifications and not later than one hour after the declaration of an emergency.</td>
<td>0 min (performed above)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.1.3 Perform NRC Notification.</td>
<td>2 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TASK duration to complete NRC notification</strong></td>
<td>2 min</td>
</tr>
<tr>
<td>3. Event Mitigation</td>
<td>3.1 Assess and respond to plant conditions</td>
<td>3.1.1 Provide assistance to the Shift Manager in mitigating the event as directed.</td>
<td>10 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TASK duration for event mitigation</strong></td>
<td>10 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL DURATION</strong></td>
<td><strong>23 min</strong></td>
</tr>
</tbody>
</table>

Task Performer: Bret Baker Position: Assistant Ops Manager Date: 7/12/2017
Evaluator: Dan Malone Position: EP Manager Date: 7/12/2017
IX. OVERLAP OF TASKS ACTIVITIES OR OTHER CONFLICTS IDENTIFIED

A. Overlap Requiring Compensatory Measures
   None

X. REFERENCES

- NEI 10-05, Rev 0, Assessment of On-Shift Emergency Response Organization Staffing and Capabilities
- NSIR DPR-ISG-01, Interim Staff Guidance – Emergency Planning for Nuclear Power Plants
- NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- Palisades Emergency Plan, Rev 29
- Palisades On-Shift Staffing Analysis Report, Rev. 3, August 28, 2015
Attachment 6

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

Emergency Response Organization Task Analysis

(8 Pages)
|---------------------|----------------------|-----------------------------------------------|---------------------|---------------------|-----------------|-------------|--------------|---------------|-------------|----------------------|
| Technical Advisor   | - Maintain contact with the TIE and Command Room to obtain current plant and emergency status.  
- Monitor plant computer systems parameters.  
- Recommend actions or classification of emergency;  
- Support NRC decision making/determination. | - Review ERO/DRS communication with the plant, coordinate with Plant, and determine ERO to be completed.  
- Coordinate activities related to emergency;  
- Review ERO/DRS communication. | - Task from AEC & Logistics Coord.  
- Task from AEC & Logistics Coord.  
- Task from AEC & Logistics Coord.  
- Task from AEC & Logistics Coord.  
- Task from ERO Communication.  
- Task from ERO Manager.  
- Task from ERO Manager.  
- Task from ERO Manager.  
- Task from ERO Security Coord.  
- Task from ERO Security Coord.  
- Task from AEC Technical Advisor.  
- Task from AEC Tech Advisor (Change Braid Map Coord. to In-Plant).  
- Task from AEC Tech Advisor (Change Press Release Writer to Company Spokesman and move reference to Technical Advisor). | N/A | N/A | N/A | N/A | N/A | N/A |
| OGF Manager         | - Study articles of the ERF protocol.  
- Ensure staffing and timely activation of the OGF.  
- Obtain submittal resources through the Administrative Logistical Coordinator when necessary.  
- Brief and advise authority authorities regarding to the ERO.  
- Assist the Administrative Coordinator with facility effectiveness.  
- Ensure current and timely State and local notifications are made within regulatory requirements.  
- Ensure WBE/AO or status boards are maintained.  
- Notify Energy, Corporate Office and Corporate Emergency Center. | - Study articles of the ERF protocol.  
- Ensure staffing and timely activation of the OGF.  
- Obtain submittal resources through the Administrative Logistical Coordinator when necessary.  
- Brief and advise authority authorities regarding to the ERO.  
- Assist the Administrative Coordinator with facility effectiveness.  
- Ensure current and timely State and local notifications are made within regulatory requirements.  
- Ensure WBE/AO or status boards are maintained.  
- Notify Energy, Corporate Office and Corporate Emergency Center. | - Task from OGF (Task F2).  
- Task from OGF (Task F3).  
- Task from OGF (Task F5).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  | Yes | No | No | N/A | N/A |
| OGF Communicator    | - Retrieve and review information from on-site EP.  
- Ensure EP is notified of information received of significant changes in plant conditions (e.g., start of a removal, UNSA, FA; conditions).  
- Document information on the required forms or Weekly.  
- Assist the ERO Manager with other new regulatory notification or communications. | - Retrieve and review information from on-site EP.  
- Ensure EP is notified of information received of significant changes in plant conditions (e.g., start of a removal, UNSA, FA; conditions).  
- Document information on the required forms or Weekly.  
- Assist the ERO Manager with other new regulatory notification or communications. | - Task from OGF (Task F1).  
- Task from OGF (Task F3).  
- Task from OGF (Task F5).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  | Yes | No | No | N/A | N/A |
| OGF Log Review      | - Maintain chronological log of emergency status and ERO activities on WEBEOC, other acceptable method.  
- Ensure transcripts of facility briefs by prompting the emergency director of the briefing schedule/Procedure.  
- Support the ERO Manager / DJ as requested. | - Maintain chronological log of emergency status and ERO activities on WEBEOC, other acceptable method.  
- Ensure transcripts of facility briefs by prompting the emergency director of the briefing schedule/Procedure.  
- Support the ERO Manager / DJ as requested. | - Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  | Yes | No | No | N/A | N/A |
| JIC Office Liaison  | - Obtain plant information and prepare the office agency liaison in the ERO and the other liaison are briefed as the plant conditions. | - Obtain plant information and prepare the office agency liaison in the ERO and the other liaison are briefed as the plant conditions. | - Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  
- Task from OGF (Task JIC).  | Yes | No | No | N/A | N/A |
| AEC & Logistics Coord. | - Manage/coordinate support of the accident/instigation for emergency;  
- Manage logistical support for supporting the accident/instigation emergency mission such as:  
- Support support personnel or equipment, meals, lodging, etc.  
- Coordinate access security measures in the OGF.  
- Utilize emergency transportation/hotel when directed (where applicable). | - Manage/coordinate support of the accident/instigation for emergency;  
- Manage logistical support for supporting the accident/instigation emergency mission such as:  
- Support support personnel or equipment, meals, lodging, etc.  
- Coordinate access security measures in the OGF.  
- Utilize emergency transportation/hotel when directed (where applicable). | - Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  
- Task from OGF Technical Advisor.  | Yes | No | No | N/A | N/A |
|---------------------|----------------------|-------------------------------------------|---------------------|---------------------|-----------------|-------------|------------|-----------------|------------------|
| EP Specialist       | F1. Maintain facility equipment (computers, related hardware & communications) to ensure adequate operations  
F2. Resolve any IT-related notifications  
F3. Verify/perform EPD activities  
F4. Assist with issues related to WEDEC, if available  
F5. Support the tailoring of activities in the E2P  
F6. Others data from office monitoring teams report, environmental and radiological data, local plant data  
F7. Perform dose projection calculations using plant data and office monitoring team data  
F8. Perform possible predictive (Level II) and worst case dose projection when directed  
F9. Provide office dose properties information to the FAC  
F10. Maintain available parameter calculations to address changes that affect dose assessment  
F11. Perform dose projections using primary and backup methods | | Eliminate position  
| | | | No | | | | | 609, EP-600, 305, R.11 | | |
| Base Resident       | F1. Support the tailoring of activities in the E2P  
F2. Others data from office monitoring teams report, environmental and radiological data, local plant data  
F3. Perform dose projection calculations using plant data and office monitoring team data  
F4. Maintain available parameter calculations to address changes that affect dose assessment  
F5. Perform dose projections using primary and backup methods | | Eliminate position  
| | | | No | | | | | 609, EP-600, 305, R.12 | | |
| Off-site Team Facilitator | F1. Maintain communication with the field monitoring teams during (EOF)  
F2. Update and direct OMT as follows radiological (field information)  
F3. Support one-of-a-kind (TSC) plant tracking strategy  
F4. Log communications with OMT to include date, location, results, and related documents  
F5. Ensure radiological information is communicated to the FAC for possible modifications to the field calculations  
F6. Support coordination of efforts in the area of office monitoring teams data with state radiological personnel  
F7. Ensure team is aware of change plant/field radiological conditions  
F8. Support one-of-a-kind or plant team coordination  
F9. Maintain records of all notifications and communications  
F10. Make periodic updates (Technical Data Sheets) to office agencies  
F11. Provide the Offsite Communicator with reports of additional information from EPC, State and County liaison agencies  
F12. Maintain records of all communications  
F13. Contact the OMT with any security emergency preparedness as requested  
F14. Test emergency preparedness plans and procedures  | | Eliminate position  
| | | | No | | | | | 609, EP-600, 305, R.9 | | |
| State/County Communicator | E1. Maintain specific position (EOF)  
| | | | | | | | | | | |
| Security Coordinator | E1. Maintain specific position (EOF)  
| | | | | | | | | | | |
| Security Staff | E1. Maintain specific position (EOF) | | | | | | | | | | |
EPO POSITION MATRIX

Current EPO Position

ENR-901 Tasks [F1]

<table>
<thead>
<tr>
<th>Task #</th>
<th>Description</th>
<th>Implementing Actions</th>
<th>Position Eliminated?</th>
<th>Task Assigned to?</th>
<th>Win Staffing</th>
<th>Key SMs [F1]</th>
<th>Procedure(s) [F2]</th>
<th>Plan section</th>
<th>Regulatory Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Maintain log</td>
<td>- eliminate task</td>
<td>No</td>
<td>N/A</td>
<td>[F1]</td>
<td>[F1]</td>
<td>No</td>
<td>ENR-901, J2, K.1</td>
<td>17.06.104.1 A.6.8.1.4 (I.1) 5.5.2.2</td>
</tr>
</tbody>
</table>

TECHNICAL SUPPORT CENTER

Emergency Shift Manager

F1. Maintain accurate, complete, and current status of the TSC.
F2. Assure nonemergent, unaltered access to the TSC and OCS, and the safety-related information.
F3. Provide information and recommendations to the CE to regarding the classification of an emergency.
F4. Prepare and facilitate facility briefings.
F5. Verify event classifications.
F6. Issue timely OMS notifications.
F7. Perform accident assessment to prioritize mitigation actions.
F8. Coordinate the activities of the CE, TSC, and OCS.
F9. Direct personnel repositioning, assembly, and accountability of non-essential personnel.
F10. Provide information and recommendations to the CE regarding plant activities.
F11. Assist the CE in operation and plant conditions for classifications and PHM determination.
F12. Direct the organization, coordination, and prioritization of repair corrective action teams.
F13. Directly conduct protective actions.
F14. Assist the emergency classification team in issuing of the CE's TSC general and OCS directives.
F15. Make operational decisions involving the safety of the plant and its personnel and make recommendations to the CE on necessary actions.
F16. Indicate immediate correction actions to limit or prevent the emergency involving the presence of CN (ENR-901, J2.1) where appropriate.
F17. Implement emergency management procedures.
F18. Direct repositioning to an alternate location.
F19. Integrate offline responders with on-site response efforts when required.
F20. Perform emergency termination duties.

F1. Assess staffing/depletion of the TSC.
F2. Notify OPM if operational conditions exist.
F3. Reconcile and implement all technical aspects of accident mitigation for the emergency.
F4. Perform technical assessments and communicate the conclusions to the PMP.
F5. Set priorities for the TSC personnel/OCS Teams.
F6. Assist the OPM to make operational decisions concerning the safety of the plant.
F7. Overview the activities for relocation to an alternate location.
F8. Direct the tracking of plant configuration changes.
F9. Directly initiate the TSC, when the emergency is terminated.

F1. Establish/activate the TSC function with Chairman.
F2. Maintain log.
F3. Update emergency.
F4. Participate in parallel briefings with OMP.
F5. Direct EPM questions to the Operations Coordinator.
F6. Establish communications accessed with the EPM for emergency support functions.
F7. Notify PMP vendor and other vendors of emergency conditions, and request.
F8. Synchronize the TSC function with Chairman.
F10. Notify OPM if operational.
F11. Participate in parallel briefings with OPM.
F12. Direct EPM questions to the Operations Coordinator.
F13. Establish communications accessed with the EPM for emergency support functions.
F14. Notify PMP vendor and other vendors of emergency conditions, and request.
F15. Establish/activate the TSC function with Chairman.
F17. Notify OPM if operational.
F18. Participate in parallel briefings with OPM.
F19. Direct EPM questions to the Operations Coordinator.
F20. Establish communications accessed with the EPM for emergency support functions.
F21. Notify PMP vendor and other vendors of emergency conditions, and request.

F1. Coordinate TSC efforts in determining the nature and extent of emergency pertinent to equipment and plant facilities in support of Central Region actions.
F2. Perform accident assessment activities.
F3. Provide assistance to initiate initial correction actions to limit or prevent the emergency involving the presence of CN (ENR-901, J2.1) where appropriate, and specifically when addressing unforeseen Accident Management Situations (SM.50.0).
F4. Recommend emergency actions and deliberate actions to the Central Region in support of the OMP.
F5. Appraise emergency specific procedures, and implement, as required, under the provisions of 10 CFR 50.54(b)(3).
F6. Recommend changes to plant practices.
F7. Assist the Maintenance Coordinator in prioritizing the priority assigned to OCS activities.
F8. Coordinate additional staffing for the Central Region if requested by the CE.

F1. Monitor loss product barrier and plant status.
F2. Complete the essential information form to support periodic briefings as required by the PMP.
F3. Provide technical support to OCS teams.
F5. Complete the essential information form to support periodic briefings as required by the PMP.
F6. Provide technical support to OCS teams.

F1. Determine floor proximity status and plant status.
F2. Complete the essential information form to support periodic briefings as required by the PMP.
F3. Provide technical support to OCS teams.
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Radiological Coordinator</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1. Assess radiological conditions to develop radiological plans.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2. Review the CEC changes related to radiological conditions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Obtain evaluative data on plant conditions such as meteorological and radiological monitoring readings, and other pertinent data.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4. Ensure that appropriate borey procedures have been implemented for onsite personnel when a radiological incident has occurred.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5. Recommend authorization of personnel emergency exposure limits.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>6. Advise the TSC Manager when use of Rad should be considered and coordinate the issuance of training.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7. Recommend monitoring based on environmental conditions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Advise the TSC Manager and EOP Radiological Assessment Coordinator of changes in radiological exposure status.</td>
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<td>9. Assist in planning, nuclear operations and provide monitoring services as required, including the transfer of liquid and/or contaminated equipment.</td>
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<td>10. Assist in the preparation of technical documentation.</td>
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<td>11. Provide the Manager and/or other personnel personnel, as required.</td>
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<td>12. Advise the TSC Coordinator of the OSC if changes in plant conditions or equipment that may change radiological conditions.</td>
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<tr>
<td><strong>Engineering Coordinator</strong></td>
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<tr>
<td>1. Provide technical guidance to support repair activities.</td>
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<tr>
<td>2. Recommend actions to prevent severe core damage and containment failure and reduce radiological releases.</td>
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<tr>
<td>3. Coordinate engineering work requests with the engineering support team.</td>
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<td>4. Provide guidance to the TSC Manager, upon request.</td>
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<td>5. Support SAMS activities and strategies.</td>
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<td>6. Direct and coordinating of parameters.</td>
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<td>7. Direct the development of engineering repair procedures to support emergency repairs.</td>
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<td>8. Track plant configuration changes.</td>
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<tr>
<td><strong>Maintenance Coordinator</strong></td>
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<tr>
<td>1. Communicate the request for repair and corrective teams to the OSC/Work Control Coordinator.</td>
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<tr>
<td>2. Prioritize the requests with the TSC Manager.</td>
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<tr>
<td>3. Provide operational guidance and recommendations on equipment operations.</td>
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<tr>
<td>4. Identify emergency requests that can be undertaken to reactor and maintain equipment operability and plant safety.</td>
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<td>5. Assist in the prioritization of work.</td>
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<tr>
<td>6. Assist the OSC Coordinator in preparing for work repair teams in the area.</td>
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<tr>
<td>7. Maintain manpower data to ensure OSC is adequately staffed to support activities.</td>
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<td>8. Maintain a log and status of OSC work assignments.</td>
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<tr>
<td><strong>Communicator</strong></td>
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<tr>
<td>1. Maintain a log for the EAM/EM or other accountable method.</td>
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<td>2. Ensure knowledge of facility plant by assigning EAM/EM to develop and allow to brief viable selective.</td>
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<td>3. Communicate between the EPF of existing and plant status or WAS/ECLE entries.</td>
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<td>4. Support the PWE/ITC/OSC Managed.</td>
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<td><strong>SSE Communicator</strong></td>
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<td>1. Prepare the MEC notification worksheet.</td>
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<td>2. Issue instructions to facility plant by assigning SSE/ITC to develop and allow to brief viable select.</td>
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<tr>
<td>3. Communicate between the EAM/EM or existing and plant status or WAS/ECLE entries.</td>
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<tr>
<td>4. Prepare the MEC/ITC Managed.</td>
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<tr>
<td><strong>Safety Coordinator</strong></td>
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<td>1. Determine and provide notification of care damage.</td>
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<tr>
<td>2. Assist in the preparation of accident management guide implementation.</td>
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<tr>
<td>3. Provide the parameter information results back to the TSC Manager.</td>
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<tr>
<td><strong>EOP Engineer/Mechanic</strong></td>
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<tr>
<td>1. Respond to engineering requests from the EOP Engineering Coordinator.</td>
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<tr>
<td>2. Evaluate EAM/EM strategy implementation when designated.</td>
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<tr>
<td><strong>EOP Engineer/Electrical</strong></td>
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<tr>
<td>1. Respond to engineering requests from the EOP Engineering Coordinator.</td>
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<td>2. Evaluate EAM/EM strategy implementation when designated.</td>
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<td><strong>IT Specialist</strong></td>
<td>N/A</td>
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<tr>
<td>Current ERO Position</td>
<td>ENP-RO-053 Tasks (CF)</td>
<td>Other Procedure Tasks (ENP-ROXIP05, ID-4.4.KJYI)</td>
<td>Implementing Actions</td>
<td>Position eliminated?</td>
<td>Task Assigned to</td>
<td>Win Staffing</td>
<td>Key SEC/FLY</td>
<td>Procedure(s) &amp; Plan section</td>
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<tr>
<td>NRC Support Control</td>
<td>- Supervise the activities, operations and coordination actions in the ERO.</td>
<td>- Support site contingency planning.</td>
<td>- Ensure that personnel are decontaminated and, if necessary, conduct pre-briefing for the site.</td>
<td>E2</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
</tr>
<tr>
<td>NRC Support Control</td>
<td>- Ensure the TDC Manager is on-scene.</td>
<td>- Monitor and coordinate between the TSC and QC.</td>
<td>- Maintain adequate site staffing.</td>
<td>E3</td>
<td>Site ERO Manager</td>
<td>Yes</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
</tr>
<tr>
<td>NRC Support Control</td>
<td>- Coordinate the basic function, briefing and briefing of strike and surfactant action teams and onsite monitoring teams.</td>
<td>- Ensure timely dispatch of the TSC and other direct personnel support personnel.</td>
<td>- Support the TSC Manager as required.</td>
<td>E4</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
</tr>
<tr>
<td>NRC Support Control</td>
<td>- Ensure the availability of facility briefings.</td>
<td>- Support the TSC Manager.</td>
<td>- Conduct the procedures of the TSC and other facilities.</td>
<td>E5</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E6</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E7</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E8</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E9</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E10</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E11</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E12</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E13</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
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<td>Site ERO Manager</td>
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<td>E/R-K</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E15</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E16</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E17</td>
<td>Site ERO Manager</td>
<td>No</td>
<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E18</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<tr>
<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
<td></td>
<td>E19</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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<td>NRC Support Control</td>
<td>- Establish specific facility sites.</td>
<td>- Support the TSC Manager.</td>
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<td>E20</td>
<td>Site ERO Manager</td>
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<td>E/R-K</td>
<td>6.12, 6.123, A, B, C, D</td>
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**ER/EO Coordinator**
- Assess/Identify/Document/Plan for the repair and curtailment of action tears.
- Develop/Participate in job briefing.
- Ensure repair and curtailment action tears are tracked.
- Ensure communication with the teams is maintained.
- Participate in delivering of returning emergency teams.
- **No**

- Eliminate Position?
  - Yes
  - No
- Task assigned to?
  - F1 - Technical Manager
  - F1 - Technical Manager
  - F1 - Technical Manager
  - F1 - Technical Manager
  - No

| Specification Support
| Support the OIC when needed.
| Ensure that the OIC is informed of OIC teams and action in the OIC.
| Identify potential operational support needs.
| **No**

- Eliminate Position?
  - Yes
  - No
  - No

| OSC/Technical
| Technical, IEC, Mechanical, Maintenance, P/F/N, Chemistry
| Perform initial actions prior to personnel arrival at the OIC.
| Attend pre-job briefing prior to performing emergency maintenance.
| Ensure status updates to the ANC are current.
| Perform pre-job activities as directed by the OSC Coordinator(s).
| Ensure team activity upon return to the OIC.
| No, if necessary

| Radio/Communicator
| Wide-specific position
| Establish radio communications.
| Send effective and timely information flow and dissemination of messages.
| Ensure OIC EOC Map is updated with meteorological data.
| Upon EOC activation, transmit information to the EOC Offsite Team Leader.
| **No**

| Role Information

---
| Company Spokesperson
| Establish briefing from the CEO to ensure timely development of news releases.
| Ensure that news media is briefed and kept informed throughout the course of the emergency.
| Serve as spokesperson at media briefings.
| Keep the company (President of Communications) informed throughout the emergency.
| Maintain key lines of access to media.
| Establish a media frame of reference for the entire news media and public utility news releases and mandatory statements.
| Ensure early and timely transition to the OIC once State personnel arrive and are ready to act.
| Ensure liaison with offsite agencies (Federal, State and local) for the release of public information.
| Maintain updated status of all ongoing media activities related to the emergency.
| **No**

**PIPP 04209**

| Technical Advisor
| Assist the Information Officer in the coordination of media and public relations.
| Obtain 10-day approval for the development of news releases and release accordingly.
| Ensure news release information is communicated to the offsite agencies.
| Ensure news releases are coordinated with the offsite agencies.
| Ensure news releases are appropriate for the media.
| Ensure news releases contain information of value to public relations.
| Ensure news releases contain information of value to public relations.
| Notify the Corporate Emergency Center (SEC).
| Prepare news release(s) in accordance with SEC briefing.
| Ensure availability of media for SEC briefing.
| Review and approve all External media news release related to the emergency.
| **No**

**PIPP 04209**

| Technical Assistant
| Assist the Information Officer in the coordination of media and public relations.
| Assist with other EC activities as needed (e.g., assist with offsite agencies in the SEC).
| Assist the Information Officer in the coordination of media and public relations.
| Ensure the role of EC Manager when assigned by either the EC Manager or the Company Spokesperson.
| **No**

| Technical Assistant
| Spokesperson in (EP-100)
| Assist with press release writing for technical accuracy.
| Assist with other EC activities as needed (e.g., assist with offsite agencies in the SEC).
| Assist the Information Officer in the coordination of media and public relations.
| Review and approve all External media news release related to the emergency.
| **No**

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**PIPP 04209**

**PIPP 04209**

**PIPP 04209**

**PIPP 04209**

**PIPP 04209**
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<tbody>
<tr>
<td>Media Monitor</td>
<td>(1)</td>
<td>(6) Maintain TV, radio broadcasts and other media sources for interviews.</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
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<td>(2) Process telephone calls and emails and distribute to the appropriate personnel.</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
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<td>N/A</td>
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<tr>
<td>IC Log Keeper</td>
<td>(1)</td>
<td>(3) Maintain log of telephone or other acceptable method.</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>(2) Support the IC Manager as requested.</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HR Admin Support</td>
<td>(1)</td>
<td>(4) Provide technical support for HR tasks.</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Regulatory Requirement
- **N/A**: Not applicable.
Attachment 7

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

List of Regulatory Commitments

(1 Page)
This table identifies actions discussed in this letter for which Entergy Nuclear Operations, Inc. (ENO) commits to perform. Any other actions discussed in this submittal are described for the NRC’s information and are **not** commitments.

<table>
<thead>
<tr>
<th>COMMITMENT</th>
<th>TYPE (Check one)</th>
<th>SCHEDULED COMPLETION DATE (If Required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENO has not yet finalized a schedule of drills that will be conducted. Provide the NRC Project Manager a schedule of drills that will be conducted in preparation for implementation of the Post-Shutdown Emergency Plan (PSEP).</td>
<td>x</td>
<td>Appropriate advanced notice to allow the NRC and U.S. Federal Emergency Management Agency (FEMA) an opportunity to observe each drill.</td>
</tr>
<tr>
<td>Revise applicable fuel handling procedures to require that a Chemistry Technician be on-site or the radiation monitors listed in the gaseous effluent Emergency Action Levels are in service as a prerequisite to handling or moving spent fuel.</td>
<td>x</td>
<td>Prior to permanent removal of fuel from the PNP reactor vessel.</td>
</tr>
<tr>
<td>Training and procedures will be developed and in place prior to performing post-shutdown Emergency Response Organization (ERO) validation drills. The drill scenarios will include spent fuel pool events and be designed to test the major elements of the PNP PSEP. Major elements to be tested will include communications and coordination with offsite response organizations, including the Joint Information Center.</td>
<td>x</td>
<td>Prior to implementation of ERO changes.</td>
</tr>
<tr>
<td>State, County and Federal response organizations will be provided the opportunity to participate in or observe the drills conducted in preparation for implementation of the PNP PSEP.</td>
<td>x</td>
<td>Appropriate advanced notice to allow the NRC and FEMA an opportunity to observe each drill and to allow the State/County organizations to participate.</td>
</tr>
</tbody>
</table>
Attachment 8

To

Entergy Letter PNP 2017-034

Palisades Nuclear Plant

State and Local Agency Correspondence on Post-Shutdown Emergency Plan License Amendment Request Meeting

(4 Pages)
July 25, 2017

Mr. Daniel G. Malone
Emergency Planning Manager
Entergy – Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, Michigan 49043

SUBJECT: Palisades Nuclear Plant Post-Shutdown Emergency Plan

Dear Mr. Malone,

We appreciated the invitation to learn more about the Palisades Post-Shutdown Plan License Amendment Request (LAR) and participate in discussion regarding this LAR on June 6, 2017.

Based upon all conversations about this Plan and LAR, leading up to and during the June 6 meeting, we understand the proposed changes. We see no indication that these changes would impact our ability to effectively implement our FEMA-approved REP plans nor do we see any evidence that the safety of the public in Berrien County is negatively affected by this proposed plan.

We will commit any requisite resources needed when it becomes appropriate, for any validation drills or exercises that are scheduled and we will continue to support the NRC and FEMA in executing their respective radiological preparedness missions during the decommissioning process.

We thank you again for explaining the proposed plan and allowing for an open discussion on the proposed changes to the E-Plan. Feel free to contact me if you have any future questions or needs at (269) 983-7111 ext. 4916.

Respectfully,

Capt. Rockey Adams
Emergency Management Coordinator,
Berrien County Sheriff’s Office
Emergency Management and Homeland Security Division
July 20, 2017

Mr. Daniel G. Malone  
Emergency Planning Manager  
Entergy – Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, Michigan 49043  

SUBJECT: Palisades Nuclear Plant Post-Shutdown Emergency Plan

Dear Mr. Malone,

Based on discussions during our meeting on June 6, 2017, concerning Entergy’s Post-Shutdown Emergency Plan License Amendment Request for Palisades Nuclear Plant, we are satisfied we understand the changes proposed and we are satisfied that these changes will not impact the ability of Van Buren County Sheriff’s Office and the VBC Office of Domestic Preparedness to effectively implement our FEMA-approved REP plans.

Sincerely,

Lt. Robert Kirk  
Director/Emergency Manager  
Office of Domestic Preparedness  
Van Buren County Sheriff’s Office
Monday, August 14, 2017

Dear Mr. Malone,

Thank you for the invitation to the June 6, 2017 presentation concerning the License Amendment Request for Palisades Nuclear Plant. Based on this meeting and the discussions that followed after, we feel satisfied that we fully understand the proposed changes and do not feel that these changes will in any way impact our ability to effectively implement our FEMA-approved REP plans.

Sincerely,

Scott Corbin
Allegan County Emergency Management Director
July 24, 2017

Mr. Daniel G. Malone  
Emergency Planning Manager  
Entergy – Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, Michigan 49043

Dear Mr. Malone:

Thank you for your presentation on June 6 concerning Entergy’s Post-Shutdown Emergency Plan License Amendment Request for Palisades Nuclear Plant. Based on this and the discussions that followed, I am satisfied and fully understand the plant’s licensing amendment request and what can be expected before, during, and after the plant’s anticipated shutdown.

The Michigan State Police, Emergency Management and Homeland Security Division is confident these proposed changes will not impact our ability to effectively implement the state’s FEMA-approved Radiological Emergency Preparedness (REP) Plans.

I am fully supportive of the process and will do everything necessary to ensure the safety and protection of the public, as identified in the FEMA REP Manual.

Please contact me directly if you require further assistance in this matter.

Sincerely,

Capt. Chris A. Kelenske, Commander  
Deputy State Director of Emergency Management  
and Homeland Security