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PNP 2013-095

December 19, 2013

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

SUBJECT: Palisades Nuclear Plant Site Emergency Plan (Revision 25) and Site Emergency Plan – Supplement 2 (Revision 0)

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

Dear Sir or Madam:

In accordance with 10 CFR 50.54(q), Entergy Nuclear Operations, Inc. is submitting a report of changes made to the Palisades Nuclear Plant Site Emergency Plan (SEP).

The changes to the SEP were evaluated as required by 10 CFR 50.54(q). The evaluation concluded that the changes do not reduce the effectiveness of the SEP, and the SEP, as changed, continues to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E.

A summary of the analysis of the changes as required by 10 CFR 50.54(q)(5) is provided in the attachment. Copies of the updated SEP (Revision 25) and of SEP – Supplement 2 (Revision 0) are provided in the enclosure.

This letter contains no new commitments and no revised commitments.

Sincerely,

owg/jse

AX45
NRR

Attachment: Palisades Nuclear Plant Site Emergency Plan Revision Analysis Summary

Enclosure: Palisades Nuclear Plant Site Emergency Plan, Revision 25, and Palisades Nuclear Plant Site Emergency Plan – Supplement 2, Revision 0

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

ENCLOSURE

**PALISADES NUCLEAR PLANT SITE EMERGENCY PLAN,
REVISION 25 (124 pages)**

AND

**PALISADES NUCLEAR PLANT SITE EMERGENCY PLAN – SUPPLEMENT 2,
REVISION 0 (387 pages)**

ATTACHMENT

PALISADES NUCLEAR PLANT
SITE EMERGENCY PLAN REVISION
ANALYSIS SUMMARY

The following two documents involving the Palisades Nuclear Plant (PNP) Site Emergency Plan (SEP) were recently issued:

- PNP SEP, revision 25, dated December 11, 2013, and
- PNP SEP – Supplement 2, revision 0, dated December 11, 2013.

These documents were analyzed under 10 CFR 50.54(q). Pursuant to 10 CFR 50.4(b)(5)(ii) and 10 CFR 50.54(q)(5), a summary of the 10 CFR 50.54(q) analysis is being submitted.

DESCRIPTION OF CHANGES

The SEP was revised as follows:

1. Evacuation time estimates (ETEs) were updated based on the 2010 census and were relocated from the SEP to SEP – Supplement 2. These changes affect the SEP Table of Contents, the Reference Document section, Sections 2.2 and 2.5.2, and Appendix C.

2. In the SEP Reference Document section, the procedure identification number prefix for two referenced documents were changed from "ONP" to "AOP" to reflect an administrative change in a procedure classification title from "Off Normal Procedures" to "Abnormal Operating Procedures."

3. In SEP Section 5.2.4, the title for the "Nuclear Safety Assurance Director" was changed to "Regulatory and Performance Improvement Director" to reflect changes to the site organization. The Table of Contents was also affected by this change. This was an administrative change.

4. Hostile action events were added to the SEP Section 5.6 discussion of off-site emergency response services.

5. A letter of agreement for the Hostile Action Memorandum of Understanding was added to the list of agreements in SEP Appendix A.

The content of the newly issued SEP – Supplement 2 consists of the ETEs, which were relocated from the SEP.

DESCRIPTION OF HOW THE CHANGES STILL COMPLY WITH THE REGULATION

10 CFR 50.47(b)(3) – Emergency Response Support and Resources

Hostile action events were added to SEP Section 5.6 discussion of off-site emergency response services. The hostile action event addition was not a change in SEP intent but rather was an expansion of the existing language for clarity relative to local support service arrangements with offsite groups that provide aid in the event of an emergency situation, including those resulting from hostile actions.

SEP Appendix A was revised to add a letter of agreement for the Hostile Action Memorandum of Understanding to the list of agreements.

The above changes involve the availability of support services from off-site individuals, organizations, and agencies, with regard to hostile action based events. These changes were made in accordance with 10 CFR 50, Appendix E, Section IV.A.6, which requires that a description of local off-site services be provided, and Section IV.A.7, which requires identification of, and a description of the assistance expected from, off-site services with responsibilities for coping with emergencies, including hostile action at the site. No changes were included that would diminish support capabilities and therefore, existing compliance is maintained.

10 CFR 50.47(b)(10) – Emergency Protective Actions

The SEP was revised to reflect the adoption of updated ETEs based on the 2010 census and to relocate the ETEs from the SEP to SEP – Supplement 2.

The updated ETEs were an improvement in that more recent census data (2010 census data vice 2000 census data) was used in conjunction with current analysis protocols. Overall, emergency planning zone population declined since the 2000 census, and therefore evacuation time estimates are shorter.

Relocating the ETEs content to the newly issued SEP – Supplement 2 maintains the availability of this information because it remains part of the SEP. Changes to the supplement require all the same reviews and approvals as required for the SEP. No changes were included that would diminish Protective Action Recommendation development capabilities and therefore existing compliance is maintained.

The remaining changes to the SEP, concerning the procedure identification number prefix change and a position title change, were administrative and did not affect compliance with 10 CFR 50 Appendix E or an emergency planning standard. These changes did not affect an emergency planning function or an element associated with a function because there were no changes to the meaning or intent of an emergency planning description, or changes to emergency planning facilities, equipment, or processes.

DESCRIPTION OF WHY THE CHANGES WERE NOT A REDUCTION IN THE EFFECTIVENESS OF THE SEP

In the revision to the SEP, hostile action events were added in the Section 5.6 discussion of off-site emergency response services. This change was not a change in intent but rather was an expansion of the existing language for clarity relative to local support service arrangements with offsite groups that provide aid in the event of an emergency situation, including those resulting from hostile actions. No changes were included that would diminish off-site emergency response support service capabilities.

Additionally, in the revised SEP and the newly issued SEP – Supplement 2, updated ETEs were adopted which are based on the 2010 census, and the ETEs were relocated from the SEP to SEP – Supplement 2. The supplement is part of the SEP, and changes to the supplement require all the same reviews and approvals as required for the SEP.

The updated ETES are an improvement in that more recent census data (2010 census data vice 2000 census data) was used in conjunction with current analysis protocols. Overall, emergency planning zone population declined since the 2000 census, and therefore evacuation time estimates are shorter.

These SEP changes and the newly issued SEP – Supplement 2 did not represent a reduction in the effectiveness of the emergency plan and therefore were incorporated without prior NRC approval.

The remaining changes to the SEP, concerning the procedure identification number prefix change and a position title change, were administrative and did not affect an emergency planning function or an element associated with a function because there are no changes to the meaning or intent of an emergency planning description, or changes to emergency planning facilities, equipment, or processes.

Procedure No SEP
Revision 25
Effective Date 12/11/13

PALISADES NUCLEAR PLANT
SITE EMERGENCY PLAN

TITLE: SITE EMERGENCY PLAN

Approved: JLFontaine / 12/11/13
Procedure Sponsor **Date**

Process Applicability Exclusion ☐

New Procedure/Revision Summary:

Revision, Rev 25

Specific Changes

1. This revision adopts the updated Evacuation Time Estimates (Revision 1, August 2012) prepared by KLD Engineering. Changes referencing the updated Evacuation Time Estimates and/or relocation of this content to a progeny procedure to the Site Emergency Plan may be found at the following locations:
    a. Table of Contents
    b. Reference Documents
    c. Section 2.2
    d. Section 2.5.2
    e. Appendix C
2. DRN 13-00600, Revise titles for two referenced documents from ONPs to AOPs.
3. DRN 13-01331, Revise title for Nuclear Safety Assurance Director to Regulatory and Performance Improvement Director.
4. Include "Hostile Action" events in the discussion of Offsite Response Organization responsibilities and list a new Letter of Agreement for the Hostile Action Letter Memorandum of Understanding in Appendix A.

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

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SOURCES AND REFERENCES

SOURCE DOCUMENTS

NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Procedures in Support of Nuclear Power Plants" (November 1980)

Title 10 of the Code of Federal Regulations, Part 50

REFERENCE DOCUMENTS

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

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

Palisades Nuclear Plant Emergency Implementing Procedures

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

10 CFR 100, "Reactor Site Criteria"

Palisades Final Safety Analysis Report

NUREG-0696, "Functional Criteria for Emergency Response Facilities" (February 1981)

Palisades Safeguards Contingency Procedures

Palisades Health Physics Procedures

Palisades Emergency Operation Procedures

Palisades Nuclear Plant Public Information Policies and Procedures

Palisades Fire Protection Plan

EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents"

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

Entergy Procedure EN-OM-119, "On-Site Safety Review Committee"

Emergency Implementing Procedure EI-1, "Emergency Classification and Actions"

10 CFR 20, "Standards for Protection Against Radiation"

Oil and Hazardous Materials Spill Prevention Plan

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

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

Palisades Technical Specifications

Act 390, Michigan Public Acts of 1976

Act 368, Michigan Public Acts of 1978

Michigan Emergency Management Plan

Van Buren County Emergency Plan

Allegan County Emergency Plan

Berrien County Emergency Plan

Palisades Administrative Procedure 1.14, "Meteorological Monitoring Program"

Entergy Procedure EN-IT-103, "Cyber Security Program"

NEI 99-01 Revisions 5, "Methodology for Development of Emergency Action Levels"

NRC Bulletin 2005-02: Emergency Preparedness and Response Actions for Security Based Events

NEI White Paper dated November 18th, 2005, "Enhancements to Emergency Preparedness Programs for Hostile Action." (Endorsed by NRC RIS 2006-12)

SITE EMERGENCY PLAN Supplement 1 – "EAL Wall Charts" (Note: SEP Supp 1 is under separate cover with its own revision number.)

SITE EMERGENCY PLAN Supplement 2 – "Evacuation Time Estimates" (Note: SEP Supp 2 will be maintained in the same binder as the Site Emergency Plan.)

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

Entergy Procedure EN-TQ-110, "Emergency Response Organization Training"

Entergy Procedure EN-TQ-201, "Systematic Approach to Training Process"

Entergy Procedure EN-EP-308, "Emergency Planning Critiques"

Entergy Procedure EN-EP-306, "Drills and Exercises"

Palisades Nuclear Station On-Shift Staffing Analysis, Revision 0 dated December 18, 2012 conducted in accordance with NEI 10-05 and required by 10CFR50 Appendix E, Section IV.A

TITLE: SITE EMERGENCY PLAN

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 Emergency Plan (SEP) is to aid in protecting members of the general public, persons temporarily visiting the site, and site employees.

Information submitted in this plan was developed using the guidance provided in NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Procedures in Support of Nuclear Power Plants," published in November 1980 and with Regulatory Guide 1.70, Revision 2, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants," dated September 1975.

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. 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 Emergency Plan with Plant operations, security, and radiological controls procedures. Selected elements of the Quality Program are applied to the Site 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, eg, 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

Shift Manager, Nuclear Control 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 pre determined, 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 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 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 I-96 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. Most of the year, a population of 40 resides within 1 mile of the site and 6,300 within 5 miles.

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 Emergency Plan. See SEP 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, Section 50.34, "Contents of Applications; Technical Information, Licensing of Production and Utilization Facilities", 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 Plan 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:

a. NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plant" (November 1980).

b. NUREG-0696, "Functional Criteria for Emergency Response Facilities" (February 1981).

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 Emergency Plan

The objectives of the Site 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 Emergency Plan Supplement 1

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

2.5.2 Site Emergency Plan Supplement 2

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

TITLE: SITE EMERGENCY PLAN

FIGURE 2-1
PALISADES PLANT GENERAL LOCATION

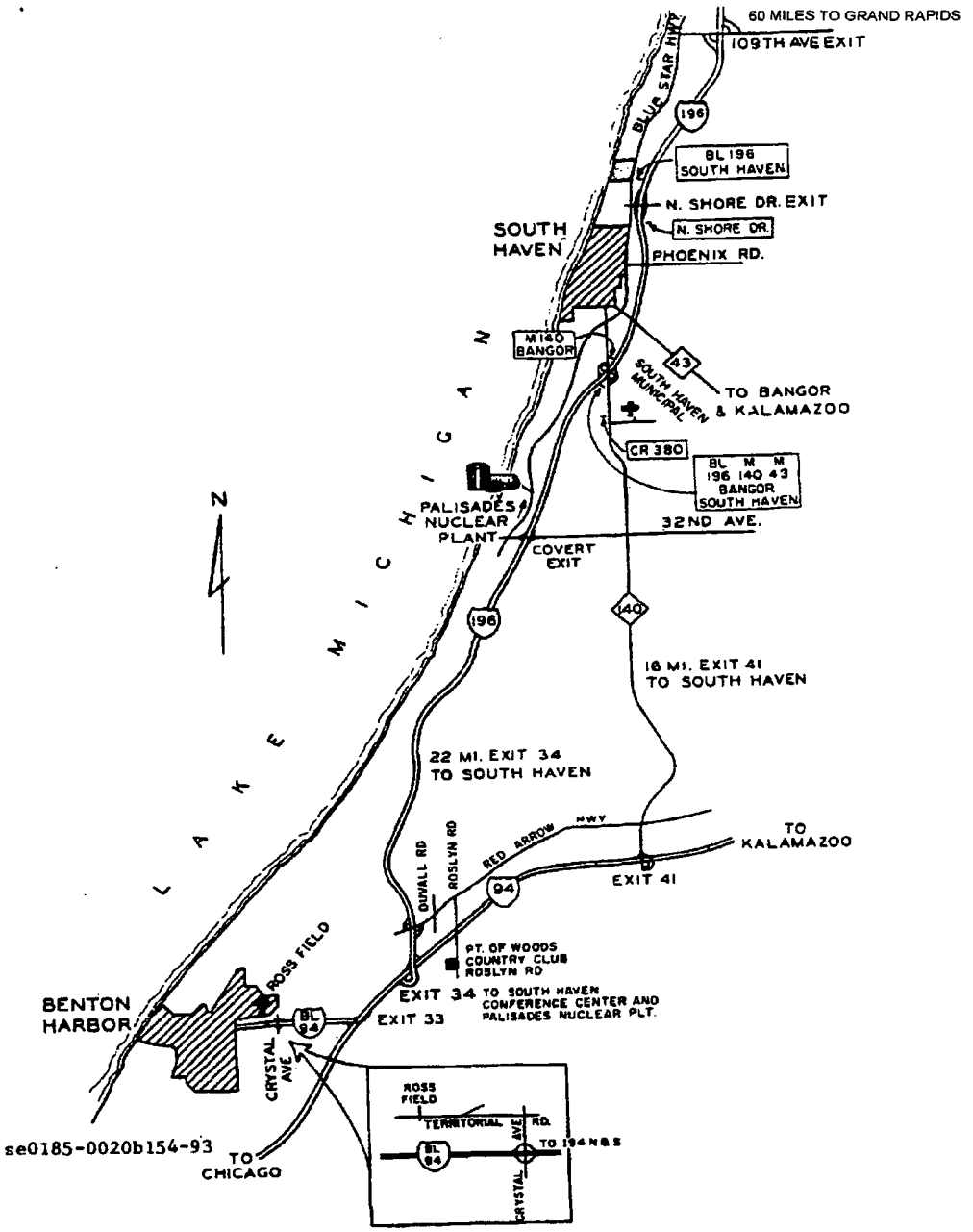
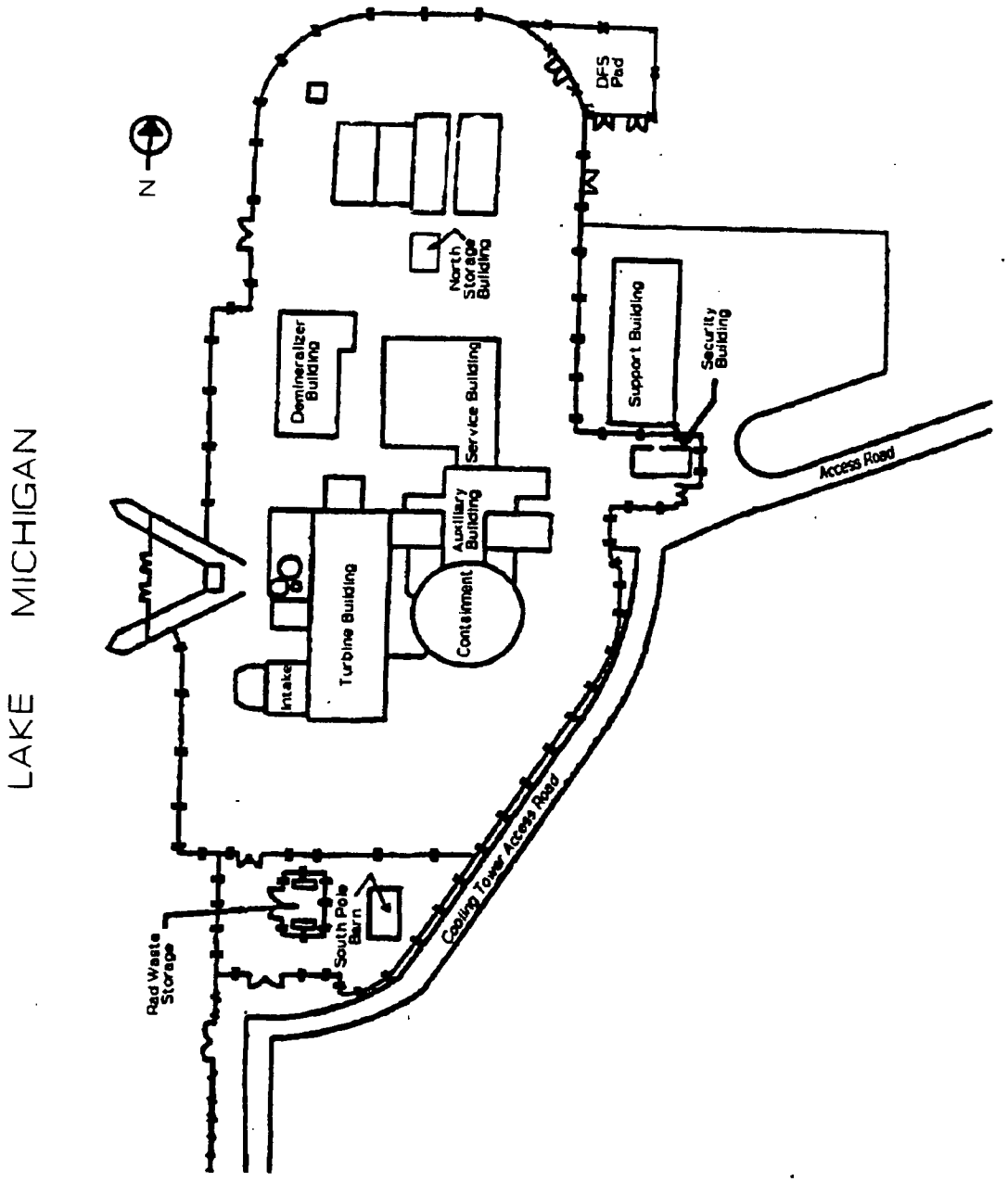
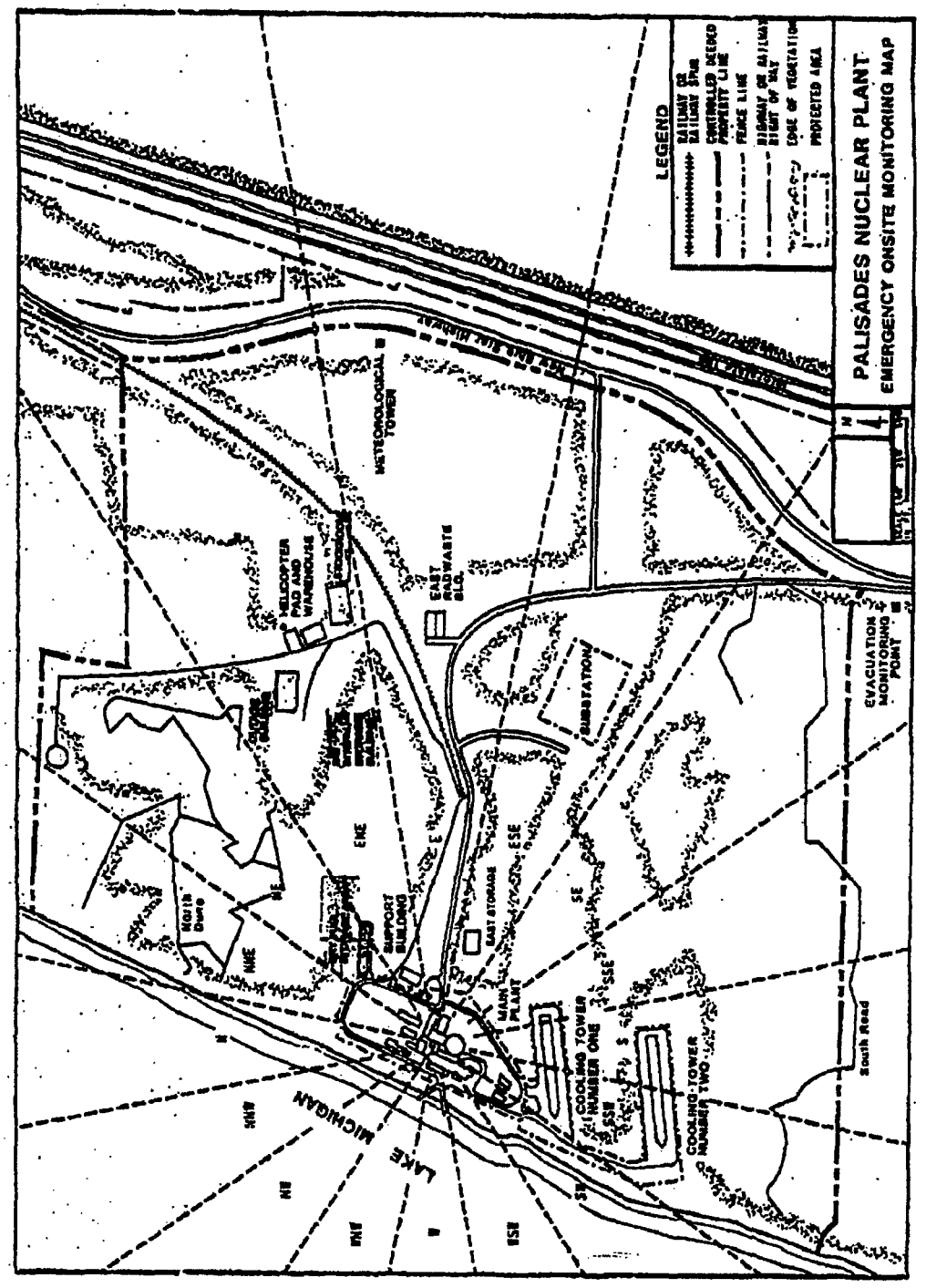


FIGURE 2-2
PALISADES FACILITIES



TITLE: SITE EMERGENCY PLAN

FIGURE 2-3
PALISADES NUCLEAR PLANT SITE



3.0 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.

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 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.

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 Emergency Plan.

3.1 EMERGENCY PLAN STEPS

In general, the 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 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.

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 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 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 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

EMERGENCY	SHIFT RESPONSE	NOTIFICATION	PLANT STAFF RESPONSE	SUPPORT RESPONSE
Unusual Event	Investigate. Shift Manager activates appropriate emergency team(s).	Duty Station Manager, Van Buren County, State, and NRC.	Supplement on-shift resources as needed.	None
Alert	Investigate. Shift Manager activates appropriate emergency teams. Required in-plant protective actions performed.	Duty Station Manager, Van Buren County, State, NRC, and staff augmentation.	TSC/OSC/EOF activation. Discretionary News Center activation. Supplement activated emergency teams. Investigate event, assist shift personnel in controlling Plant response. Assess radiological consequences.	Emergency Plant Manager determines need for offsite support. Acquire offsite support as required.
Site Area Emergency	Investigate. Shift Manager activates appropriate teams. Required in-plant protective actions performed.	Duty Station Manager, Van Buren County, State, NRC, and staff augmentation.	TSC/OSC/EOF/JIC activation. Supplement activated emergency teams. Investigate event, assist shift personnel in controlling Plant response. Assess radiological consequences.	Determine need for further offsite support. Acquire offsite support as required.
General Emergency	Investigate. Shift Manager activates appropriate teams. Required Plant protective actions performed.	Duty Station Manager, Van Buren County, State, NRC, and staff augmentation.	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.	Determine need for further offsite support. Acquire offsite support as required.

4.0 EMERGENCY CONDITIONS

4.1 EMERGENCY CLASSIFICATION SYSTEM

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, "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 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 (ie, 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

CLASS	LICENSEE ACTIONS	STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS
UNUSUAL EVENT **Class Description** 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. **Purpose** 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.	1. Promptly inform state and local offsite authorities of nature of unusual condition as soon as discovered. 2. Augment on-shift resources as needed. 3. Assess and respond. 4. Escalate to a more severe class, if appropriate, or 5. Close out with verbal summary to offsite authorities; followed by written summary.	1. Provide fire or security assistance if requested. 2. Escalate to a more severe class, if appropriate. 3. Stand by until verbal closeout.

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

CLASS	LICENSEE ACTIONS	STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS
ALERT **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. 2. Augment resources by activating onsite Technical Support Center, onsite Operations Support Center, and near-site Emergency Operations Facility (EOF). 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. 4. Provide confirmatory off-site radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed Technical Specification limits. 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

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

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

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

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

CLASS	LICENSEE ACTIONS	STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS
GENERAL EMERGENCY		
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, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.	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). 2. Augment resources by activating onsite Technical Support Center, and onsite Operations Support Center and near-site Emergency Operations Facility (EOF). 3. Assess and respond. 4. Dispatch onsite and offsite monitoring teams and associated communications. 5. Designate an individual for Plant status updates to offsite authorities and periodic press briefings (perhaps joint offsite authorities). 6. Make senior technical and management staff onsite available for consultation with NRC and state on a periodic basis. 7. Provide meteorological and dose estimates to offsite authorities for actual releases via a designated individual or automated data transmission.	1. Provide any assistance requested. 2. Activate immediate public notification of Emergency status and provide public periodic updates. 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. 4. Augment resources by activating primary response centers. 5. Dispatch key emergency personnel including monitoring teams and associated communications. 6. Dispatch other emergency personnel to duty stations within five-mile radius and alert all others to standby status. 7. Provide offsite monitoring results to licensee, DOE, and others and jointly assess them.

Cont'd on next page.

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

CLASS	LICENSEE ACTIONS	STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS
GENERAL EMERGENCY (cont)	8. Provide release and dose projections based on available Plant condition information and foreseeable contingencies. 9. Close out or recommend reduction in emergency class by briefing of offsite authorities at EOF and by phone followed by written summary.	8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources. 9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance. 10. Provide press briefings with licensee. 11. Maintain General Emergency status until closeout or reduction of emergency class.

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 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.

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 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 operation of the unit. 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 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)

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 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 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 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 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 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. He 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 a guideline for minimum additional staffing and approximate 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. 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 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. The exception being: immediate lifesaving actions are required, the OSC Radiation/Chemistry Coordinator is notified prior to taking action and the individual making the decision in the field is Radiation Protection Qualified (ie, Radiation Protection Technician or Supervisory personnel).

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 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 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.

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 (ie, 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 Health System, 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 Emergency Preparedness

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

The Chairman of the Berrien County Board of Commissioners is responsible for activation of the County's Emergency Operations Plan. The Berrien County Emergency Management Coordinator is responsible for overall coordination and planning of emergency operations with Van Buren County Emergency Management Coordinator during a disaster. The Emergency Preparedness Coordinator is responsible for initiating the manning of the EOC which is located in the County Sheriff's Department. 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 Preparedness 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 Coordinator, 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 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 Coordinator is responsible for overall coordination and planning of emergency response activities within the county. The Emergency Management Coordinator 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 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.

a. Michigan Department of State Police Emergency Management Homeland Security Division (MSP/EMHSD)

The Department of State Police Emergency Management 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 East 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 Department of State Police - Paw Paw Post

Michigan Department of 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 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 Community Health

The Michigan Department of Community Health 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

The Michigan Department of Agriculture 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 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 Emergency Plan is activated. Means of communications are described in the Site 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

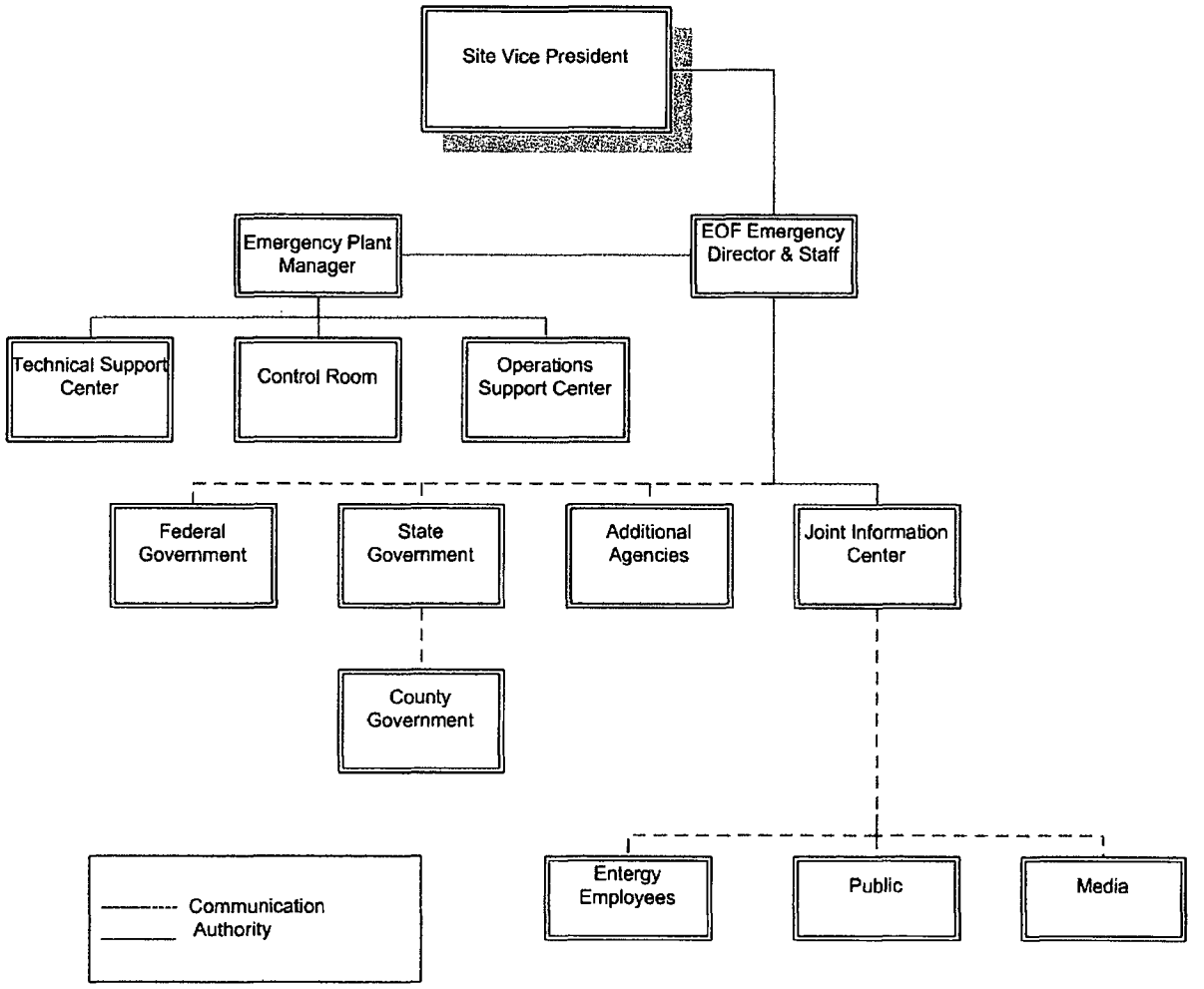


FIGURE 5-2
PLANT STAFFING AND AUGMENTATION GUIDELINES

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

NOTES: * May be provided by shift personnel assigned other functions.

TITLE: SITE EMERGENCY PLAN

FIGURE 5-2
PLANT STAFFING AND AUGMENTATION GUIDELINES

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

NOTES: * May be provided by shift personnel assigned other functions.

FIGURE 5-2
PLANT STAFFING AND AUGMENTATION GUIDELINES

MAJOR FUNCTIONAL AREA	MAJOR TASKS	POSITION TITLE OR EXPERTISE	ON SHIFT	STAFF AUGMENTATION CAPABILITY AND APPROXIMATE RESPONSE TIMES	
Rescue Operations and First-Aid	--	--	2*	Local Support	
Site Access Control and Personnel	Security, fire fighting communications, personnel accountability	Security Personnel	All per Security Plan		
		TOTAL	14	11	15

NOTE: The on-shift staffing requirements listed in this Figure are a result of the Palisades Nuclear Station On-Shift Staffing Analysis Report, Revision 0 dated December 18, 2012, conducted in accordance with NEI 10-05 and required by 10CFR50 Appendix E, Section IV.A.9.

Effective Date for Figure 5-2: January 17, 2013

NOTES: * 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 SEP Supplement 1 "SITE 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 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:

6.1.1 Control Room Personnel

a. Should emergency conditions, either real or potential, arise, it is expected that the 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 (eg, Plant and reactor 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.")

(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 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[1]

n. Implement severe accident management procedure strategies

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

6.1.4 Emergency Management and Homeland Security Division - Michigan Department of State Police

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 Centers, 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 fire fighting 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.

b. Manual Method - A pencil and paper method for calculating offsite dose using precalculated diffusion factors and a straight line Gaussian methodology.

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

In-plant fire fighting 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 fire fighting, 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 Department of 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 Department of 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 (with the exception of life-saving efforts) 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 Health System, St Joseph, Michigan.

TABLE 6-1
ENVIRONMENTAL PROTECTION AGENCY - PROTECTIVE ACTION GUIDES

Protective Action	PAG Projected Dose Which ever is more limiting
Intervention Level *	0.5 rem (CEDE) Whole body or any set of organs OR 5 rem (CDE) any single organ

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)

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

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

Protective Action	PAG Projected 1st Year Dose	Comments
Relocate the general population	≥ 2 rem TEDE > 100 rem beta skin dose	
Apply simple dose reduction techniques	< 2 rem TEDE	These protective actions should be taken to reduce doses to as low as practicable levels

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

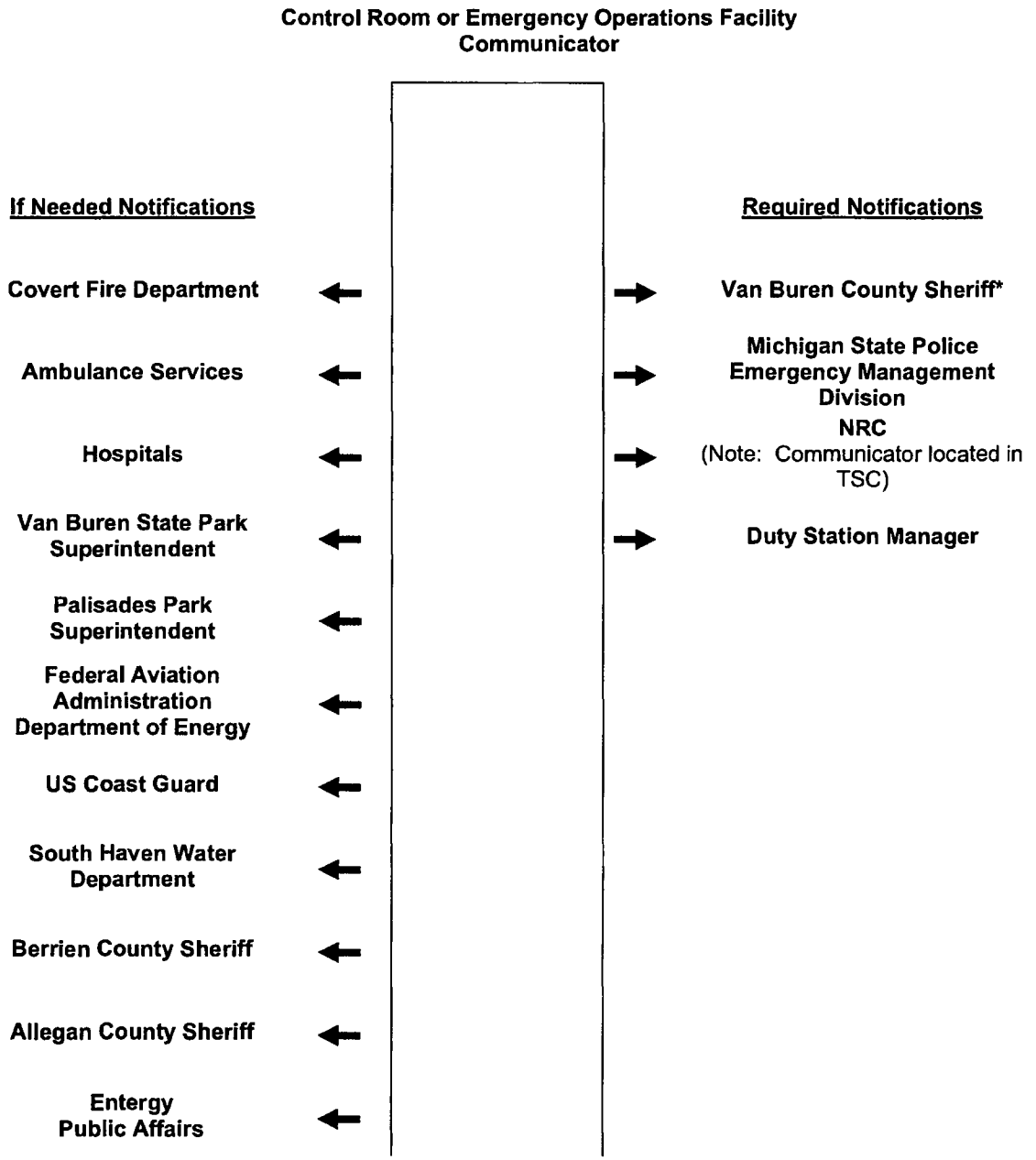
Long Term Objectives	
Period	Objective
Any single year (2 through 50)	0.5 rem TEDE
50 Years	5 rem TEDE

TABLE 6-3
GUIDANCE ON DOSE LIMITS FOR WORKERS PERFORMING EMERGENCY SERVICES

Dose Limit[a] (rem)	Activity	Condition
5	all	
10	protecting valuable property	lower dose not practicable
25	life saving or protection of large populations	lower dose not practicable
>25	lifesaving or protection of large populations	only on a voluntary basis to persons fully aware of the risks involved

[a]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



*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 (NPOs), 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 Emergency Off Normal Procedures
Palisades Site 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, East Lansing.

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

h. Satellite phone (TSC/Control Room).

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 is provided by WSI. WSI provides wind speed and direction, and Pasquill stability class. Details on the WSI System as it relates to emergency offsite dose calculations, are provided in Emergency Implementing Procedure EI-6.8, "Backup and Supplemental Meteorology." Details on the WSI System in general are provided in the WSI Weather Information System User Manual.

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 Charlseton, 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 Health System/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 (ie, 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 SEP COMMUNICATIONS MATRIX

	Control Room	TSC	OSC	EOF	State EOC	Van Buren EOC	NRC	Offsite Teams
Control Room		1. Intp Phone 2. SP Phone	1. Intp Phone 2. Co Network	1. Intp Phone 2. Radio[1]	1. Com Phone 2. Radio[2]	1. Com Phone 2. Radio[2]	1. ENS 2. Com Phone	NR
TSC	1. Intp Phone 2. SP Phone		1. Ded Circuit 2. Intp Phone	1. Satellite Phone	1. Com Phone 2. Radio[2] 3. Satellite Phone	1. Com Phone 2. Radio[2] 3. Satellite Phone	1. ENS 2. Com Phone 3. Satellite Phone	NR
OSC	1. Intp Phone 2. Co Network	1. SP Phone 2. Intp Phone		1. Intp Phone 2. Radio[3]	NR	NR	NR	1. Radio[3] 2. Com Phone
EOF	1. Intp Phone 2. Radio[1]	1. Ded Circuit 2. Com Phone	1. Intp Phone 2. Radio[3]		1. Com Phone 2. Co Network	1. Com Phone 2. Co Network	1. ENS 2. Com Phone	1. Radio[3] 2. Com Phone
State EOC	1. Com Phone 2. Radio[2]	1. Com Phone 2. Radio[2]	NR	1. Com Phone 2. Co Network		1. Com Phone 2. LEIN	NR	NR
Van Buren EOC	1. Com Phone 2. Radio[2]	1. Com Phone 2. Radio[2]	NR	1. Com Phone 2. Co Network	1. Com Phone 2. LEIN		NR	NR
NRC	1. ENS 2. Com Phone	1. ENS 2. Com Phone	NR	1. ENS 2. Com Phone	NR	NR		NR
Offsite Teams	NR	NR	1. Radio[3] 2. Com Phone	1. Radio[3] 2. Com Phone	NR	NR	NR	

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

BACKUP PHONE NUMBERS AND METHODS

1. **State of Michigan**

   a. 517-241-8000
   b. 517-241-6843
   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 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.

The Palisades General Manager, Plant Operations 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 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 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, "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 EN-TQ-201,"Systematic Approach to Training Process," and 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 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 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.

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 a six-year period. Provisions should be made to start exercises between 6:00 PM and 4:00 AM once every six years, 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 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 Emergency Plan.

d. 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).

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

f. Coordinate the onsite review and updating of the Palisades Site 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 EMERGENCY PLAN AND IMPLEMENTING PROCEDURES

The Palisades Plant Site 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 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.

TITLE: SITE EMERGENCY PLAN

Proposed revisions to the Site Emergency Plan 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.

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

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

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.

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

The review shall include the 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 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 EN-IT-103, "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 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.

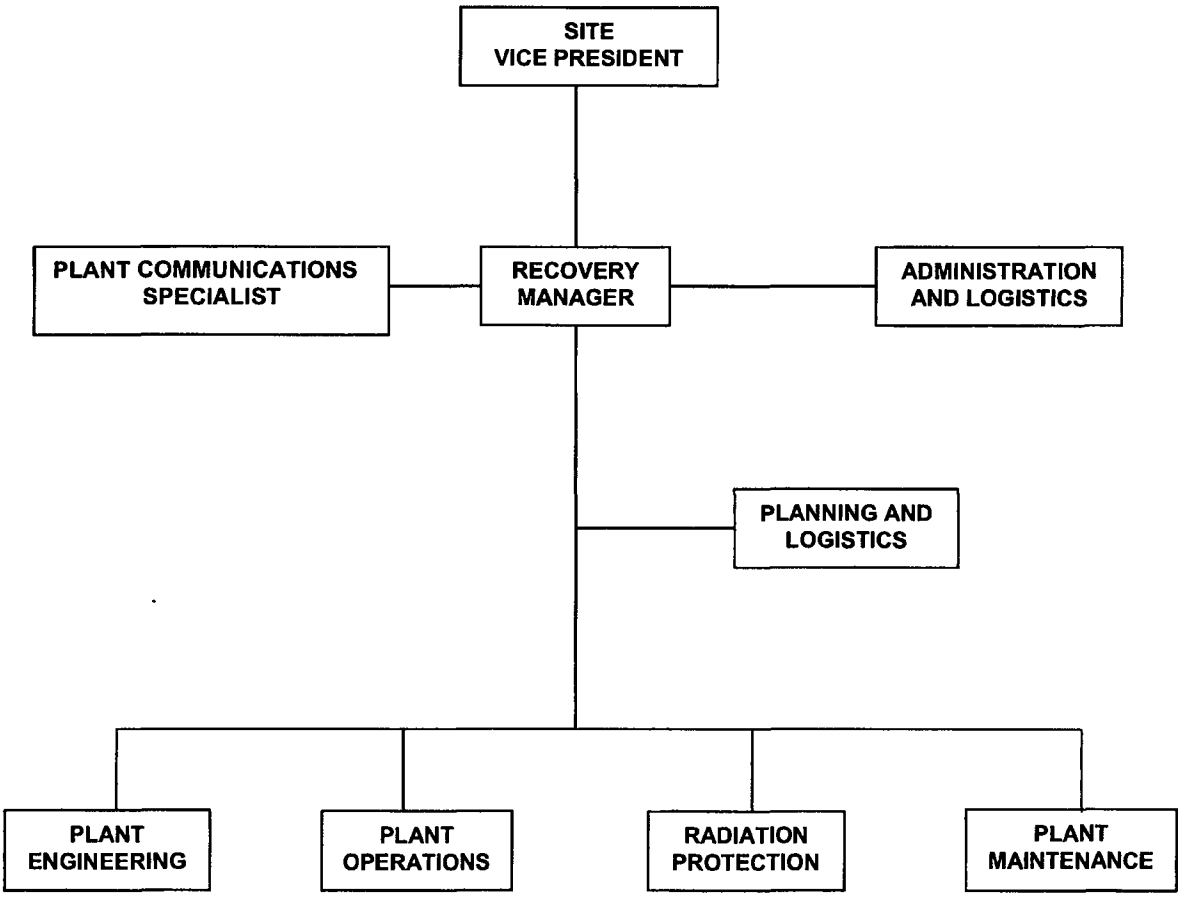
9.4 The initial objectives of the recovery program are the determination of the damage to equipment, the installation of shielding, rope barriers and signs, the application of clearance tags, decontamination, and cleanup as required to place the Plant in an acceptable long-term condition. Other recovery 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



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 Health System
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.

BASIS FOR DELETION OF APPENDIX B OF THE PALISADES SITE EMERGENCY PLAN

To	File	
From	JRBrunet, Sr Plant Emergency Planning Coordinator	CONSUMERS POWER COMPANY
Date	December 30, 1986	
Subject	PALISADES PLANT- BASIS FOR DELETION OF APPENDIX B OF THE PALISADES SITE EMERGENCY PLAN	Internal Correspondence
CC	DCC: 950/22*06*01/LP	JRB86*078

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 Companys' 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 Site Emergency Plan. See SEP Supp 2, "Evacuation Time Estimates," Revision 1, August 2012.

EMERGENCY IMPLEMENTING 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 (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 **Offsite Dose Calculation and Recommendations for Protective Action** (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 6)

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 6)

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

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** (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.

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.

NUREG-0654 CROSS REFERENCE

NUREG-0654 FEMA-REP-1 REV 1	SITE EMERGENCY PLAN*
A.1.a	Section 5
A.1.b	5.1 through 5.5
A.1.c	Figure 5.1
A.1.d	3.2
A.1.e	3.2, Table 7-1
A.3	5.6, 5.7, 5.8, Appendix A
A.4	5.1
B.1	5.2
B.2	5.2.5
B.3	5.4.1
B.4	5.4.1
B.5	Figure 5-2
B.6	5.3 through 5.8, Figure 5-1
B.7.a	5.4
B.7.b	5.5
B.7.c	Figure 5-1
B.7.d	5.3.5
B.8	5.8, Appendix A
B.9	5.6.1 through 5.6.3, Appendix A
C.1.a	5.7.2
C.1.b	7.1, 7.2
C.1.c	5.7.2.a
C.2.b	6.1.3.n
C.3	7.7.2
C.4	Appendix A
D.1	Table 4-1 and SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts
D.2	SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts
E.1	6.1.3.f, 6.1.3.h, Figure 6-1
E.2	5.4
E.3	6.1.1.b.2(f)
E.4	6.1.1.b.2(g)
E.6	6.4.1.b.3(a)
E.7	6.4.1.b

* The referenced section of the Site Emergency Plan represents the principal location where the NUREG is addressed.

NUREG-0654 CROSS REFERENCE

NUREG-0654 FEMA-REP-1 REV 1	SITE EMERGENCY PLAN*
F.1	3.2, Table 7-1, 6.1.1, 6.1.2
F.2	7.8.1
F.3	8.1.2
G.1	8.2
G.2	8.2
G.3	5.3.5, 7.4
G.4.a	5.3.5
G.4.b	5.3.5
G.4.c	5.3.5
G.5	Table 8-1
H.1	5.3.2
H.2	5.3.4
H.4	5.4
H.5	7.6
H.6	7.6.2, 7.7
H.7	7.7.1
H.8	7.6.2
H.9	5.3.3
H.10	8.4
H.11	Appendix E
H.12	7.2
I.1	SITE EMERGENCY PLAN Supplement 1 - EAL Wall Charts
I.2	7.6
I.3	6.2.5
I.4	7.6, 7.7
I.5	7.6.2
I.6	6.2.5
I.7	7.7.1
I.8	6.2.5
I.9	7.7.1
I.10	6.2.5

* The referenced section of the Site Emergency Plan represents the principal location where the NUREG is addressed.

NUREG-0654 CROSS REFERENCE

NUREG-0654 FEMA-REP-1 REV 1	SITE EMERGENCY PLAN*
J.1	6.4.1.a.1
J.2	6.4.1
J.3	6.4.1.a.4
J.4	6.4.1
J.5	6.4.1.a.1
J.6	7.8.6
J.7	6.1.1
J.8	SITE EMERGENCY PLAN Supplement 2 – Evacuation Time Estimates
J.10	6.4.1.b, 7.7
K.1	6.5
K.2	6.5.1
K.3	6.5.1
K.5	6.4.2, 6.5.2
K.6	6.4.2
K.7	6.5.2
L.1	5.6.1
L.2	6.5.2
L.4	5.6.1
M.1	9.0
M.2	Figure 9-1
M.3	9.0
M.4	6.2.5
N.1	8.1.2
N.2	8.1.2
N.3	8.1.2
N.4	8.1.2
N.5	8.1.2
O.1	8.1.1
O.2	8.1.1, 8.1.2
O.3	6.5.2
O.4	8.1.1
O.5	8.1.1

* The referenced section of the Site Emergency Plan represents the principal location where the NUREG is addressed.

NUREG-0654 CROSS REFERENCE

NUREG-0654 FEMA-REP-1 REV 1	SITE EMERGENCY PLAN*
P.1	Table 8-1
P.2	5.1
P.3	8.1.3
P.4	8.3
P.5	8.3
P.6	2.5.3
P.7	Appendix D
P.8	Table of Contents
P.9	8.3
P.10	8.1.3f

* The referenced section of the Site Emergency Plan represents the principal location where the NUREG is addressed.