Entergy

Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043
269.764.2000

Jeffery A. Hardy
Regulatory Assurance Manager

PNP 2016-023

April 6, 2016

10 CFR 50.4(b)(5)

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

Subject: Revision to Palisades Nuclear Plant Emergency Implementing Procedures

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

Dear Sir or Madam:

In accordance with 10 CFR 50.4(b)(5), enclosed are revisions to Palisades Nuclear Plant (PNP) Emergency Implementing (EI) Procedure EI-4.1, "Technical Support Center Activation," EI-4.2, "Operations Support Center Activation," EI-4.3, "Emergency Operations Facility Activation," EI-8, "Onsite Radiological Monitoring," and EI-9, "Offsite Radiological Monitoring. The changes were made in accordance with 10 CFR 50.54(q), and do not decrease the effectiveness of the Emergency Plan.

This letter contains no new commitments and no revisions to existing commitments.

Sincerely,

JAH/bed

Attachment 1: Palisades Nuclear Plant Emergency Implementing Procedure Revisions

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC
Marsha Fields, Palisades EP

AX45
NRR

Attachment 1

Palisades Nuclear Plant
Emergency Implementing Procedure Revision

EI-4.1, Revision 23
EI-4.2, Revision 24
EI-4.3, Revision 28
EI-8, Revision 18
EI-9, Revision 15

Procedure No EI-4.1
Revision 23
Effective Date 3/15/16

PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: TECHNICAL SUPPORT CENTER ACTIVATION

Approved: KMHoward / 3/10/16
Procedure Sponsor **Date**

Process Applicability Exclusion ☒

New Procedure/Revision Summary:

Revision 23

Specific Changes:

DRN-12-00781, DRN-12-02524, DRN-13-00720, DRN-13-00956, DRN-15-00273.

- Incorporated changes to align with the standardized Entergy Procedure EN-EP-610, "Technical Support Center (TSC) Operations."
- Removed duplicate tasks that are in the fleet procedure (EN-EP-610) and maintain any site specific requirements.

TITLE: TECHNICAL SUPPORT CENTER ACTIVATION

Table of Contents

ATTACHMENTS

TITLE: TECHNICAL SUPPORT CENTER ACTIVATION

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

1.0 PURPOSE

This procedure supplements EN-EP-610, "Technical Support Center (TSC) Operations." This procedure provides additional guidance that covers additional Emergency Response Organization (ERO) positions not included in the fleet procedure, along with other site-specific information concerning the activation and operation of the TSC.

2.0 REFERENCES

2.1 SOURCE DOCUMENTS

2.1.1 Site Emergency Plan

2.1.2 NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"

2.1.3 Entergy Procedure EN-FAP-EP-009, "Use of KI for the Emergency Response Organization"

2.2 REFERENCE DOCUMENTS

2.2.1 Entergy Procedure EN-EP-610, "Technical Support Center (TSC) Operations"

2.2.2 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"

2.2.3 Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program"

2.2.4 Emergency Implementing Procedure EI-5.0, "Reentry"

2.2.5 Emergency Implementing Procedure EI-8, "Onsite Radiological Monitoring"

2.2.6 Emergency Implementing Procedure EI-9, "Offsite Radiological Monitoring"

2.2.7 Emergency Implementing Procedure EI-11, "Determination of Extent of Core Damage"

2.2.8 Emergency Implementing Procedure EI-12.3, "Search and Rescue Team Responsibilities"

2.2.9 Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment"

2.2.10 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

2.2.11 Entergy Procedure EN-LI-100, "Process Applicability Determination"

2.3 COMMITMENTS

2.3.1 CMT932002114 and CMT932002116, Response to NRC Inspection Report 93-07, Section 5.1 provides guidance on relocation of TSC personnel in the event the facility becomes uninhabitable.

3.0 DEFINITIONS

Refer to EN-EP-610, "Technical Support Center (TSC) Operations," for definitions.

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

4.1 TSC must be activated upon declaration of an Alert, Site Area Emergency, or General Emergency. The TSC may be activated at the discretion of the SM or site leadership.

4.2 TSC should be operational in approximately 60 minutes.

TITLE: TECHNICAL SUPPORT CENTER ACTIVATION

5.0 PROCEDURE

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

5.1 If the TSC is not habitable or is unable to be used or safely accessed, the TSC should relocate to the Mechanical Maintenance Shop unless constraints exist. The Emergency Plant Manager (EPM) should designate an alternate location if the Mechanical Maintenance Shop is not appropriate. If no suitable location can be found onsite, then the alternative facility should be used. Refer to Attachment 6. The evacuation should be announced over the public address system. Equipment relocated upon evacuation should be designated by the Emergency Plant Manager (EPM) (or alternate) per Attachments 2 and 4 of Emergency Implementing Procedure EI-16.1 "Maintenance of Emergency Equipment" (as appropriate).

The EPM will ensure PA announcements regarding emergency conditions are made at regular intervals or when significant changes occur.

Attachments to this procedure define responsibilities of Technical Support Center staff not identified in EN-EP-610, "Technical Support Center (TSC) Operations," and provide additional, site-specific guidance concerning the activation and operation of the TSC.

Responsibilities during the re-entry phase of an emergency are addressed in EI-5.0, "Reentry."

TITLE: TECHNICAL SUPPORT CENTER ACTIVATION

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "Administrative Support"

6.1.2 Attachment 2, "TSC Log Keeper"

6.1.3 Attachment 3, "Layout/Phone Locations"

6.1.4 Attachment 4, "Organization Chart"

6.1.5 Attachment 5, "Alternative TSC"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Entergy Procedure EN-AD-103, "Document Control and Records Management Programs."

7.0 SPECIAL REVIEWS

7.1 The scope of this procedure does not include activities that require a Process Applicability Determination (PAD) Review per Entergy Procedure EN-LI-100, "Process Applicability Determination." Therefore, changes to this procedure do not require a PAD review.

7.2 Revisions to this procedure require a 50.54(q) review per Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program."

ADMINISTRATIVE SUPPORT

TSC Admin Support Name: _____ Date: _____

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the TSC:

1. Card in the accountability readers (as required) and/or sign in on the Facility Sign-In/Accountability Form.

2. Sign in on the TSC staffing board.

3. Obtain the "Admin Support" Binder & ID Badge.

4. Ensure everyone scans badge on accountability card reader.

1.2 Assume the position of TSC Admin Support

A. IF the TSC has NOT been declared operational, THEN ensure all previous Event Notification Forms and Event Technical Data Sheets are promptly faxed to and received by the EOF.

1. Report readiness status to the TSC Manager when prepared to assume the Admin Support position.

B. IF relieving another Admin Support, THEN perform a formal turnover with the current Admin Support:

1. Obtain the "Admin Support" binder and review any documents used.

2. Review Facility Log.

3. Obtain a briefing from the acting Admin Support on the emergency, plant conditions and any actions that have been completed or are in progress.

4. Relieve the current Admin Support.

C. Inform the TSC Manager and TSC staff that you are now filling the duties of Admin Support.

ADMINISTRATIVE SUPPORT

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the TSC

A. IF you leave the area, THEN:

1. Inform the TSC Manager of destination and expected return.

2. Inform the TSC Manager of return.

(a) Upon return, obtain a briefing on any events that have occurred while away.

2.2 Maintain a log

A. Use WebEOC or if unavailable, a Log Sheet Form, to maintain a log of significant items pertaining to the Admin Support position.

B. Log when Admin Support duties were assumed.

2.3 Ensure equipment readiness

A. Verify that copy machine and fax machines are functioning properly. If not, notify IT Specialist.

B. Make arrangements for replacement and/or repairs of equipment as needed.

2.4 Coordinate with EOF for arrangements for food and drink for onsite ERO.

2.5 Ensure ENS Communicator immediately receives all Incoming Event Notification Forms and Event Technical Data Sheets.

2.6 Make copies and distribute documents received as needed.

2.7 Facilitate the integration of NRC Personnel.

A. Ensure NRC area in TSC/Control is set up (Viewing Gallery Conference Room).

B. Provide site orientation information to NRC personnel.

C. Ensure EPM assigns a person to brief the NRC upon arrival.

D. Escort or direct the NRC team to their conference area.

ADMINISTRATIVE SUPPORT

3.0 CLOSEOUT ACTIVITY

3.1 Assist TSC personnel in returning all equipment to proper storage locations.

3.2 Review all documentation maintained during the emergency.

A. Verify that logs, forms, and other documentation are complete.

3.3 Log off PCs as necessary.

3.4 Provide all logs and records to the TSC Manager upon termination of the emergency and entry into the Recovery Phase.

TSC LOG KEEPER

TSC Log Keeper Name: _____ Date: _____

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the TSC:

1. Sign in on the Facility Sign-In/Accountability Form

2. Sign in on the TSC staffing board if applicable.

3. Obtain the "Log Keeper" binder & ID Badge

B. Review plant data electronic displays and any other available sources to become familiar with current plant status.

C. Obtain a briefing from the TSC Emergency Plant Manager or TSC Manager on emergency status.

D. Log into WebEOC. If WebEOC is unavailable, create and maintain a facility log.

1.2 Assume the position of TSC Log Keeper

A. IF initial activation, THEN:

1. Inform the TSC Manager when you are prepared to assume TSC Log Keeper duties.

B. IF relieving another TSC Log Keeper, THEN perform a formal turnover with the current Log Keeper.

1. Review the current log.

2. Obtain briefing from current Log Keeper on the emergency and any actions that have been completed or are in progress.

3. Sign in on the Facility Sign-In/Accountability Form and TSC staffing board if applicable.

4. Inform the TSC Manager that you are now the TSC Log Keeper.

5. Log into WebEOC.

TSC LOG KEEPER

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITIES NOTES

2.1 Maintain personnel accountability

A. IF you are temporarily leaving the work area THEN inform the TSC Manager you are leaving the work area.

B. Upon return, obtain a briefing from the TSC Manager on any events, which have occurred while you were away.

2.2 Perform TSC Log Keeper Duties

A. Assist the TSC Manager as necessary.

B. Prompt the TSC Manager to maintain regular briefs.

C. Maintain a chronological log of emergency status and TSC activities on WebEOC. Use the Log Sheet Form if WebEOC is not available.

D. Display the repair and corrective action team status via WebEOC, if available.

E. Provide other clerical functions as needed.

2.3 Conduct and support of briefings. **CAUTION** Be aware of sensitive information if Security event is in progress - coordinate information to be presented at the brief with the Security Coordinator.

A. Assist the TSC Manager in preparations for facility briefings, if requested.

B. Support the Plant Status/Briefing, if requested.

C. Ensure information provided in the briefing is captured and entered into WebEOC/facility log.

3.0 CLOSEOUT ACTIVITY

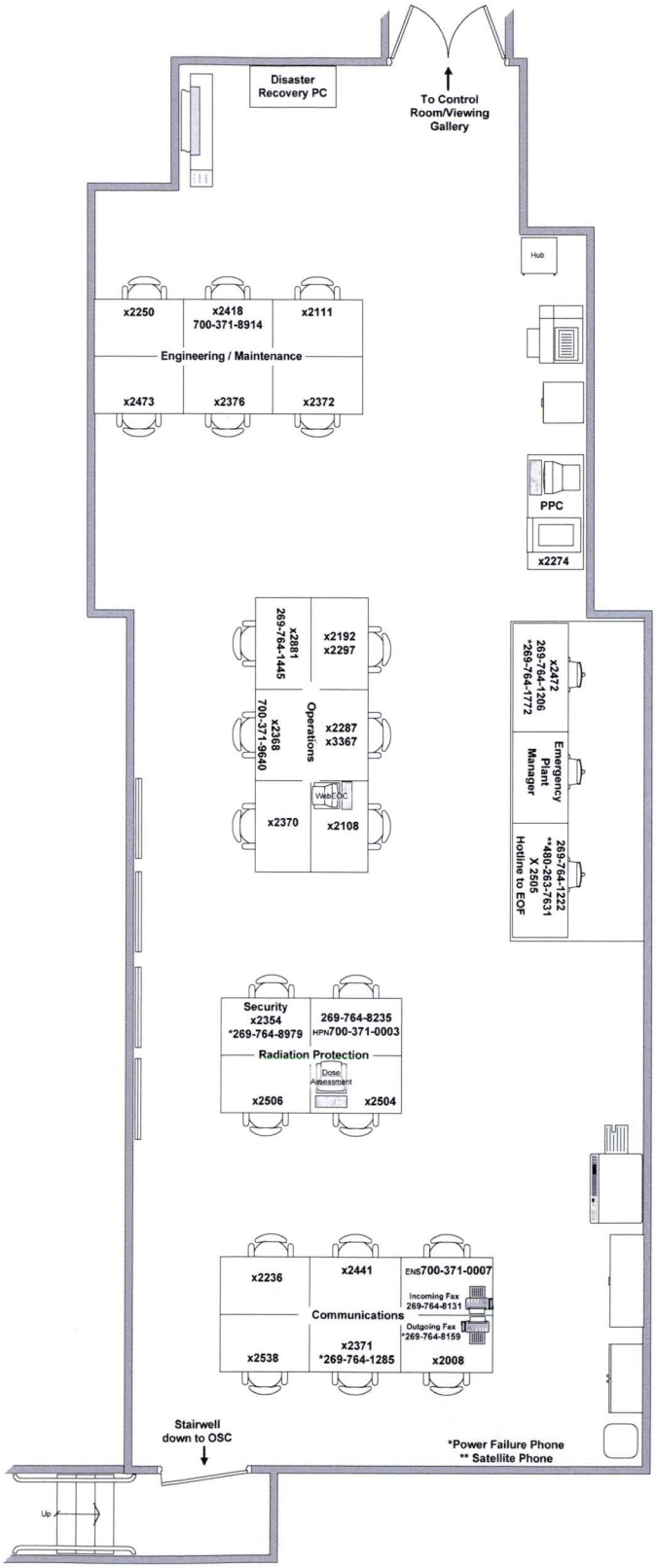
3.1 Return all equipment to proper storage locations.

3.2 Review all documentation the TSC Log Keeper maintained during the emergency.

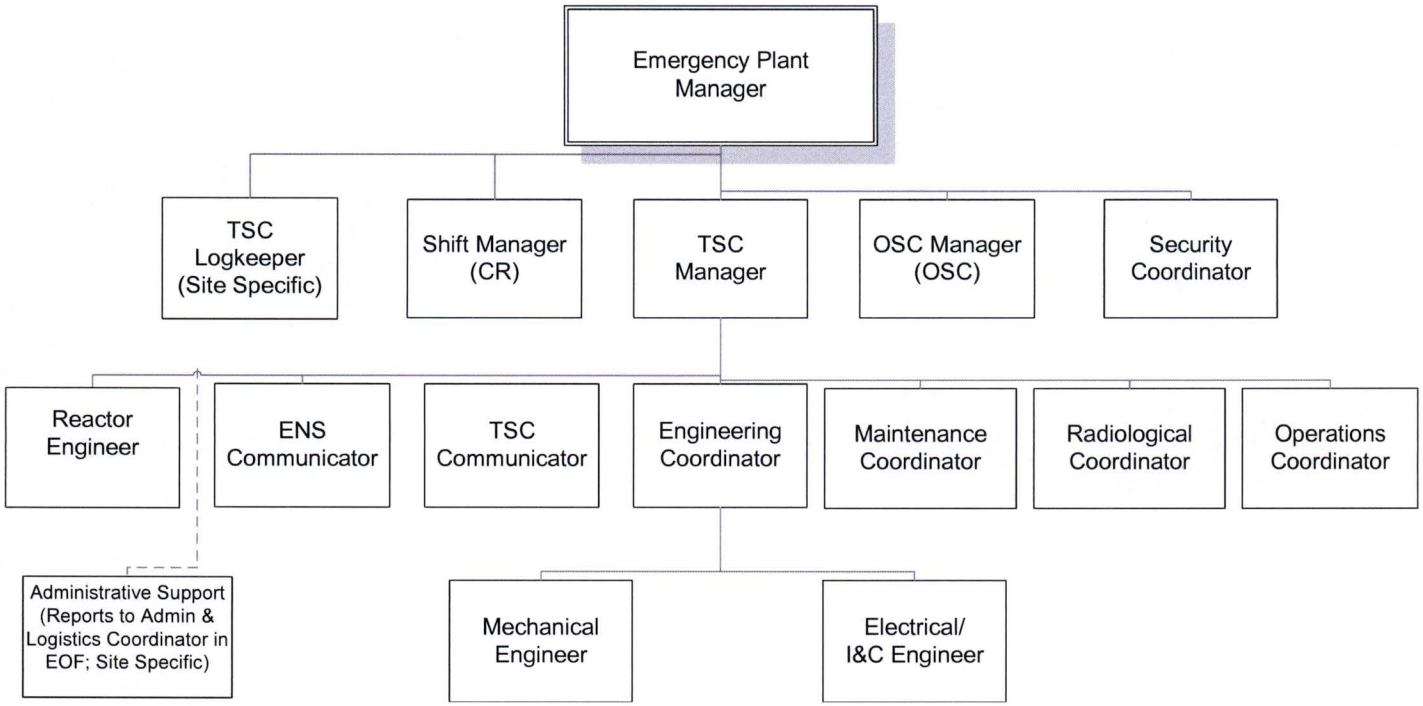
A. Verify logs, forms, and other documentation are complete.

3.3 Provide all logs, forms and records to the TSC Manager upon termination of the emergency and entry into the Recovery Phase.

LAYOUT/PHONE LOCATIONS



ORGANIZATION CHART



ALTERNATIVE TSC

ALTERNATIVE TSC AND OSC FACILITIES

In the event that the TSC is unavailable during an emergency, the affected ERO personnel will be directed to report to their alternative offsite facility.

The alternative TSC facility is co-located within the EOF at 330 West Main Street, Benton Harbor. This facility is equipped to provide communication capability with the EOF, Control Room, Plant Security and offsite agencies as needed, and capability for engineering assessment activities including damage control team planning and preparation.

The overall goal for the Alternative TSC is to prepare response/repair teams for rapid deployment to the site when safe access is restored.

The following suggestions are provided to assist personnel organization and preparation for return to the onsite Emergency Response Facilities (ERFs):

- TSC leadership should assemble in the EOF Conference Room (Rm #122, see attached map).

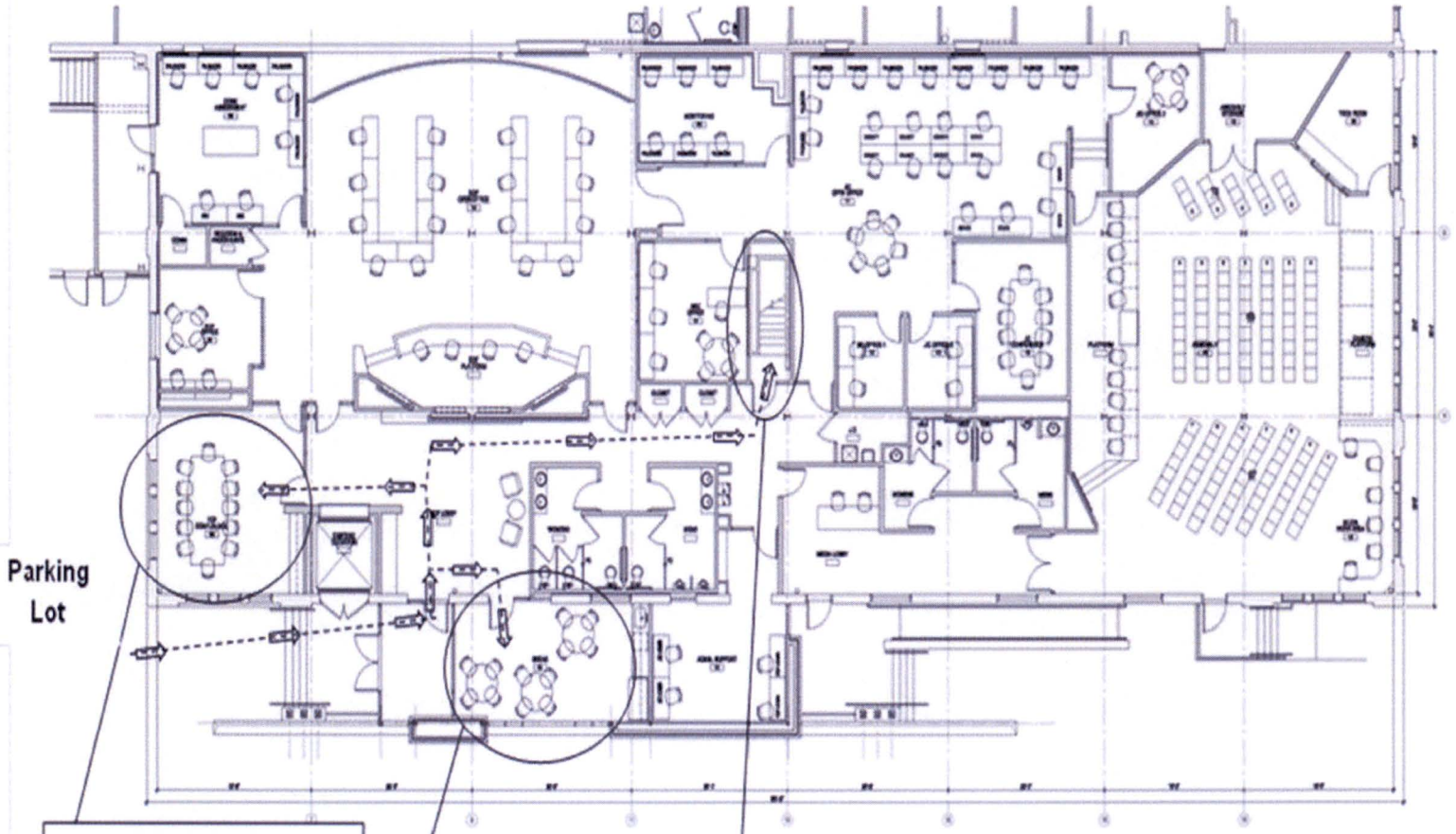
- Other TSC support personnel should assemble in the EOF parking lot (weather permitting) or, during inclement weather, the basement of the EOF (Key #1 from the key box in the Janitor Closet will be needed to access the basement storage room).

- TSC leadership and Operations Support personnel should establish communications with counterparts using normal bridge conference lines.

- TSC Engineering and Operations Support personnel should perform site damage assessment using Plant Data System information and communications from the Control Room and/or Site Security.

- TSC leadership should establish priorities and a listing of actions to be accomplished upon return the site. The results of these planning efforts should be shared with the EOF Leadership.

ALTERNATIVE TSC



ALTERNATIVE TSC/OSC LOCATIONS

Procedure No EI-4.2
Revision 24
Effective Date 3/15/16

PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

Approved: **TPHoran** / **3/10/16**
Procedure Sponsor **Date**

Process Applicability Exclusion ☒

New Procedure/Revision Summary:

Revision 24

Specific Changes:

DRN-13-00334, DRN-13-00469, DRN-13-00721 DRN-14-00652 DRN-13-00957

- Incorporated changes to align with the standardized Entergy Procedure EN-EP-611, "Operations Support Center (OSC) Operations"
- Removed duplicate tasks that are in the fleet procedure (EN-EP-611) and maintain any site specific requirements.

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

Table of Contents

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

Table of Contents

ATTACHMENTS

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

1.0 PURPOSE

This procedure supplements EN-EP-611, "Operations Support Center (OSC) Operations." This procedure provides additional guidance that covers Emergency Response Organization (ERO) positions not included in the fleet procedure, along with other site-specific information concerning the activation and operation of the OSC.

2.0 REFERENCES

2.1 SOURCE DOCUMENTS

2.1.1 NUREG-0654, Section H, "Emergency Facilities and Equipment"

2.1.2 Site Emergency Plan, Section 7, "Emergency Facilities and Equipment"

2.2 REFERENCE DOCUMENTS

2.2.1 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"

2.2.2 Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Program"

2.2.3 Emergency Implementing Procedure EI-12.1, "Personnel Accountability and Assembly"

2.2.4 Emergency Implementing Procedure EI-8, "Onsite Radiological Monitoring"

2.2.5 Emergency Implementing Procedure EI-9, "Offsite Radiological Monitoring"

2.2.6 Emergency Implementing Procedure EI-10, "Accident Environmental Assessment."

2.2.7 Emergency Implementing Procedure EI-14, "Medical Care/Treatment of Contaminated, Injured Personnel"

2.2.8 Emergency Implementing Procedure EI-12.3, "Search and Rescue Team Responsibilities"

2.2.9 Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment"

2.2.10 Emergency Implementing Procedure EI-7.0, "Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates"

2.2.11 Emergency Implementing Procedure EI-7.10, "Post Accident Sampling, Radioactive Gaseous Effluent Monitoring"

2.2.12 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

2.2.13 Entergy Procedure EN-LI-100, "Process Applicability Determination"

2.2.14 Entergy Procedure EN-EP-611, "Operations Support Center (OSC) Operations"

2.3 COMMITMENTS

2.3.1 CMT932002114, Response to NRC inspection Report 93-07. (5.4) Providing guidance on relocation of OSC personnel in the event the facility becomes uninhabitable.

3.0 DEFINITIONS

Refer to EN-EP-611, "Operations Support Center (OSC) Operations," for definitions.

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

The OSC shall be activated within approximately 60 minutes of an Alert or higher emergency classification. The OSC may be activated before this time at the discretion of the Emergency Plant Manager (EPM).

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

5.0 PROCEDURE

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

5.1 FACILITY DESCRIPTION

5.1.1 Facility Function

The OSC provides a control point for onsite and initial offsite (prior to EOF activation) support involving Chemistry, Radiation Protection (RP), Maintenance, and Operations during declared emergency events.

5.1.2 Physical Location

The OSC encompasses Assembly Area V (located in the 611' Service Building) and Assembly Area VI (located in the Main Locker Room). Attachment 2, "Operations Support Center Floor Plan," provides a floor plan of the OSC.

5.1.3 Organization

The OSC consists of personnel outlined in Section 5.3, OSC Personnel, of this procedure. Attachment 3, "Operations Support Center Organizational Chart," provides a block diagram of OSC organization. Nuclear Plant Operators are not included on Attachment 3. See Section 5.3.11, Nuclear Plant Operators (NPO), for specifics.

5.1.4 Equipment

OSC emergency equipment shall be as described in Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment." Additional equipment may be obtained as habitability of an area is ascertained.

TITLE: OPERATIONS SUPPORT CENTER ACTIVATION

5.2 ACTIVATION

5.2.1 Assembly and Accountability

a. Upon sounding of the emergency siren, or at the direction of the Emergency Plant Manager, personnel assigned to Assembly Areas V and VI shall proceed to their assembly area for accountability.

b. Initial habitability of the OSC should be verified upon assembly. If the area dose rate exceeds 500 mrem/hr or air concentration exceeds 40 DACs, immediately notify the OSC Manager.

c. Personnel accountability shall be performed per Emergency Implementing Procedure EI-12.1, "Personnel Accountability."

5.2.2 Physical Arrangement

a. Establish personnel zones per the layout on Attachment 2 of this procedure, or as directed by the OSC Manager.

b. Establish a frisking station for equipment and personnel monitoring in a low background area, < 200 cpm, as close to the entrance of the OSC as radiological conditions permit.

c. Establish a station for sample analysis in accordance with Emergency Implementing Procedure EI-8, "Onsite Radiological Monitoring," Section 5.2.3, "OSC Activation."

5.3 OSC PERSONNEL

5.3.1 Rad/Chem Coordinator

The Rad/Chem Coordinator responsibilities include:

NOTE:	Quick dispatch of Search and Rescue Teams is vital in case missing persons need medical assistance.

a. Organize and direct Search and Rescue teams in accordance with Emergency Implementing Procedure EI-12.3, "Search and Rescue Team Responsibilities," as needed.

b. Organize and direct onsite monitoring teams in accordance with Emergency Implementing Procedure EI-8, "Onsite Radiological Monitoring," as needed.

c. Organize and direct first aid teams in accordance with Emergency Implementing Procedure EI-14, "Medical Care/Treatment of Contaminated, Injured Personnel." If offsite medical assistance is needed in an Alert or above, request support through the TSC.

d. Organize and direct emergency sampling and analysis in accordance with Emergency Implementing Procedures EI-7.0, "Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates," and/or EI-7.10, "Post Accident Sampling, Radioactive Gaseous Effluent Monitoring."

e. Organize and direct offsite monitoring teams, prior to EOF activation in accordance with Emergency Implementing Procedure EI-9, "Offsite Radiological Monitoring," as needed.

5.4 EVACUATION/RELOCATION (CMT932002114)

a. If the OSC area dose rate exceeds 500 mrem/hr or air concentration exceeds 40 DACs, the OSC shall consider relocating to an alternate location as determined by radiological conditions (eg, Mechanical Maintenance Shop). Relocation shall be performed with the concurrence of the Emergency Plant Manager unless waiting for concurrence would endanger OSC personnel. The evacuation/relocation should be announced over the public address system.

b. If a suitable alternate facility cannot be found onsite or cannot be safely accessed, OSC personnel will be relocated / redirected to the alternative OSC. Refer to Attachment 5.

c. Equipment relocated upon evacuation should be designated by the OSC Manager per Attachments 1 through 4 of Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment" (as appropriate).

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "Operations Support Center Activation List"

6.1.2 Attachment 2, "Operations Support Center Floor Plan"

6.1.3 Attachment 3, "Operations Support Center Organizational Chart"

6.1.4 Attachment 4, "Operations Support Center Instrument Control Log Sheet"

6.1.5 Attachment 5, "Alternative OSC"

6.1.6 Attachment 6, "RP Technicians"

6.1.7 Attachment 7, "Non-Traditional RP Technicians"

6.1.8 Attachment 8, "OSC Radio Communicator"

6.1.9 Attachment 9, "OSC Admin Support"

6.1.10 Attachment 10, "Chemistry Technicians"

6.1.11 Attachment 11, "Maintenance, Electrical, and I&C Technicians"

6.1.12 Attachment 12, "Nuclear Plant Operators"

6.1.13 Attachment 13, "Offsite Monitoring Teams"

6.1.14 Attachment 14, "Onsite Monitoring Teams"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Entergy Procedure EN-AD-103, "Document Control and Records Management Programs."

7.0 SPECIAL REVIEWS

7.1 The scope of this procedure does not include activities that require a Process Applicability Determination (PAD) review in accordance with EN-LI-100, "Process Applicability Determination." Therefore, changes to this procedure do not require a PAD review.

7.2 Revisions of this procedure require a 50.54(q) review per Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Program."

OPERATIONS SUPPORT CENTER ACTIVATION LIST

SECTION 1: ASSEMBLY AND ACCOUNTABILITY

a. OSC habitable? Yes___ No___ Time _____

b. Accountability completed. Time _____

c. Announce Key Players/Positions to OSC personnel. Time _____

d. Emergency Classification posted.

e. Command and Control posted.

SECTION 2: PHYSICAL ARRANGEMENT

a. Layout per Attachment 2, "Operations Support Center Floor Plan."

b. Frisking stations established.

c. Equipment control point established.

d. Sample station established.

e. Communications with TSC established.

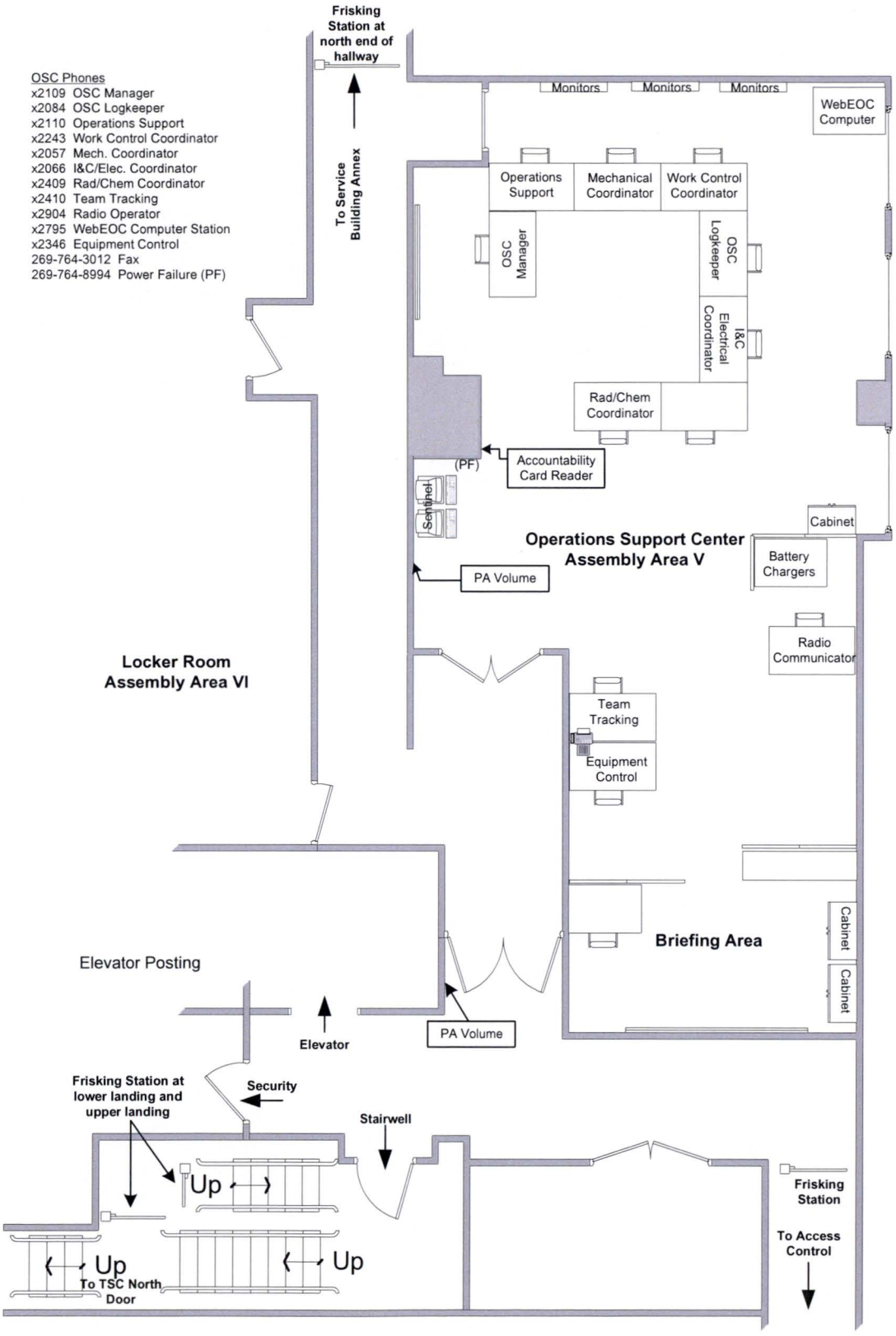
f. Radio communications established.

g. Information tracking established (ie, WebEOC or manual log keeping).

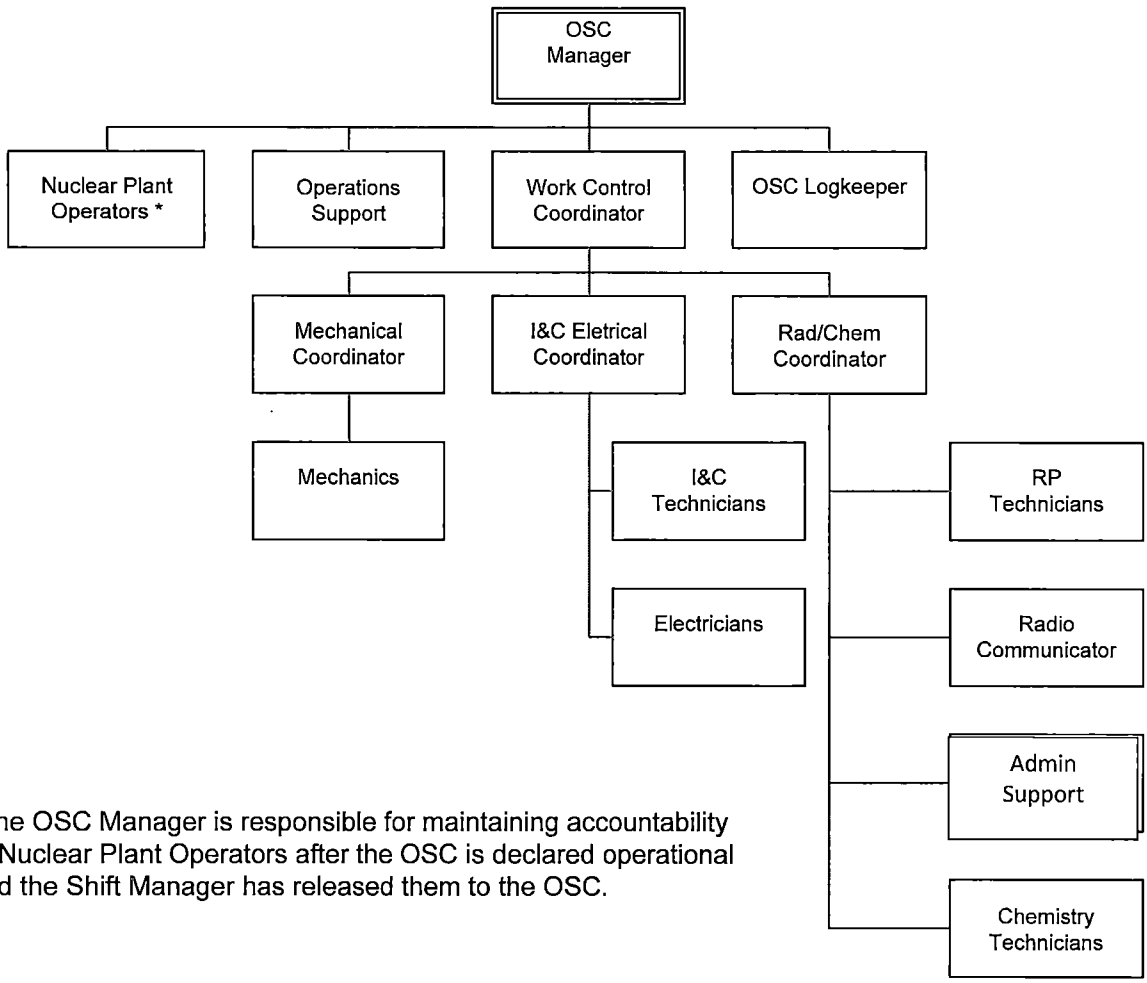
h. If needed, direct I&C Technicians to adjust the OSC PA volume potentiometer located on the west wall of the OSC. The gain amplifier may also need to be adjusted which is located in the computer equipment room in the south hallway outside the OSC.

i. If needed, direct I&C Technicians to adjust site-wide master PA volume potentiometer in the telephone room (3rd floor Administration Building) with Emergency Plant Manager approval. Key #196 from the Control Room will be needed to gain access to the phone room.

OPERATIONS SUPPORT CENTER FLOOR PLAN



OPERATIONS SUPPORT CENTER ORGANIZATIONAL CHART



*The OSC Manager is responsible for maintaining accountability of Nuclear Plant Operators after the OSC is declared operational and the Shift Manager has released them to the OSC.

OPERATIONS SUPPORT CENTER
INSTRUMENT CONTROL LOG SHEET

Date: _____

Name	Instrument Type	Instrument Serial Number	Location	Time		Contam		Operation		Instrument Tagged OOS
				Out	In	Out	In	Out	In	

ALTERNATIVE OSC

ALTERNATIVE TSC AND OSC FACILITIES

In the event that the OSC is unavailable during an emergency, the affected ERO personnel will be directed to report to their alternative offsite facility. The alternative OSC facility is co-located within the EOF at 330 West Main Street, Benton Harbor. This facility is equipped to provide communication capability with the EOF, Control Room, Plant Security, and offsite agencies as needed, and capability for engineering assessment activities including damage control team planning and preparation.

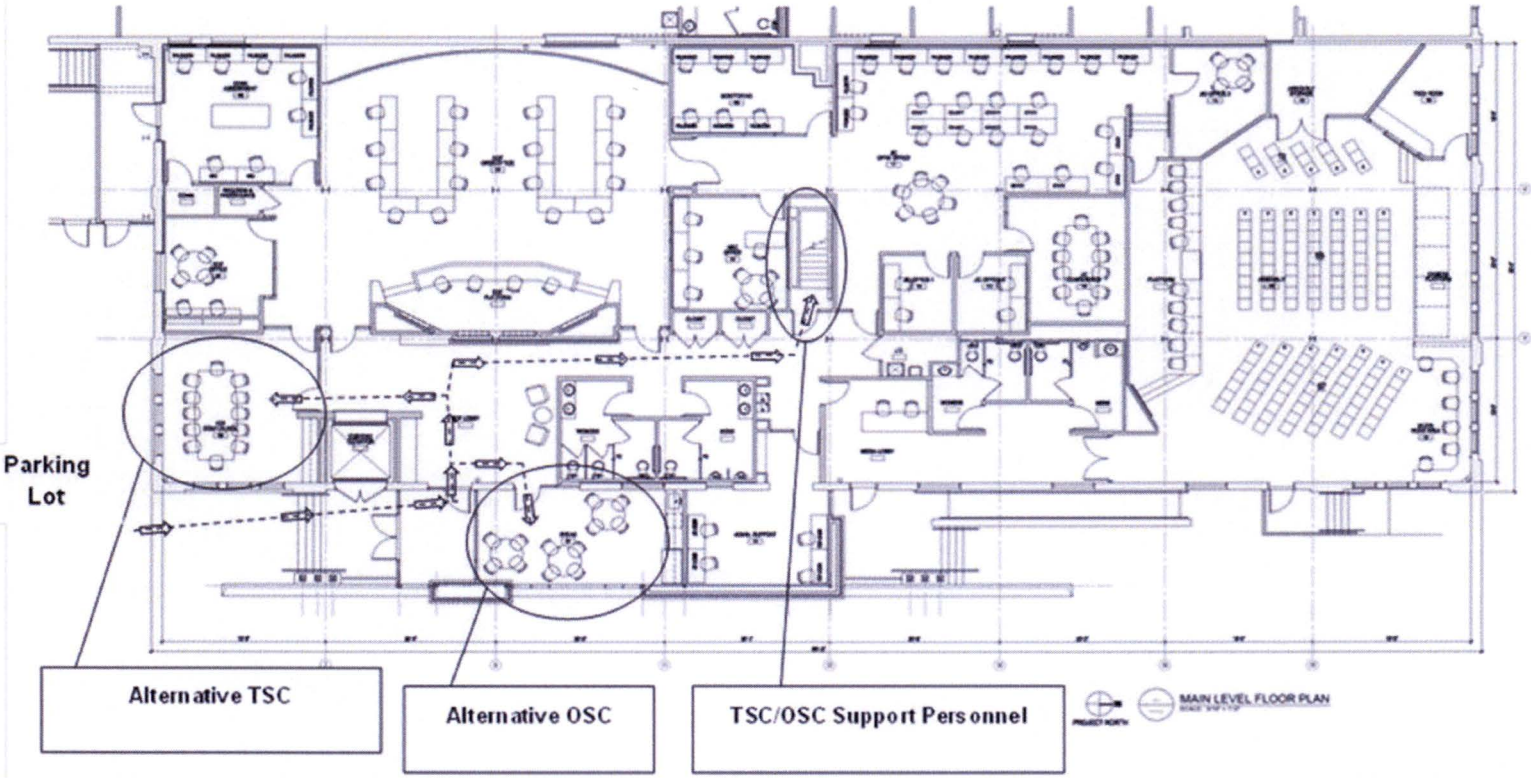
The overall goal for the Alternative OSC is to prepare response/repair teams for rapid deployment to the site when safe access is restored.

The following suggestions are provided to assist personnel organization and preparation for return to the onsite Emergency Response Facilities (ERFs):

- OSC leadership should assemble in the Common Area (Rm #101, see attached map).
- Other OSC support personnel should assemble in the EOF parking lot (weather permitting) or, during inclement weather, the basement of the EOF (Key #1 from the key box in the Janitor Closet will be needed to access the basement storage room).
- OSC leadership and Operations Support personnel should establish communications with counterparts using normal bridge conference lines.
- Operations Support personnel should perform site damage assessment using Plant Data System information and communications from the Control Room and/or Site Security.
- OSC leadership should establish priorities and a listing of actions to be accomplished upon return the site. The results of these planning efforts should be shared with the EOF Leadership.

RADIOLOGICAL FIELD MONITORING TEAM DEPLOYMENT FROM THE EOF

Field Monitoring Teams may be dispatched from the EOF. One Field Monitoring Team Emergency Van and one ad-hoc Field Monitoring Team Kit is available at the EOF. The Field Monitoring Team deployment kits are staged in the back hall off the Dose Assessment Room. An ad-hoc team radio with antenna is available for use in a private vehicle. Additionally each kit is equipped with a cell phone and car charger for communication with the EOF, should radio communications fail.



ALTERNATIVE TSC/OSC LOCATIONS

RP TECHNICIANS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, "Facility Sign-In/Accountability Form."

B. Review facility electronic displays, plant data, and any other available information to become familiar with current plant and radiological conditions.

C. Report to the OSC Rad/Chem Coordinator.

1. If directed to conduct offsite radiological monitoring, then exit this attachment and refer to Attachment 13, "Offsite Radiological Monitoring."

2. If directed to conduct onsite radiological monitoring, then exit this attachment and refer to Attachment 14, "Onsite Radiological Monitoring."

D. Assume the position of OSC RP Tech.

1. Obtain an "OSC RP Tech" binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume OSC RP Tech position.

E. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

RP TECHNICIANS

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If dispatched from the OSC:

1. Receive a pre-deployment briefing from the Rad/Chem Coordinator, or designee.

2. Check out with the OSC Admin Support.

3. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

4. Maintain communications with the OSC, contacting them by radio or phone at least every 30 minutes.

B. When returning to the OSC:

1. Check in with the OSC Admin Support

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

3. Update EP-11-All, Repair and Corrective Action Assignment Form with dose received and new dose margin.

4. Report to the Rad/Chem Coordinator or designee for debriefing.

2.2 Log important information and activities.

A. Significant changes in Plant conditions while deployed, and times

B. Communications and requests from the OSC

C. Surveys performed

D. Specific job coverage details

E. Problems or deficiencies noted

F. Dose tracking for team members

G. Personnel monitored at Onsite Control Point(s)

RP TECHNICIANS

2.3 Maintain equipment control throughout the emergency, utilizing Attachment 4, "Operations Support Center Instrument Control Log Sheet," as appropriate.

2.4 If directed, conduct habitability monitoring of assembly areas in accordance with EI-8, "Onsite Radiological Monitoring."

2.5 If directed, perform search and rescue operations in accordance with EI-12.3, "Search and Rescue Team Responsibilities."

2.6 If directed, perform first aid operations in accordance with EI-14, "Medical Care/Treatment of Contaminated, Injured Personnel."

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

NON-TRADITIONAL RP TECHNICIANS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

B. Review facility electronic displays, plant data and any other available information to become familiar with current plant and radiological conditions.

C. Report to the OSC Rad/Chem Coordinator.

1. If directed to conduct offsite radiological monitoring, then exit this attachment and refer to Attachment 13, "Offsite Radiological Monitoring."

2. If directed to conduct onsite radiological monitoring, then exit this attachment and refer to Attachment 14, "Onsite Radiological Monitoring."

D. Assume the position of OSC Non-Traditional RP Tech.

1. Obtain an OSC "Non-Traditional RP Tech" binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume OSC Non-Traditional RP Tech position.

E. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

NON-TRADITIONAL RP TECHNICIANS

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If dispatched from the OSC:

1. Check out with the OSC Admin Support.

2. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

B. When returning to the OSC:

1. Check in with the OSC Admin Support.

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

3. Report to the Rad/Chem Coordinator or designee for debriefing.

2.2 Maintain equipment control throughout the emergency, utilizing Attachment 4, "Operations Support Center Instrument Control Log Sheet," as appropriate.

2.3 If directed, conduct habitability monitoring of assembly areas in accordance with EI-8, "Onsite Radiological Monitoring."

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

OSC RADIO COMMUNICATOR

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

B. Review facility electronic displays, plant data and any other available information to become familiar with current plant and radiological conditions.

C. Assume the position of OSC Radio Communicator.

1. Obtain the "OSC Radio Communicator" binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume your position.

D. IF relieving another Radio Communicator, THEN perform a formal turnover:

1. Review current log(s).

2. Obtain briefing from current Radio Communicator on the emergency and any actions that have been completed or are in progress.

3. Relieve current Radio Communicator.

4. Inform the Rad/Chem Coordinator that you are now the Radio Communicator.

E. Establish Radio Communications

1. Perform a radio check with one of the onsite OSC teams, using a handheld radio.

2. If needed, set up the OSC radio base station.

3. Perform a radio check with one of the offsite Radiological Monitoring Teams.

F. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

OSC RADIO COMMUNICATOR

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If leaving the OSC:

1. Check out with the OSC Admin Support.

2. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

B. When returning to the OSC:

1. Check in with the OSC Admin Support.

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

2.2 Ensure efficient and timely information flow and documentation of messages by documenting incoming information from onsite/offsite teams for OSC Rad/Chem Coordinator review and disposition.

2.3 Ensure the 10-mile EPZ map is updated with meteorological data.

2.4 Upon EOF activation, establish EOF radio/phone contact and ensure the following information is relayed to the EOF Offsite Team Coordinator (as applicable):

A. Team(s) identification and location

B. Pertinent surveys, results

C. Pertinent samples taken

D. Team(s) dose

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

OSC ADMIN SUPPORT

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

B. Review facility electronic displays, plant data and any other available information to become familiar with current plant and radiological conditions.

C. Assume the position of OSC Admin Support.

1. Obtain the "OSC Admin Support: binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume your position.

D. If relieving another Admin Support, THEN perform a formal turnover:

1. Review current log(s).

2. Obtain briefing from current Admin Support on the emergency and any actions that have been completed or are in progress.

3. Relieve current Admin Support.

4. Inform the Rad/Chem Coordinator that you are now the Admin Support.

E. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. Maintain the Response Team Tracking Board.

B. Ensure all personnel leaving the OSC sign out on EP-7-ALL, Facility Sign-In/Accountability Form.

C. Ensure all personnel returning to the OSC sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

OSC ADMIN SUPPORT

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

CHEMISTRY TECHNICIANS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

B. Review facility electronic displays, plant data and any other available information to become familiar with current plant and radiological conditions.

C. Assume the position of OSC Chemistry Technician.

1. Obtain an "OSC Chemistry Technician" binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume your position.

D. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If dispatched from the OSC:

1. Check out with the OSC Admin Support.

2. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

B. When returning to the OSC:

1. Check in with the OSC Admin Support.

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

3. Update EP-11-All, Repair and Corrective Action Assignment Form with dose received and new dose margin.

4. Report to the Rad/Chem Coordinator or designee for debriefing.

CHEMISTRY TECHNICIANS

2.2 Maintain equipment control throughout the emergency, utilizing Attachment 4, "Operations Support Center Instrument Control Log Sheet," as appropriate.

2.3 If directed, perform emergency sampling and analysis in accordance with Emergency Implementing Procedures EI-7.0, "Emergency Post Accident Sampling and Determination of Fuel Failure Using Dose Rates," and/or EI-7.10, "Post Accident Sampling, Radioactive Gaseous Effluent Monitoring."

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency

MECHANICAL, ELECTRICAL, AND I&C TECHNICIANS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

B. Review facility electronic displays, plant data and any other available information to become familiar with current plant and radiological conditions.

C. Assume the position of OSC Mechanical, Electrical, or I&C Technician.

1. Obtain the appropriate binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Mechanical or Electrical/I&C Coordinator when prepared to assume your position.

D. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If dispatched from the OSC:

1. Check out with the OSC Admin Support.

2. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

B. When returning to the OSC:

1. Check in with the OSC Admin Support.

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

3. Update EP-11-All, Repair and Corrective Action Assignment Form with dose received and new dose margin.

4. Report to the OSC Mechanical or Electrical/I&C Coordinator for debriefing.

MECHANICAL, ELECTRICAL, AND I&C TECHNICIANS

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Manager upon termination of the emergency.

NUCLEAR PLANT OPERATORS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

NOTE:	Initially, the Nuclear Plant Operators will be dispatched from the Control Room, until they are released to the OSC by the Shift Manager. The following checklist will be followed upon their arrival at the OSC.

1.1 Initial Orientation

A. Upon arrival at the OSC, card in the accountability readers (as required) and/or sign in on EP-7-ALL, Facility Sign-In/Accountability Form.

1. Obtain the appropriate binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Manager when prepared to assume your position.

B. If directed, assist with the activation of the OSC. Refer to Attachment 1, "Operations Support Center Activation List."

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Maintain personnel accountability in the OSC.

A. If dispatched from the OSC:

1. Check out with the OSC Admin Support.

2. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

B. When returning to the OSC:

1. Check in with the OSC Admin Support.

2. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

3. Update EP-11-All, Repair and Corrective Action Assignment Form with dose received and new dose margin.

4. Report to the OSC Mechanical or Electrical/I&C Coordinator for debriefing.

NUCLEAR PLANT OPERATORS

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Manager upon termination of the emergency

OFFSITE MONITORING TEAMS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Assume the position of Offsite Monitoring Team.

1. Obtain the "Offsite Monitoring Team" Binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume your position.

B. Prepare for deployment

1. Obtain the equipment required for offsite monitoring in accordance with EI-9, "Offsite Radiological Monitoring."

2. Obtain a pre-deployment briefing from the OSC Rad/Chem Coordinator.

3. Check out with the OSC Admin Support.

4. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

5. Prepare the emergency van for deployment in accordance with EI-9, "Offsite Radiological Monitoring.

C. Inform the OSC Radio Communicator when ready to deploy.

OFFSITE MONITORING TEAMS

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Log important information and activities.

1. Significant changes in Plant conditions while deployed, and times
2. Meteorological data, observations
3. Communications and requests from the OSC
4. Surveys performed
5. Specific job coverage details
6. Problems or deficiencies noted
7. Dose tracking for team members
8. Personnel monitored at Reassembly Monitoring Stations

2.2 Offsite Radiological Monitoring will be conducted in accordance with EI-9, "Offsite Radiological Monitoring."

2.3 Environmental Sampling will be conducted in accordance with EI-10, "Accident Environmental Assessment."

2.4 When returning to the OSC:

A. Check in with the OSC Admin Support.

B. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

C. Report to the OSC Rad/Chem Coordinator, or designee, for debriefing.

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms, and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

ONSITE MONITORING TEAMS

1.0 INITIAL RESPONSIBILITY/ACTIVITY

1.1 Initial Orientation

A. Assume the position of Onsite Monitoring Team.

1. Obtain the "Onsite Monitoring Team" Binder & ID Badge.

2. Use EP-3-ALL, Log Sheet Forms, to maintain a log.

3. Report readiness to the OSC Rad/Chem Coordinator when prepared to assume your position.

B. Prepare for deployment

1. Obtain the equipment required for onsite monitoring in accordance with EI-8, "Onsite Radiological Monitoring."

2. Obtain a pre-deployment briefing from the OSC Rad/Chem Coordinator.

3. Check out with the OSC Admin Support.

4. Sign out on the EP-7-All, Facility Sign-In/Accountability Form.

2.0 CONTINUOUS RESPONSIBILITY/ACTIVITY

2.1 Onsite Radiological Monitoring will be conducted in accordance with EI-8, "Onsite Radiological Monitoring."

2.2 Environmental Sampling will be conducted in accordance with EI-10, "Accident Environmental Assessment."

2.3 When returning to the OSC:

A. Check in with the OSC Admin Support.

B. Sign in on the EP-7-All, Facility Sign-In/Accountability Form.

C. Report to the OSC Rad/Chem Coordinator, or designee, for debriefing.

ONSITE MONITORING TEAMS

3.0 CLOSEOUT RESPONSIBILITY/ACTIVITY

3.1 Assist OSC personnel to return all equipment to proper storage locations.

3.2 Review all documentation you maintained during the emergency. Ensure logs, forms and other documentation is complete.

3.3 Provide all logs and records to the OSC Rad/Chem Coordinator or OSC Manager upon termination of the emergency.

Procedure No EI-4.3
Revision 28
Effective Date 3/15/16

PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: EMERGENCY OPERATIONS FACILITY ACTIVATION

Approved: MEFields for TPHoran / 3/11/16
Procedure Sponsor **Date**

Process Applicability Exclusion ☒

New Procedure/Revision Summary:

Rev 28, Imminent Revision

Specific Changes

The following Document Revision Notices were reviewed and are incorporated in the revised procedure: DRN-14-00612, DRN-14-01393, DRN-14-01400, DRN-15-01477. (DRN documents attached.)

This revision to Palisades Emergency Implementing Procedure EI-4.3, "Emergency Operations Facility Activation" is to supplement changes with the issuance of Entergy Procedure EN-EP-609, "Emergency Operations Facility (EOF) Operations."

The intent is to remove any duplicate tasks that are in EN-EP-609 and maintain any site specific requirements.

TITLE: EMERGENCY OPERATIONS FACILITY ACTIVATION

Table of Contents

ATTACHMENTS

TITLE: EMERGENCY OPERATIONS FACILITY ACTIVATION

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

1.0 PURPOSE

This procedure supplements Entergy Procedure EN-EP-609, "Emergency Operations Facility (EOF) Operations." This procedure provides additional guidance that covers Emergency Response Organization (ERO) positions not included in the fleet procedure, along with other site-specific information concerning the activation and operation of the EOF.

2.0 REFERENCES

2.1 SOURCE DOCUMENTS

2.1.1 Site Emergency Plan

2.1.2 United States Environmental Protection Agency Manual EPA 400-R-92-001, "Protective Action Guidelines and Protective Actions for Nuclear Incidents"

2.2 REFERENCE DOCUMENTS

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

2.2.2 Emergency Implementing Procedure EI-3, "Communications and Notifications"

2.2.3 Emergency Implementing Procedure EI-5.1, "Recovery"

2.2.4 Emergency Implementing Procedure EI-9, "Offsite Radiological Monitoring"

2.2.5 Emergency Implementing Procedure EI-10, "Accident Environmental Assessment"

2.2.6 Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program"

TITLE: EMERGENCY OPERATIONS FACILITY ACTIVATION

2.2.7 Entergy Procedure EN-LI-100, "Process Applicability Determination"

2.2.8 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"

2.2.9 Emergency Implementing Procedure EI-6.13, "Protective Action Recommendations for Offsite Populations"

2.2.10 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

2.2.11 Entergy Procedure EN-NS-102, "Fitness for Duty Program"

2.2.12 Emergency Implementing Procedure EI-6.7, "Plant Site Meteorological System"

2.2.13 Emergency Implementing Procedure EI-6.8, "Backup and Supplemental Meteorology"

2.2.14 Emergency Implementing Procedure EI-6.9, "Automated Dose Assessment Program"

2.2.15 Entergy Procedure EN-EP-609, "Emergency Operations Facility (EOF) Operations,"

3.0 DEFINITIONS

Refer to Entergy Procedure EN-EP-609, "Emergency Operations Facility (EOF) Operations," for definitions."

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

4.1 The EOF shall be activated at the alert or higher emergency classification. The EOF may be activated before this time if deemed appropriate.

4.2 The EOF should be activated within approximately 60 minutes.

4.3 Emergency response personnel notified to respond to the EOF due to a declared plant emergency (actual or simulated) during their off-duty hours are required to state whether they consider themselves fit for duty, and whether alcohol was consumed within the previous five hours of their arrival, in accordance with Fleet Procedure EN-NS-102, "Fitness for Duty Program."

4.3.1 Individuals who consider themselves fit for duty and have not consumed alcohol within the previous 5 hour period, state/affirm their fitness for duty by entering the EOF and reporting to their work station.

4.3.2 Individuals who have consumed alcohol within the previous five hour period of their arrival to the EOF shall report to the EOF Common Area (kitchen area) to await breath alcohol analysis.

4.3.3 Individuals who consider themselves to be unfit for duty for other reasons, including illness, fatigue or other potentially impairing conditions shall report to the EOF Common Area (kitchen area) to await a fitness determination.

4.3.4 Individuals reporting consumption of alcohol within the previous 5 hour period and those reporting that they consider themselves to be unfit for duty for other reasons are to remain in the EOF Common Area (kitchen area) until advised otherwise by the Administrative and Logistics Coordinator.

5.0 PROCEDURE

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

The attachments to this procedure define the responsibilities of the Emergency Operations Facility staff, whose position task lists are not included in EN-EP-609, Emergency Operations Facility (EOF) Operations, and provide additional guidance related to site-specific activities.

If an ICP is established, the following positions will be assigned and dispatched to the ICP:

a. ICP Security Liaison (preferably a Senior Security Management Member).

b. ICP Operations Liaison (preferably a member of Operations Management or a former SRO).

c. ICP Radiation Protection Liaison (preferably a member of Radiation Protection Management).

TITLE: EMERGENCY OPERATIONS FACILITY ACTIVATION

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "State/County Communicator"

6.1.2 Attachment 2, "EOF Admin Support"

6.1.3 Attachment 3, "Security Coordinator"

6.1.4 Attachment 4, "Emergency Notifications and Non-Company Support"

6.1.5 Attachment 5, "Additional Emergency Support Request"

6.1.6 Attachment 6, "Offsite Facility Locations"

6.1.7 Attachment 7, "Emergency Operations Facility Floor Plan"

6.1.8 Attachment 8, "Incident Command Post (ICP)"

6.1.9 Attachment 9, "Emergency Operations Facility Organization"

6.1.10 Attachment 10, "Mutual Assistance Agreement Between Entergy Nuclear Operations, Inc, Detroit Edison, and American Electric Power"

6.1.11 Attachment 11, "Alternative EOF"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Entergy Procedure EN-AD-103, "Document Control and Records Management Programs."

7.0 SPECIAL REVIEWS

7.1 The scope of this procedure does not include activities that require a Process Applicability Determination (PAD) review per Entergy Procedure EN-LI-100, "Process Applicability Determination." Therefore, changes to this procedure do not require a PAD review.

7.2 Revisions to this procedure require a 50.54(q) review per Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Program."

STATE/COUNTY COMMUNICATOR

1.0 Initial Responsibility/Activity

1.1 Initial Orientation

1.1.1 Upon arrival at the EOF:

a. Card in the accountability readers (as required) and/or sign in on the Facility Sign-In/Accountability Form.

b. Obtain the "State/County Communicator" Binder & ID Badge.

c. Review available sources to obtain overall status of emergency situation.

d. Obtain a briefing from the Emergency Director (ED) or EOF Manager on emergency status.

1.1.2 Assume the position of State/County Communicator:

1.1.3 Ensure communication is available to the states and locals via primary or alternate communication methods by conducting a test of the system.

a. Report readiness status to the EOF Offsite Communicator when prepared to assume your position.

1.1.4 IF relieving another State/County Communicator, THEN perform a formal turnover with the current State/County Communicator:

a. Obtain the position binder and review any documents used.

b. Review facility log.

c. Obtain a briefing from the acting State/County Communicator on the emergency, plant conditions and any actions that have been completed or are in progress.

d. Relieve the current State/County Communicator.

1.1.5 Inform the Offsite Communicator that you are now filling the duties of the State/County Communicator.

STATE/COUNTY COMMUNICATOR

2.0 Continuous Responsibility/Activity

2.1 Maintain personnel accountability in the EOF.

2.1.1 IF you leave the area, THEN:

a. Inform the Offsite Communicator of destination and expected return.

b. Inform the Offsite Communicator of return.

c. Upon return, obtain a briefing on any events that have occurred while away.

2.1.2 Maintain a log

a. Use WebEOC or if unavailable, a Log Sheet Form to maintain a log of significant items pertaining to the State/County Communicator position.

b. Log when State/County Communicator duties were assumed.

c. Log time of offsite agencies notifications.

d. Log all significant communications with other offsite officials

2.1.3 Initial Notification of Emergency Classification and/or PARs to Offsite Agencies

a. When the Offsite Communicator completes an Event Notification Form, including obtaining Emergency Director (ED) approval, transmit the Emergency Notification Form to offsite agencies, within 15 minutes of the Emergency Classification declaration.

b. Verify offsite agencies received and understood the emergency notification.

c. Provide a copy of transmitted Emergency Notification Forms to the EOF Admin Support for distribution to appropriate personnel in the EOF including offsite agencies.

d. Report to the Offsite Communicator when transmittal is complete.

e. Maintain records of all notifications and communications.

STATE/COUNTY COMMUNICATOR

2.1.4 Periodic updates to offsite agencies

When the Offsite Communicator completes a Technical Data Sheet, including obtaining ED approval, transmit the Emergency Notification Form to offsite agencies.

NOTE:	Technical Data Sheets should be transmitted to offsite agencies every 30 minutes, or when protective action recommendations are based on dose assessment.

a. Verify offsite agencies received and understood the Technical Data Sheet.

b. Provide a copy of transmitted Technical Data Sheets to the EOF Admin Support for distribution to appropriate personnel in the EOF including offsite agencies.

c. Report to the Offsite Communicator when transmittal is complete.

d. Maintain records of all notifications and communications.

2.1.5 Additional Communication Responsibilities

_____ a. Assist the Offsite Communicator with requests for additional information from the NRC, State, and County Liaisons. All requests for information, with the resulting responses, are to be documented.

_____ b. Complete additional notifications listed in Attachment 4, "Emergency Notifications and Non-Company Support." These are required (one time) notifications, but will be subsequent to State, County, or NRC formal emergency notifications.

_____ c. If non-company emergency support is needed, contact the appropriate group listed in Attachment 4, "Emergency Notifications and Non-Company Support."

_____ d. Use Attachment 5, "Additional Emergency Support Request," to document requests for non-company emergency support.

STATE/COUNTY COMMUNICATOR

3.0 Closeout Activity

3.1 Assist EOF personnel in returning all equipment to proper storage locations.

3.1.1 Review all documentation maintained during the emergency.

a. Verify that logs, forms, and other documentation are complete.

3.1.2 Log off PCs as necessary.

3.1.3 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.

EOF ADMIN SUPPORT

1.0 Initial Responsibility/Activity

1.1 Initial Orientation.

1.1.1 Upon arrival at the EOF:

a. Card in the accountability readers (as required) and/or sign in on the Facility Sign-In/Accountability Form.

b. Obtain the "Admin Support" Binder & ID Badge.

c. Ensure everyone scans badge on accountability card reader.

1.1.2 Assume the position of EOF Admin Support.

1.1.3 IF the EOF has NOT been declared operational, THEN: Ensure all previous Event Notification Forms and Event Technical Data Sheets are distributed to key positions within the EOF.

a. Report readiness status to the EOF Manager when prepared to assume the Admin Support position.

1.1.4 IF relieving another Admin Support, THEN perform a formal turnover with the current Admin Support:

a. Obtain the Admin Support's position binder and review any documents used.

b. Review facility log.

c. Obtain a briefing from the acting Admin Support on the emergency, plant conditions and any actions that have been completed or are in progress.

d. Relieve the current Admin Support.

1.1.5 Inform the EOF Manager that you are now filling the duties of the Admin Support.

EOF ADMIN SUPPORT

2.0 Continuous Responsibility/Activity

2.1 Maintain personnel accountability in the EOF.

2.1.1 IF you leave the area, THEN:

a. Inform the EOF Manager of destination and expected return.

b. Inform the EOF Manager of return.

c. Upon return, obtain a briefing on any events that have occurred while away.

2.1.2 Maintain a log.

a. Use WebEOC or if unavailable, a Log Sheet Form to maintain a log of significant items pertaining to the Admin Support position.

b. Log when Admin Support duties were assumed.

2.1.3 Ensure equipment readiness.

a. Verify that copy machine and fax machines are functioning properly. If not, notify IT Specialist.

b. Make arrangements for replacement and/or repairs of equipment as needed.

2.1.4 Make copies and distribute documents received as needed.

3.0 Closeout Activity

3.1 Assist EOF personnel in returning all equipment to proper storage locations.

3.1.1 Review all documentation maintained during the emergency.

a. Verify that logs, forms, and other documentation are complete.

b. Assist EOF personnel in returning all equipment to proper storage locations.

3.1.2 Log off PCs as necessary.

3.1.3 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.

SECURITY COORDINATOR

1.0 Initial Responsibility/Activity

1.1 Initial Orientation

1.1.1 Upon arrival at the EOF:

a. Card in the accountability readers (as required) and/or sign in on the Facility Sign-In/Accountability Form.

b. Obtain the "Security Coordinator" position binder and ID badge.

c. Review any documents used.

1.1.2 Assume the position of EOF Security Coordinator.

1.1.3 IF the EOF has NOT been declared operational, THEN:

a. Report readiness status to the EOF Manager when prepared to assume the Security Coordinator position.

1.1.4 IF relieving another Security Coordinator, THEN perform a formal turnover with the current Security Coordinator:

a. Obtain the Security Coordinator's position binder and ID Badge.

b. Review facility log.

c. Obtain a briefing from the acting Security Coordinator on the emergency, plant conditions and any actions that have been completed or are in progress.

d. Relieve the current Security Coordinator.

1.1.5 Inform the EOF Manager that you are now filling the duties of the Security Coordinator.

1.1.6 Perform a communication check with the CAS and SAS and inform them that you are the Security Coordinator and how you can be contacted.

1.1.7 Perform a communications check with onsite security personnel (as necessary) and EOF Security posts (as necessary).

SECURITY COORDINATOR

2.0 Continuous Responsibility/Activity

2.1 Maintain personnel accountability in the EOF.

2.1.1 IF you leave the area, THEN:

a. Inform the EOF Manager of destination and expected return.

b. Inform the EOF Manager of return.

c. Upon return, obtain a briefing on any events that have occurred while away.

2.1.2 Maintain a log.

2.1.3 Use WebEOC or if unavailable, a Log Sheet Form to maintain a log of significant items pertaining to the Security Coordinator position.

2.1.4 Log when Security Coordinator duties were assumed.

2.1.5 Record Security Team activities undertaken. (Sensitive or Safeguards Information from team briefing forms need not be repeated).

2.1.6 Record all communications outside the Protected Area Fence.

2.1.7 Record Accountability Team activities undertaken and completed.

2.1.8 Review the following items as necessary.

a. Radiological conditions and any protective actions for Security Force movements.

b. Dosimetry requirements for Security Force.

c. As directed by ED issue Potassium Iodide (KI) to Security Force.

2.1.9 Establish and maintain communications with the Security Force. Keep them updated on the following items.

a. Plant conditions and actions being taken to end emergency.

b. Radiological conditions, other hazards and any restrictions of movement.

c. Implementation and status of site specific Security response procedures.

SECURITY COORDINATOR

2.1.10 Coordinate the Security response to any emergency conditions with other emergency response organizations (TSC/OSC/EOF/ICP) and act as designated National Incident Management System (NIMS) Liaison between the ICP and site organization. Use guidance provided in:

a. Site specific procedures for response to Site Access Threat.

b. Site specific procedures for assembly, accountability and relocation of personnel offsite.

c. Site specific procedures for responding to fire or medical emergencies.

2.1.11 Keep the ED/EPM informed of any security contingency event that may be occurring and response in progress.

2.1.12 Provide overall coordination of offsite assistance for the security-related response. Interface with Offsite Law Enforcement Agencies as necessary.

2.1.13 Maintain Access Control to the EOF/JIC.

2.1.14 Individuals will be granted access who:

a. Possess proper identification,

b. Are personally recognized by EOF personnel,

c. Are cleared by the EOF Manager or Joint Information Center (JIC) Company Spokesperson.

d. Photo identification should be worn conspicuously at all times when in the EOF.

2.1.15 Non-Company Employees:

a. Must be cleared by the EOF Manager, JIC Company Spokesperson, or designate.

b. Must present photo identification.

c. Should wear photo identification conspicuously at all times when in the EOF.

SECURITY COORDINATOR

2.1.16 NRC Personnel

a. Should present their NRC Identification.

b. Are not subject to our Fitness for Duty requirements.

c. Should wear photo identification conspicuously at all times when in the EOF.

2.1.17 Any additions or modifications to instructions will come from the EOF Manager.

2.1.18 Security Staffing. The following Security officer assignments may be established based on the nature of the emergency or emergency drill.

2.1.19 EOF Drive Entrance Officer - To be located at the drive entrance.

a. The officer will allow access to Plant employees.

b. Non-Plant employees will be cleared to enter by contacting EOF Security Coordinator.

2.1.20 Access Control Officer - To be located at the entrance to the secure EOF/JIC area.

2.1.21 Establish and maintain continuous accountability in the EOF.

3.0 **Closeout Activity**

3.1 Assist EOF personnel in returning all equipment to proper storage locations.

3.1.1 Review all documentation maintained during the emergency.

3.1.2 Verify that logs, forms, and other documentation are complete.

3.1.3 Provide all logs and records to the EOF Manager upon termination of the emergency and entry into the Recovery Phase.

EMERGENCY NOTIFICATIONS AND NON-COMPANY SUPPORT

ADDITIONAL NOTIFICATIONS: Organizations to be notified and updated as conditions warrant. (See the Emergency Contact Telephone Book for telephone numbers.)

(1) Entergy Legal Department

(2) Entergy Insurance Department

(3) Institute for Nuclear Power Operations

NON-COMPANY SUPPORT

(1) Department of Energy, Radiological Assistance Team

(2) Electric Power Research Institute

(3) AREVA
Regional Manager

Fuel Project Manager

VP Outage Services

(4) Siemens
Regional Manager
Turbine Generator

Key Account Manager

(5) Westinghouse Electric (Palisades Office)
Resident Site Manager

Customer Projects Manager

(6) Other Reference: INPO Emergency Resources Manual

ADDITIONAL EMERGENCY SUPPORT REQUEST

1. Date _____ Time _____
2. Name and title of person making request _____
3. Nature of emergency _____
4. Plant _____ Location _____
5. When the help is needed _____
6. Where the help is wanted _____
7. Work to be done _____
8. Where the help should report _____
9. The name and title of person to report to _____
10. Number of personnel requested _____
11. Classification of personnel _____
12. Estimated time duration for additional support _____
13. Equipment needed: _____

_____

_____

14. Material needed: _____

_____

_____

15. Services needed: _____

_____

_____

16. Other information: _____

_____

_____

_____

_____

OFFSITE FACILITY LOCATIONS

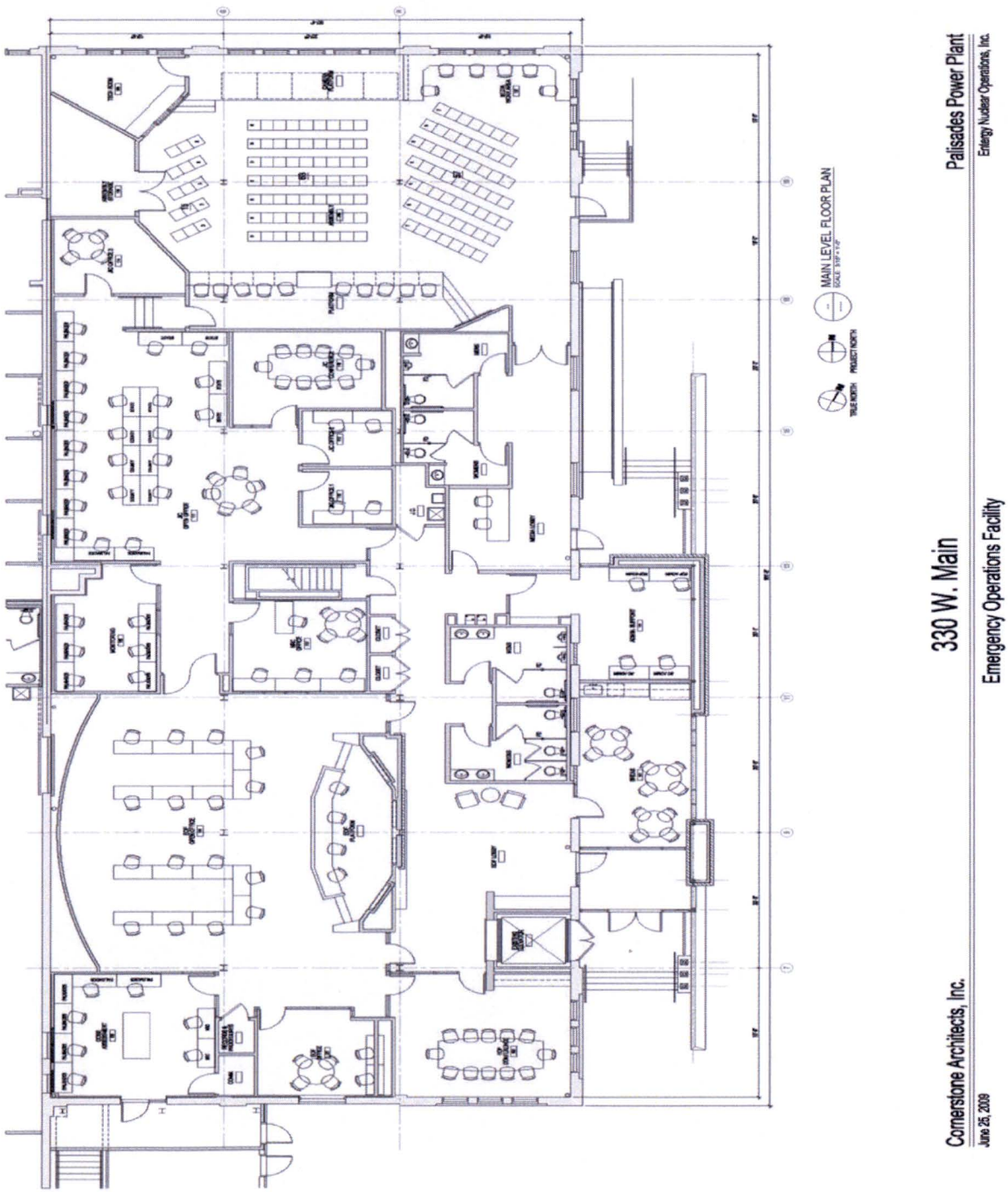
OFFSITE EMERGENCY OPERATIONS CENTER (EOC) LOCATIONS

State EOC:	7150 Harris Drive Dimondale, MI 48821
Van Buren County:	Lower Level of Sheriff Department 205 S Kalamazoo Street Paw Paw, Michigan
Berrien County:	2100 E Empire Avenue Benton Harbor, Michigan
Allegan County:	3271 122nd Avenue Allegan Co Services - Dumont Complex Allegan, Michigan

Notify the Lead Offsite Liaison of your arrival.

EMERGENCY OPERATIONS FACILITY FLOOR PLAN

NOTE:	Changes to the layout of the room may be made to facilitate technical improvements or Administrative improvements.



INCIDENT COMMAND POST (ICP)

NOTE:	The ICP Operations Liaison and the ICP Radiation Protection Liaison provide technical support to the Security ICP Liaison and the ICP in general as events dictate.

RESPONSIBILITIES

This position is established in the event an Incident Command Post is established to support offsite responders.

1. Support Incident Command (Unified Command Member) Personnel in understanding the scope of the event and hazards offsite personnel may encounter.

2. Assist offsite personnel in understanding Plant support requests and prioritizing Plant support activities.

3. Relate offsite responder capability and activities to CR, TSC, and/or EOF Leadership, as appropriate.

ACTIVATION

The Emergency Director will assign an individual (preferably a Senior Member of Security Management) to be the Security ICP Liaison. The EOF Director will also assign a Radiation Protection ICP Liaison and an Operations ICP Liaison on an as needed basis.

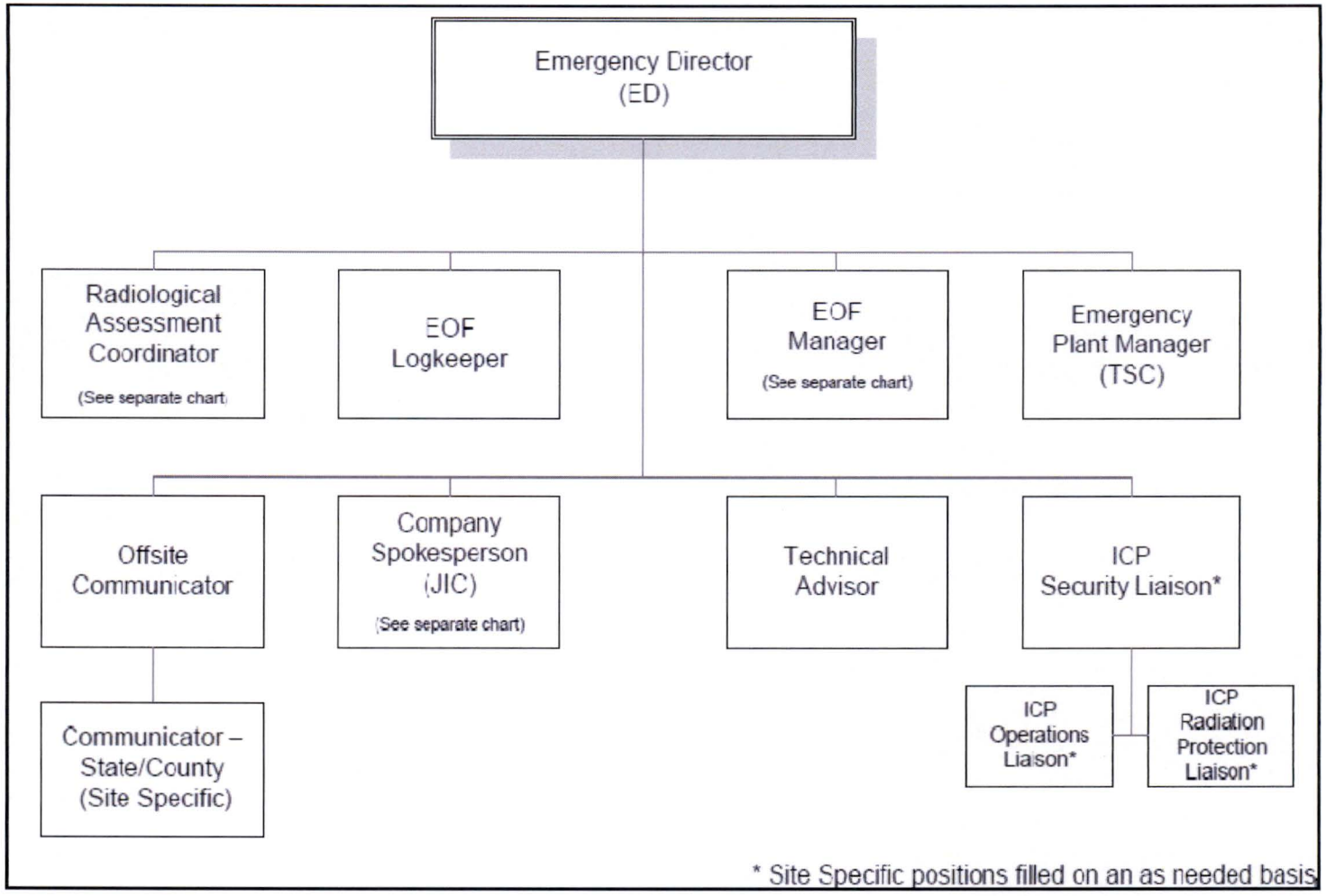
1. _____ Determine the location of the ICP, obtain the ICP Liaison cell phone and the Emergency Director's Bridge line phone number.

2. _____ Go to the ICP and check in with the Incident Commander.

3. _____ Establish Communications with the CR, TSC, and/or EOF, as appropriate.

4. _____ Coordinate the support efforts of the ICP Operations Liaison and the ICP Radiation Protection Liaison.

EMERGENCY OPERATIONS FACILITY ORGANIZATION



MUTUAL ASSISTANCE AGREEMENT BETWEEN ENTERGY NUCLEAR OPERATIONS, INC, DETROIT EDISON, AND AMERICAN ELECTRIC POWER

Mutual Assistance Agreements exist between Palisades, DC Cook, and Fermi.

These agreements (verified annually) are available in Document Control (DCC)

ALTERNATIVE EOF

In the event that the EOF is unavailable during an emergency, the affected ERO personnel will be directed to report to their alternative EOF. The alternative EOF is located at the South Haven Area Emergency Services (SHAES) Station 1, also known as Casco Township Fire Hall. The address is:

864 66th Street
South Haven
Michigan, 49090

Resources at the Alternative EOF

The Alternative EOF is equipped with

- Two satellite phones (with 2 additional batteries)
- Back-up generator (can power the entire building)
- Phone/contact lists
- Procedures and references including
    - Emergency Implementing (EI) Procedures
    - FLEX guidelines
    - Palisades SAFER Plan
    - State of Michigan BDBEE Response Plan

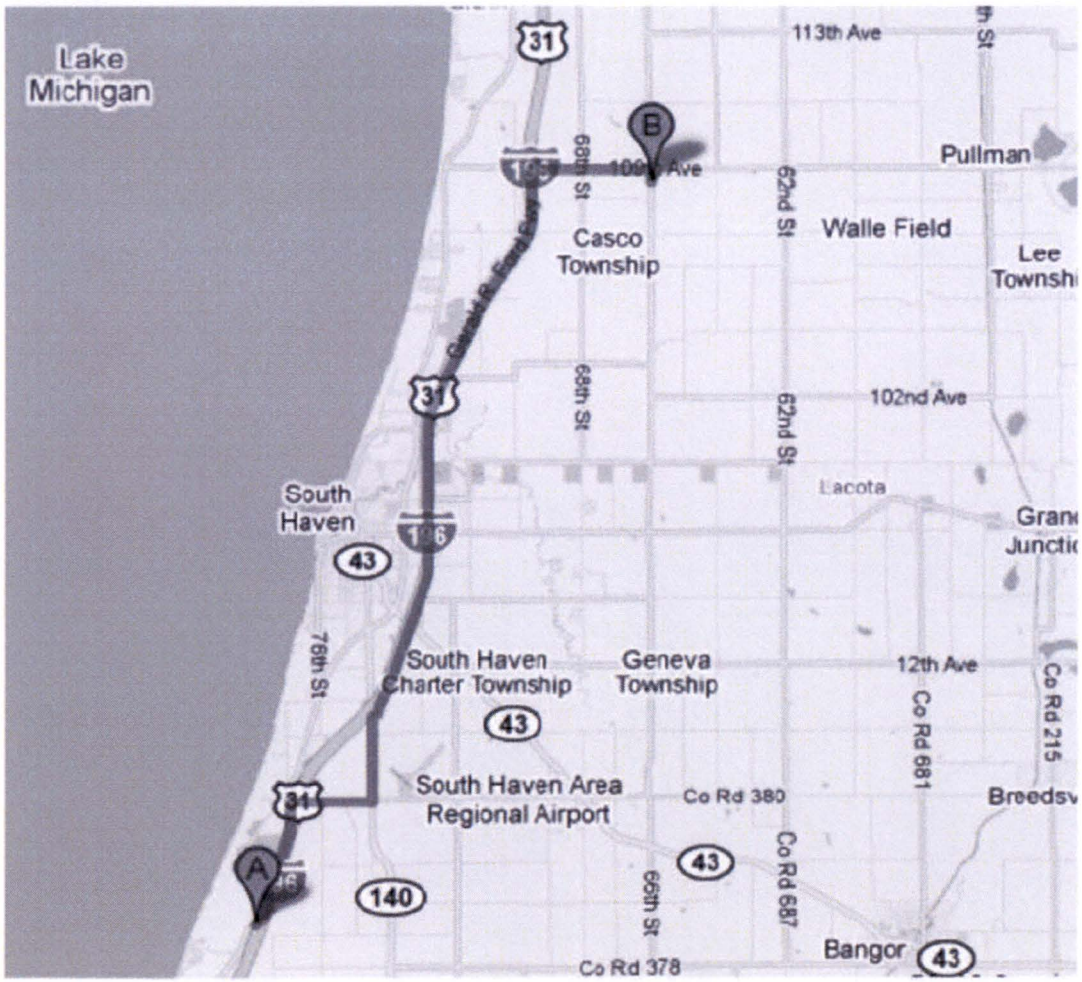
ALTERNATIVE EOF

DIRECTIONS TO THE ALTERNATIVE EOF

A 27780 Blue Star Hwy, Covert, MI 49043

1.	Head **northeast** on **Blue Star Hwy** About 4 mins	go 2.0 mi total 2.0 mi
2.	Turn **right** at **20th Ave** About 3 mins	go 1.2 mi total 3.3 mi
3.	Turn **left** at **MI-140 N** About 3 mins	go 1.3 mi total 4.6 mi
4.	Turn **right** to merge onto **I-196 N/US-31 N** toward **Holland** About 9 mins	go 8.9 mi total 13.5 mi
5.	Take exit **26** for **109th Ave** toward **Pullman**	go 0.2 mi total 13.6 mi
6.	Turn **left** at **109th Ave** About 4 mins	go 1.7 mi total 15.3 mi
7.	Turn **right** at **66th St** Destination will be on the right	go 0.2 mi total 15.5 mi

B 864 66th St, South Haven, MI 49090



Procedure No EI-8
Revision 18
Effective Date 03/15/16

PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: ONSITE RADIOLOGICAL MONITORING

Approved: TPHoran / 03/11/16
Procedure Sponsor **Date**

Process Applicability Exclusion ☒

New Procedure/Revision Summary

Revision 18, Imminent

Specific Changes:

(DRN-16-00204)
Removed Onsite Monitoring Team Log and KI Issue Record attachments.
Reworded purpose statement to reference changes that will align with the new standardized fleet procedure. (EN-EP-611, "Operations Support Center (OSC) Operations.)
Deleted 2.1 and 2.2., in lieu of the reworded purpose statement for the revised procedure.
Deleted the following references that are no longer applicable to the procedure:

3.2.3 EI-2.1, "Emergency Plant Manager"
3.2.7 EN-OM-119, "On-site Safety Review Committee"
3.2.9 EN-FAP-EP-009, "Use of KI for the Emergency Response Organization"

4.2 Removed reference guidance for EI-2.1
4.3 Deleted reference guidance for EI-2.1
5.2.3 Deleted heading and guidance for Onsite Monitoring Team Log – renumbered subsequent procedure Sections 5.3.4 through 5.3.9.
Deleted ALL of Section 5.3.
Deleted "Onsite Monitoring Team Log" and "KI Issue Record" attachments.
Deleted items a. and c. in Section1: Deployment
Deleted reference to "Onsite Monitoring Team Log" attachment in item e., Section 2.
Deleted reference to "Onsite Monitoring Team Log" attachment in item f., Section 3.
Deleted reference to "Onsite Monitoring Team Log" attachment in item f., Section 5.
Added "Count Rate Meter" to title on Attachment 5.

TITLE: ONSITE RADIOLOGICAL MONITORING

Table of Contents

TITLE: ONSITE RADIOLOGICAL MONITORING

Table of Contents

ATTACHMENTS

TITLE: ONSITE RADIOLOGICAL MONITORING

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

1.0 PERSONNEL RESPONSIBILITY

1.1 TECHNICAL SUPPORT CENTER (TSC) RADIOLOGICAL COORDINATOR

The TSC Radiological Coordinator or designate is responsible for ensuring that onsite radiation monitoring is performed.

1.2 OPERATIONS SUPPORT CENTER (OSC) RAD/CHEM COORDINATOR

The OSC Rad/Chem Coordinator or designate is responsible for tracking, organizing, briefing, and directing the Onsite Monitoring Teams at the request for onsite monitoring by the TSC.

1.3 EMERGENCY PLANT MANAGER / EMERGENCY DIRECTOR

The Emergency Plant Manager (EPM) or Emergency Director (ED) has the responsibility to authorize the use of Potassium Iodide (KI) as a thyroid blocking agent.

1.4 ONSITE MONITORING TEAMS

The Onsite Monitoring Team technicians are responsible for performing surveys, monitoring personnel and equipment, analyzing air samples, and reporting results to the OSC.

TITLE: ONSITE RADIOLOGICAL MONITORING

2.0 PURPOSE

This procedure supplements EN-EP-611, "Operations Support Center (OSC) Operations," and EI-4.2, "Operations Support Center Activation." Additional guidance is provided concerning the actions taken to monitor the radiological conditions within the protected area and to provide RP Support to Maintenance and Repair Teams.

3.0 REFERENCES

3.1 SOURCE DOCUMENTS

3.1.1 Site Emergency Plan Section 7, "Emergency Facilities and Equipment"

3.1.2 EPA-400 Manual, "Protective Action Guidelines and Protective Actions for Nuclear Incidents 1990"

3.1.3 EA-JLF-93-01

3.1.4 EA-JLF-94-02

3.1.5 EA-JLF-97-004

3.1.6 10CFR20 Subpart C

3.2 REFERENCE DOCUMENTS

3.2.1 Emergency Implementing Procedure EI-4.2, "Operations Support Center Activation"

3.2.2 Emergency Implementing Procedure EI-13, "Evacuation/Reassembly"

3.2.3 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"

3.2.4 Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program"

3.2.5 Site Emergency Plan Section 6, "Emergency Measures"

3.2.6 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

3.2.7 Entergy Procedure EN-EP-611, "Operations Support Center (OSC) Operations"

TITLE: ONSITE RADIOLOGICAL MONITORING

3.3 COMMITMENTS

3.3.1 [CMT012010972], "Technical Specification change request regarding elimination of post-accident sampling system requirements"

3.3.2 [CMT912000897], "Unreviewed safety question – Potential for leakage of Containment Sump water to the SIRW Tank during a Maximum Hypothetical Accident (MHA)"

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

4.1 Onsite monitoring shall be promptly initiated per Site Emergency Plan Section 6, "Emergency Measures," upon completion of OSC activation and accountability or upon request by the TSC.

4.2 All members of the Onsite Monitoring Teams shall perform their actions in such a manner that they keep their exposure As Low As Reasonably Achievable (ALARA).

TITLE: ONSITE RADIOLOGICAL MONITORING

5.0 PROCEDURE

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

5.1 OSC RAD/CHEM COORDINATOR

5.1.1 Equipment

Ensure each Onsite Monitoring Team is equipped with instrumentation and personal protective equipment (PPE) needed for potential and actual radiological hazards encountered in the field. Guidelines for when to use PPE should be understood.

5.1.2 Briefing

Designate and brief the Onsite Monitoring Teams prior to dispatch as outlined in Attachment 1, Section 1 of this procedure.

5.2 ONSITE MONITORING TEAMS

5.2.1 Deployment Preparation

Refer to the list on Attachment 1, Section 1 to ensure all necessary equipment is available. Obtain a briefing from an OSC Rad/Chem Coordinator or designate prior to dispatch.

5.2.2 Meteorological Data

When performing surveys outside, verify given meteorological data by observation of the flag, cooling tower plume, movement of trees, or other suitable means. If the observations conflict with the given data, contact the OSC to verify meteorological data and, if needed, re-determine affected areas to be monitored.

5.2.3 OSC Activation

Establish a Radiologically Controlled Area for sample analysis, using lead shielding, if necessary, to obtain a ≤ 200 cpm background for analysis, and for storage of "hot" samples. Maintain a log for air samples using Attachment 6 of this procedure. Refer to Emergency Implementing Procedure EI-4.2, "Operations Support Center Activation."

5.2.4 Assembly Area Monitoring

Refer to the list on Attachment 1, Section 2, of this procedure for Assembly Area Monitoring.

5.2.5 Plume Tracking - Outside - Onsite

Refer to Attachment 1, Section 3, of this procedure. Record data on Attachments 2 and 5 of this procedure.

5.2.6 Evacuation of Nonessential Personnel

Refer to Emergency Implementing Procedure EI-13, "Evacuation/Reassembly," for evacuation requirements.

5.2.7 Support to Other Teams

Refer to Attachment 1, Section 5, of this procedure. Onsite monitoring teams perform radiation monitoring, contamination control, and dose tracking in support of other teams.

5.2.8 Field Collection and Determination of Airborne Concentration/Contamination Surveys

Refer to Attachment 1, Section 6 of this procedure for Airborne Sampling and Contamination Surveys.

5.2.9 Reporting

a. Results of surveys and sample analysis shall be reported as soon as possible to the OSC. In the field, use a hand-held battery powered radio. If this means of communication is not available and/or functional, use the nearest telephone available.

b. Upon the team's return to the OSC, ensure that all applicable OSC Status Boards are updated.

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "Onsite Monitoring Team List"

6.1.2 Attachment 2, "Air Sample Analysis Sheet"

6.1.3 Attachment 3, "Dose Equivalent Iodine Conversion Factors"

6.1.4 Attachment 4, "Dead Time Correction Curve"

6.1.5 Attachment 5, "Air Sample Log"

6.1.6 Attachment 6, "Time to 5 REM CDE Verses I-131 Concentration"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Entergy Procedure EN-AD-103, "Document Control and Records Management Programs."

7.0 SPECIAL REVIEWS

The scope of this procedure does not include activities that require a 50.59 review. Therefore, changes to this procedure do not require a 50.59 review.

Revisions of this procedure require a 50.54(q) review per Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Program."

ONSITE MONITORING TEAM LIST

Date: _____ Technicians: _____ _____

SECTION 1: DEPLOYMENT

A. Determine and obtain necessary equipment in accordance with assignment and the following equipment list:

1. Radiation Detection Instrumentation. Perform/verify Operational Checks of instruments prior to leaving the OSC.
2. Primary and Secondary dosimetry.
3. Applicable protective clothing and respiratory equipment. (Lapel Air Sampler for individual breathing zone samples, if determined necessary.)
4. Radio communication equipment. Perform operability check of hand-held battery powered radio.
5. Radeco Air Sampler for large area grab samples.
6. Applicable survey maps, forms and Writing material.
7. Smears, smear pad and Ziploc bags for samples.
8. Any necessary keys (located in the RP Key Lockers or OSC Emergency Kit).
9. Phone numbers to call in the event radio communications fail.
10. Bag(s) to contain atmosphere-vented ion chamber(s) to prevent and/or limit the possibility of radioactive gases interfering with measurements.

NOTE:	Dispatched Teams shall contact the OSC at least every 30 minutes for updates.

ONSITE MONITORING TEAM LIST

SECTION 2: ASSEMBLY AREA MONITORING

A. Upon completion of OSC activation and accountability, habitability monitoring of occupied Assembly Areas should commence. Other areas such as the stairwell from the OSC to the North Door of the TSC, Security Central Alarm Station (CAS) and Secondary Alarm Station (SAS) should also commence.

B. Monitoring may include surveys for radiation dose rates, airborne activity (iodine and particulate), and loose surface contamination at the entrance(s) to the area(s). If the area airborne concentration exceeds 40 DACS, or area radiation levels exceed 100 mR/hr, immediately notify the OSC Manager.

C. Monitoring should be at frequent, regular intervals during escalating portions of the emergency, and less frequent as stabilization is achieved, or when the emergency classification is downgraded.

D. Habitability Survey Locations, If Occupied:

1. Assembly Area I - Control Room
2. Assembly Area II - Technical Support Center
3. Assembly Area III - Training Building (Classroom H)
4. Assembly Area V - Operations Support Center
5. Assembly Area VI - Men's Locker Room
6. Assembly Area VII - Support Building Lunchroom
7. Assembly Area VIII - Security Building (Admin Area)
8. CAS (Central Alarm Station)
9. SAS (Secondary Alarm Station)
10. Stairwell from the OSC to the North Door of the TSC.

E. Document Survey Data.

F. Data reported to OSC.

ONSITE MONITORING TEAM LIST

SECTION 3: PLUME TRACKING - OUTSIDE - ONSITE

NOTE:	The following guidance is an aid only in initially locating and following the plume.

A. Using given meteorological data and the site map, a fair idea can be obtained of the possible location of the plume.

NOTE:	Plume location and dose rate information shall be reported as soon as possible. This information is vital for Dose Assessment and Protective Action Recommendations.

B. Traverse the suspected area to determine the existence, outer boundaries, centerline, and respective dose rates of a release.

1. Using a high range ion chamber, traverse the suspected area, monitoring the meter continuously.

2. When an increase in dose rate is noted, record time, dose rate, and relative site location.

3. Continue monitoring dose rate increases to the centerline, where the dose rate will be at a maximum. Periodically check open vs closed beta window dose rates for the presence of the plume at ground level.

NOTE:	An Emergency Van with an Inverter, or some other power source is needed to power the Air Sampler. If power is unavailable, the air sample is not required.

4. At the centerline, unless high dose rates prohibit, obtain an air sample (iodine and particulate) and survey for dose rates at three inches and three feet from the ground. Check open and closed beta window dose rates, and take smear(s) for loose surface contamination. If centerline open/closed window readings indicates there is no ground level plume present, the air sample and surface contamination surveys may be omitted with EOF Dose Assessment concurrence.

5. Continue monitoring dose rates to the opposite plume boundary, and record the relative site location of the outer boundary.

C. Check self-reading and electronic dosimeters frequently (ie, entry into plume, exit from plume) and record times and dose received. Dose received per plume entry, in addition to previous dose received in the current year, should be closely tracked to ensure authorized dose control levels are not exceeded.

D. When traversing or sampling in a ground level plume, and/or projected or known airborne activity indicates caution, evaluate necessary protective clothing.

ONSITE MONITORING TEAM LIST

SECTION 4: EVACUATION OF NONESSENTIAL PERSONNEL

A. Refer to Emergency Implementing Procedure EI-13, "Evacuation/Reassembly for evacuation requirements.

SECTION 5: SUPPORT TO OTHER TEAMS

A. Support for Chemistry, Maintenance, Operations, Fire Brigade, or Search and Rescue.

B. Team members appropriately outfitted (ie, dosimetry, protective clothing, respiratory equipment).

C. Perform dose rate surveys (ie, enroute, general area, work area, contact, open / closed beta window) three inches and three feet from ground.

D. Perform airborne activity and loose contamination surveys.

E. Dosimetry monitored, stay times calculated.

F. Data logged

G. Data reported to OSC.

SECTION 6: AIRBORNE SAMPLING AND CONTAMINATION SURVEYS

A. Field collection under emergency conditions should be a 5 ft^3 sample, normally obtained by taking a 2 cfm sample for 2.5 minutes. A shorter sample would be appropriate in the presence of high dose rates.

B. Complete Sections 1 and 2 of Attachment 2 to document dose rates, contamination levels, and air sample data to determine corrected volume. Section 1 is to be completed for every air sample taken.

C. Carefully remove filter and cartridge. Mark the direction of air flow on the silver zeolite cartridge with an arrow. Handle filters with care to prevent cross contamination or loss of collected material, using tweezers when possible.

NOTE:	IF observed count rates with the count rate meter are greater than 120,000 cpm, THEN use the dead time correction curve. See Attachment 4, to determine the corrected count rate.

D. Perform initial gross analysis using a count rate meter with an HP-210 probe or equivalent.

ONSITE MONITORING TEAM LIST

E. Field determination of gross iodine activity. [CMT012010972]

1. Determine the background count rate with the HP-210 probe or equivalent in the counting area.

NOTE:	Backside readings at 1/2" are preferred, but if count rate is negligible use the front side at 1/2".

2. Determine the gross iodine count rate by placing the HP-210 probe or equivalent 1/2" from the backside of cartridge.

3. Complete Section 3 of Attachment 2.

4. Place the sample in a bag, label with date, time sample started and ended, average flow rate, location sample was taken, and initials.

F. Field determination of particulate Airborne Activity:

1. Determine the background count rate with the HP-210 probe or equivalent in place on the sample holder.

2. Place the particulate filter in the sample holder, upstream side up. With the HP-210 probe or equivalent in place on the holder, the filter should be approximately ½ inch from the detector.

3. Determine the gross particulate count rate.

4. Complete Section 4 of Attachment 2.

5. Place the sample in a bag or envelope, label with date, time sample started and ended, average flow rate, location sample was taken, and initials.

G. Save all samples for future analysis, storing high-level samples in a shielded area. If isotopic identification of air samples is desired, use the low-level counting room MCA in the Service Building, if available.

H. Reevaluate protective measures necessary (protective clothing, KI), based on determined airborne activity levels.

AIR SAMPLE ANALYSIS SHEET

1. **RADIOLOGICAL DATA (Taken at Each Air Sample Location)**

Date: _____ Time: _____

Location: _____

Instrument Model / Number: _____/_____ Cal Due: _____

Instrument Model / Number: _____/_____ Cal Due:_____

a. 3 foot: (_____mR/hr(OW) - _____mR/hr(CW)) X _____ *BCF = _____mrad/hr

b. 3 inch: (_____mR/hr(OW) - _____mR/hr(CW)) X _____ *BCF = _____mrad/hr

c. Ground Smear: _____cpm/100cm^2 (Gross) - _____cpm (BKG) = _____cpm (Net)*BCF = Beta Correction Factor

2. **AIR SAMPLE DATA**

Air Sampler Number: _____ Cal Due:_____

Date: _____ Start Time: _____ Stop Time: _____

Sample Duration _____ (min) X Flowrate _____ (cfm) = Total Volume _____ (ft^3)

Corrected Volume (Particulate and Iodine):

(Total Volume ft^3 _____) (0.95) (2.83E4 cc/ft^3) = _____ cc

AIR SAMPLE ANALYSIS SHEET

3. **IODINE SAMPLE ANALYSIS**

Backside (Preferred) _____ Frontside _____ (Check One)

Instrument Model / Number: _____/_____ Cal Due:_____

Gross Counts† (Dead-Time Corrected) _____cpm - Background _____cpm = _____ccpm

Calculation:

$$\frac{\text{(ccpm \_\_\_\_\_)}}{\text{(Corrected Vol \_\_\_\_\_cc) (‡CF \_\_\_\_\_ccpm/µCi)}} = \text{\_\_\_\_\_µCi/cc}$$

4. **PARTICULATE SAMPLE ANALYSIS**

Instrument Model / Number: _____/_____ Cal Due:_____

Instrument Efficiency _____

Gross Counts† (Dead-Time Corrected) _____cpm - Background _____cpm = _____ccpm

Calculation:

$$\frac{\text{(ccpm \_\_\_\_\_)}}{\text{(Corrected Vol \_\_\_\_\_cc) (Eff\_\_\_\_\_) (2.22E6 dpm/µCi)}} = \text{\_\_\_\_\_µCi/cc}$$

Completed By: _____ Reviewed By: _____

† IF observed count rates with the count rate meter are greater than 120,000 cpm, THEN use the dead time correction curve (Attachment 4) to determine the corrected count rate.

‡ Conversion Factor (CF): IF ≤ 8 hours since Rx shutdown, THEN USE 1.48E5 ccpm/µCi for backside count rates OR 3.77E6 ccpm/µCi for frontside count rates. IF > 8 hr post reactor shutdown, THEN use Conversion Factors in Attachment 3, Table 1 or Table 2.

DOSE EQUIVALENT IODINE CONVERSION FACTORS

TABLE 1
BACKSIDE (PREFERRED METHOD)

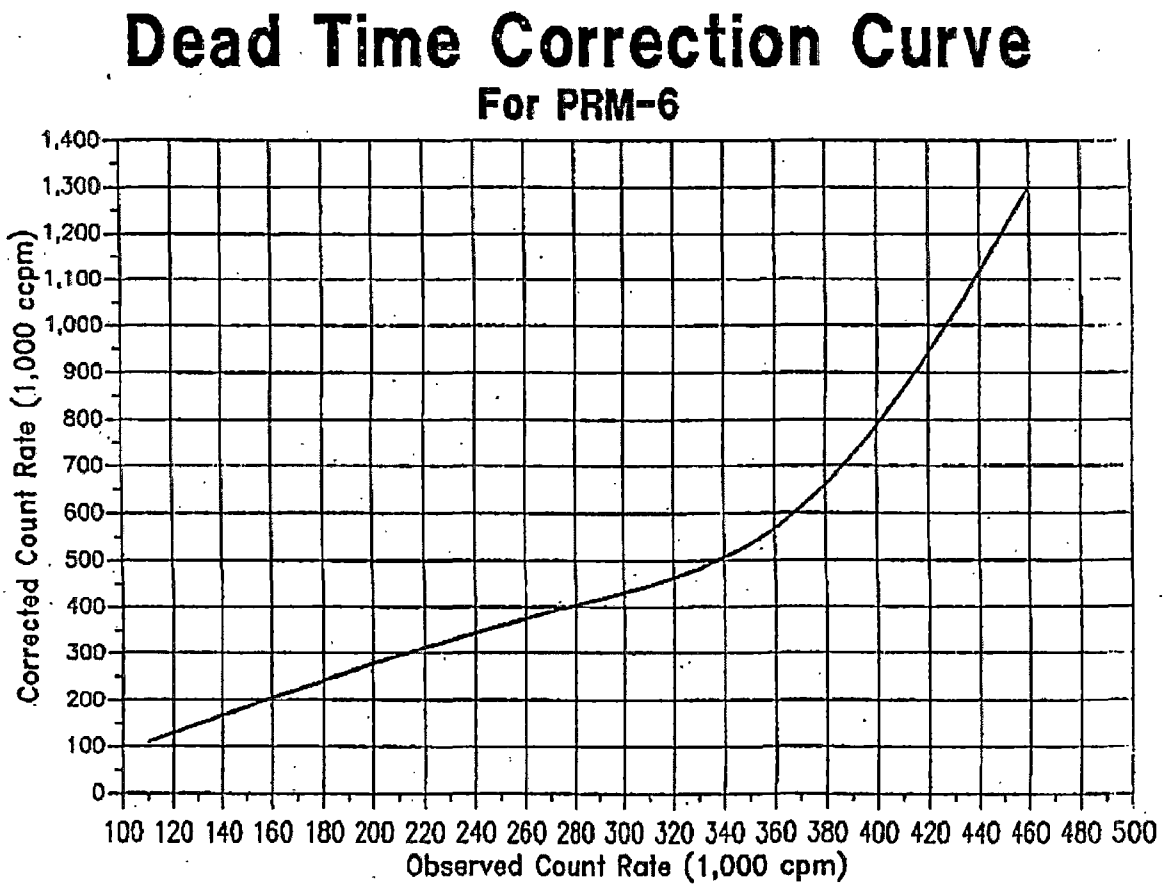
TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi
0.25	2.73E + 5	7.00	1.23E + 5	28.00	5.98E + 4
0.50	2.40E + 5	8.00	1.17E + 5	30.00	5.63E + 4
0.75	2.23E + 5	9.00	1.12E + 5	32.00	5.30E + 4
1.00	2.10E + 5	10.00	1.07E + 5	34.00	4.99E + 4
1.25	2.00E + 5	12.00	9.93E + 4	36.00	4.65E + 4
1.50	1.92E + 5	14.00	9.26E + 4	38.00	4.36E + 4
1.75	1.85E + 5	16.00	8.69E + 4	40.00	4.06E + 4
2.00	1.80E + 5	18.00	8.11E + 4	42.00	3.80E + 4
3.00	1.61E + 5	20.00	7.66E + 4	44.00	3.52E + 4
4.00	1.48E + 5	22.00	7.19E + 4	46.00	3.28E + 4
5.00	1.38E + 5	24.00	6.75E + 4	48.00	3.02E + 4
6.00	1.30E + 5	26.00	6.35E + 4	50.00	2.79E + 4

DOSE EQUIVALENT IODINE CONVERSION FACTORS

TABLE 2
FRONTSIDE (ALTERNATE METHOD)

TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi
0.25	4.58E + 6	7.00	3.18E + 6	28.00	1.20E + 6
0.50	4.51E + 6	8.00	3.01E + 6	30.00	1.16E + 6
0.75	4.47E + 6	9.00	2.84E + 6	32.00	1.13E + 6
1.00	4.43E + 6	10.00	2.69E + 6	34.00	1.09E + 6
1.25	4.36E + 6	12.00	2.40E + 6	36.00	1.05E + 6
1.50	4.32E + 6	14.00	2.15E + 6	38.00	1.01E + 6
1.75	4.25E + 6	16.00	1.92E + 6	40.00	9.74E + 5
2.00	4.22E + 6	18.00	1.71E + 6	42.00	9.43E + 5
3.00	3.99E + 6	20.00	1.53E + 6	44.00	9.05E + 5
4.00	3.77E + 6	22.00	1.36E + 6	46.00	8.76E + 5
5.00	3.56E + 6	24.00	1.28E + 6	48.00	8.41E + 5
6.00	3.37E + 6	26.00	1.24E + 6	50.00	8.15E + 5

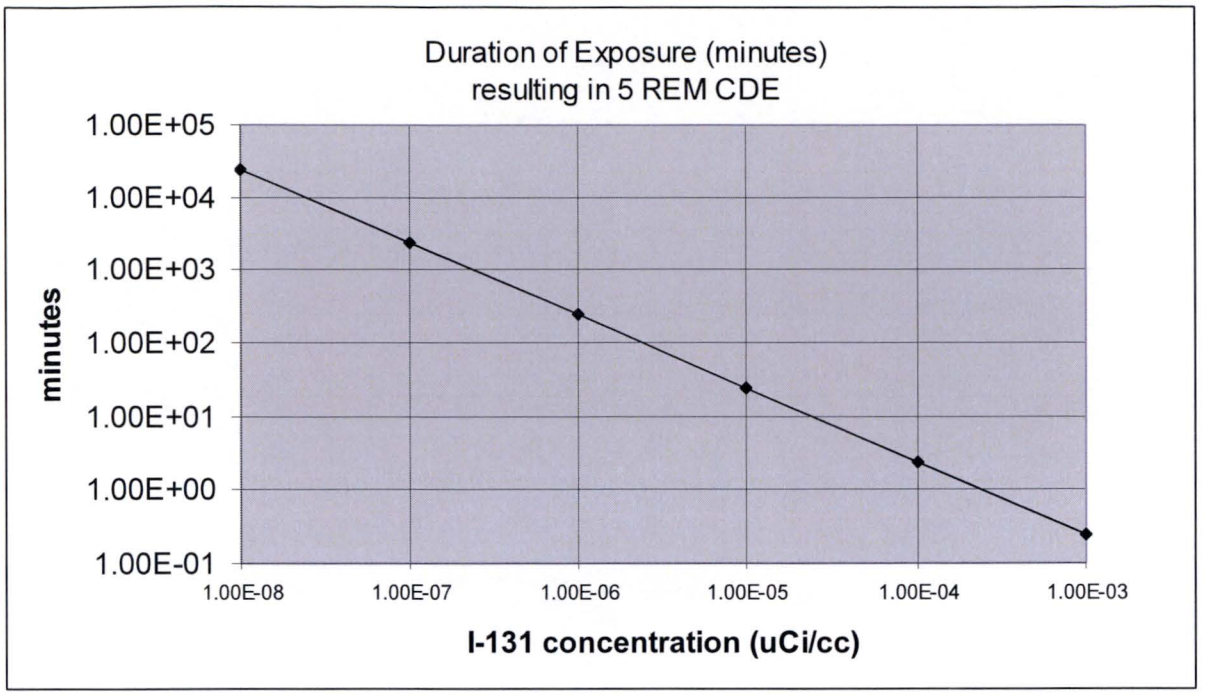
DEAD TIME CORRECTION CURVE FOR COUNT RATE METER



AIR SAMPLE LOG

Date/Time Sampled	Location	Sampled By Counted By	Unidentified Particulate Activity	Unidentified Iodine Activity	Identified Particulate Activity	Identified Iodine Activity

TIME TO 5 REM CDE VERSES I-131 CONCENTRATIONS



Instructions for Use:

1. Determine the estimated or actual I-131 airborne concentration in the area(s) of interest. Locate this number on the Horizontal Axis.
2. Locate the duration of exposure in minutes on the Vertical Axis. Find the point at which this value intersects with the number from step 1.
3. If this point of intersection is located to the left (below) the line, the thyroid CDE is less than 5 rem.
4. If this point of intersection is located to the right (above) the line, the thyroid CDE is greater than 5 rem.
5. If this point of intersection is located on the line, the thyroid CDE is 5 rem.

Procedure No EI-9
Revision 15
Effective Date 3/15/16

PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: OFFSITE RADIOLOGICAL MONITORING

Approved: **MEFields for TPHoran** / **3/10/16**
Procedure Sponsor **Date**

Process Applicability Exclusion ☒

New Procedure/Revision Summary:

Revision 15

Specific Changes

Revision 15:

DRN-16-00205
- Removed Onsite Monitoring Team Log and KI Issue Record attachments.
- Reworded purpose statement to reference changes that will align with the new standardized fleet procedures, EN-EP-609, "Emergency Operations Facility (EOF) Operations, and EN-EP-611, "Operations Support Center (OSC) Operations"

TITLE: OFFSITE RADIOLOGICAL MONITORING

Table of Contents

TITLE: OFFSITE RADIOLOGICAL MONITORING

Table of Contents

ATTACHMENTS

TITLE: OFFSITE RADIOLOGICAL MONITORING

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

1.0 PERSONNEL RESPONSIBILITY

1.1 EMERGENCY OPERATIONS FACILITY (EOF) RADIOLOGICAL ASSESSMENT COORDINATOR

The EOF Radiological Assessment Coordinator, or designate(s), is responsible for ensuring that offsite radiation monitoring is performed.

1.2 OPERATIONS SUPPORT CENTER (OSC) RAD/CHEM COORDINATOR

The OSC Rad/Chem Coordinator or designate is responsible for tracking, organizing, briefing, and directing the Offsite Monitoring Team(s) at the request for offsite monitoring by the EOF.

1.3 EMERGENCY OPERATIONS FACILITY (EOF) RADIOLOGICAL ASSESSMENT GROUP

When the EOF is activated, responsibility for tracking and direction of the Offsite Monitoring Team(s) is transferred to the EOF Radiological Assessment Group.

1.4 EMERGENCY PLANT MANAGER / EMERGENCY DIRECTOR

The Emergency Plant Manager (EPM) or Emergency Director (ED) has the responsibility to authorize the use of Potassium Iodide (KI) as a thyroid blocking agent.

1.5 OFFSITE MONITORING TEAM

The Offsite Monitoring Team Technicians are responsible for performing surveys, monitoring personnel and equipment, collecting environmental samples and TLDs, analyzing air samples, and reporting results to the OSC, or the EOF when activated.

2.0 PURPOSE

This procedure supplements Entergy Procedures EN-EP-609, "Emergency Operations Facility (EOF) Operations," EN-EP-611, "Operations Support Center (OSC) Operations," and Palisades Emergency Implementing Procedures EI-4.2, "Operations Support Center Activation," and EI-4.3, "Emergency Operations Facility Activation."

3.0 REFERENCES

3.1 SOURCE DOCUMENTS

3.1.1 Site Emergency Plan Section 7, "Emergency Facilities and Equipment"

3.1.2 EPA-400 Manual, "Protective Action Guidelines and Protective Actions for Nuclear Incidents 1990"

3.1.3 EA-JLF-93-01

3.1.4 EA-JLF-94-02

3.1.5 EA-JLF-97-004

3.1.6 10CFR20 Subpart C

3.1.7 Docket 50-255 - License DPR-20 Palisades Plant, Technical Specification Change Request Regarding Elimination of Post - Accident Sampling System Requirements

3.2 REFERENCE DOCUMENTS

3.2.1 Emergency Implementing Procedure EI-4.2, "Operations Support Center Activation"

3.2.2 Emergency Implementing Procedure EI-4.3, "Emergency Operations Facility Activation"

3.2.3 Emergency Implementing Procedure EI-13, "Evacuation/Reassembly"

3.2.4 Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment"

3.2.5 Entergy Procedure EN-AD-103, "Document Control and Records Management Programs"

3.2.6 Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Review Program"

3.2.7 Entergy Procedure EN-EP-609, "Emergency Operations Facility (EOF) Operations"

3.2.8 Entergy Procedure EN-EP-611, "Operations Support Center (OSC) Operations"

3.2.9 Entergy Procedure EN-HU-106, "Procedure and Work Instruction Use and Adherence"

3.2.10 Entergy Procedure EN-LI-100, "Process Applicability Determination"

3.3 COMMITMENTS

3.3.1 CMT012010972, "Technical Specification change request regarding elimination of post-accident sampling system requirements"

3.3.2 CMT912000897, "Unreviewed safety question – Potential for leakage of Containment Sump water to the SIRW Tank during a Maximum Hypothetical Accident (MHA)"

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

4.1 Offsite monitoring shall be initiated at a Site Area Emergency or above, or when the results of onsite monitoring verify that a release of radioactive material has occurred, area and/or process monitors indicate a release has occurred, conditions current and impending warrant monitoring, or upon request by the Emergency Plant Manager or EOF Radiological Assessment Group.

4.2 All members of the Offsite Monitoring Teams shall perform their actions in such a manner that they keep their exposure As Low As Reasonably Achievable (ALARA).

4.3 Turnover of the Offsite Monitoring Teams from the OSC to the EOF should be completed via radio. Telephone communications may be used if radio problems are encountered.

5.0 PROCEDURE

REFERENCE USE
• **Procedure and Procedure Precautions and Limitations are at the work location for reference.** • **Review and understand segments before performing any steps.** • **Signoff steps are completed, when included, before starting the next step.** • **Place keep in accordance with EN-HU-106, "Procedure and Work Instruction Use and Adherence."** • **Review the Procedure to verify segments have been completed.**

5.1 OSC RAD/CHEM COORDINATOR

5.1.1 Equipment

Ensure each Offsite Monitoring Team is equipped with instrumentation and Personal Protective Equipment (PPE) needed for potential and actual radiological hazards encountered in the field. Guidelines for when to use PPE should be understood.

5.1.2 Briefing

Designate and brief the Offsite Monitoring teams prior to dispatch as outlined in Attachment 1, Section 1 of this procedure.

5.2 OFFSITE MONITORING TEAMS

5.2.1 Deployment Preparation

Refer to Attachment 1, Section 1b of this procedure to ensure all necessary equipment is available. Obtain a briefing from the OSC Rad/Chem Coordinator or designate prior to dispatch.

5.2.2 Emergency Vehicle and Equipment

Perform emergency vehicle and emergency equipment checks as soon as possible upon dispatch, in an area of low background, in accordance with Attachment 1, Section 2, of this procedure.

5.2.3 Meteorological Data

Verify given meteorological data in the field by observation of the flag, cooling tower plume, movement of trees, or other suitable means. If the observations conflict with the given data, contact the OSC to verify meteorological data and, if needed, redetermine affected areas to be monitored.

5.2.4 Evacuation of Nonessential Personnel

Refer to Emergency Implementing Procedure EI-13, "Evacuation/Reassembly," for reassembly monitoring requirements.

5.2.5 Guidelines for Plume Tracking, Surveying, Sampling

Refer to Attachment 1, Sections 4 and 5 of this procedure. Record data on Attachments 2 and 5 of this procedure.

5.2.6 Field Collection and Determination of Airborne Concentration/Contamination Surveys

Refer to Attachment 1, Section 5 of this procedure for Airborne Sampling and Contamination Surveys.

5.2.7 Reporting

a. Report results of surveys and sample analysis as soon as possible to the OSC or EOF by mobile radio. IF radio communication is not available/functional, THEN use the emergency vehicle cell phone. IF the cell phone also fails, THEN use the nearest telephone available.

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "Offsite Monitoring Team List"

6.1.2 Attachment 2, "Air Sample Analysis Sheet"

6.1.3 Attachment 3, "Dose Equivalent Iodine Conversion Factors"

6.1.4 Attachment 4, "Dead Time Correction Curve"

6.1.5 Attachment 5, "Time to 5 REM CDE Versus I-131 Concentration"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Entergy Procedure EN-AD-103, "Document Control and Records Management Programs."

7.0 SPECIAL REVIEWS

7.1 The scope of this procedure does not include activities that require a 50.59 review. Therefore, changes to this procedure do not require a 50.59 review.

7.2 Revisions of this procedure require a 50.54(q) review per Entergy Procedure EN-EP-305, "Emergency Planning 10CFR50.54(q) Program."

7.3 The scope of this procedure does not include activities that require a Process Applicability Determination (PAD) review per Entergy Procedure EN-LI-100, "Process Applicability Determination." Therefore, changes to this procedure do not require a PAD review.

OFFSITE MONITORING TEAM LIST

SECTION 1: DEPLOYMENT

A. Determine and obtain necessary equipment in accordance with assignment and the following equipment list:

1. Primary and Secondary dosimetry.

2. Interim protective clothing and respiratory equipment, based on Plant conditions and job assignment in desired area(s).

3. Writing material.

4. Emergency vehicle keys.

5. Radiation detection instrumentation and air sampling equipment. Perform/verify Operational Checks of instruments prior to deployment.

6. Bag(s) to contain atmosphere-vented ion chamber(s) to prevent/limit the possibility of radioactive gases interfering with measurements.

7. Phone numbers to call in the event radio communications fail.

NOTE:	Dispatched Teams shall contact the OSC or EOF at least every 30 minutes for updates. Teams deployed from the EOF will contact the OSC Rad/Chem Coordinator by radio to obtain the initial briefing information.

SECTION 2: VEHICLE AND EQUIPMENT CHECKS

A. Start vehicle.

B. Establish radio contact with the OSC to indicate operability.

C. Perform vehicle checks (ie, fuel tank, lights, horn, wipers, seat belts).

D. Emergency Implementing Procedure EI-16.1, "Maintenance of Emergency Equipment," contains the inventory lists for the emergency vehicle kits. While a kit inventory is not necessary, this should be reviewed for knowledge of kit contents.

E. Perform operational check of the inverter.

F. Verify given met data by observation.

G. Data logged.

OFFSITE MONITORING TEAM LIST

SECTION 3: EVACUATION OF NONESSENTIAL PERSONNEL

A. Refer to Emergency Implementing Procedure EI-13, "Evacuation/Reassembly" for reassembly monitoring requirements.

SECTION 4: PLUME TRACKING

NOTE:	The following guidance is an aid only in initially locating and following the plume.

A. Using given meteorological data and the 10-mile Emergency Planning Zone (EPZ) map, a fair idea can be quickly obtained of the possible location of the plume. Using the wind speed and time from release data, the leading edge of the plume can be projected and followed.

NOTE:	Plume location and dose rate information shall be reported as soon as possible. This information is vital for Members of the Public Dose Assessment and Protective Action Recommendations.

B. Traverse the plume to determine outer boundaries, centerline, and respective dose rates.

1. The survey instrument should be held at an open window of the vehicle, the meter monitored continuously.

2. When an increase in dose rate is noted, record the odometer reading, relative map location, dose rate, and time. (When an air sample is taken, all data should be recorded on Attachment 2.)

3. Continuing slowly, record dose rate increases and odometer readings to the centerline of the plume, where the dose rate will be at a maximum, periodically checking open vs closed beta window dose rates for the presence of the plume at ground level.

4. At the centerline, unless high dose rates prohibit, obtain an air sample (iodine and particulate) and survey for dose rates at three inches and three feet from the ground. Check open and closed beta window dose rates, and take smear(s) for loose surface contamination. If centerline open/closed window readings indicate there is no ground level plume present, the air sample and surface contamination survey may be omitted with EOF Dose Assessment concurrence. Record all data on Attachment 2.

5. Continue to the opposite plume boundary, noting dose rates and odometer readings, and finally, the relative map location of the outer boundary.

OFFSITE MONITORING TEAM LIST

C. When traversing the plume, keep vehicle windows and vents closed, except for that necessary to take dose rate readings en route. Avoid dusty, gravel, or dirt roads when traversing the plume. Periodically perform personnel and vehicle interior surveys for contamination in a low background area. If minor contamination is found, decontaminate, if possible. Gross vehicle and personnel decontamination should not be attempted until the team is recalled. Report gross contamination results to the OSC or EOF for guidance and ultimate location for Vehicle and/or Personnel decontamination.

D. When traversing or sampling in a ground level plume, evaluate necessary protective clothing.

3 foot readings are used to determine plume location.
If 3 foot OW > 3 foot CW, then plume is ground level.
If 3 foot OW = 3 foot CW, then plume is overhead.
3 inch readings are used to determine ground deposition.
If 3 inch OW > 3 inch CW, then ground deposition has occurred.

E. Check self-reading or electronic dosimeters frequently (ie, entry into plume, exit from plume), record times and dose received, and report to the OSC or EOF. Dose received per plume entry in addition to previous dose received in the current year should be closely tracked to ensure authorized dose control levels are not exceeded.

SECTION 5: AIRBORNE SAMPLING AND CONTAMINATION SURVEYS

A. Field collection under emergency conditions should be a 5 ft^3 sample, normally obtained by taking a 2 cfm sample for 2.5 minutes. A shorter sample would be appropriate in the presence of high dose rates.

B. Complete Sections 1 and 2 of Attachment 2 to document dose rates, contamination levels and air sample data to determine corrected volume. Section 1 is to be completed for every air sample taken.

C. Carefully remove filter and cartridge. Mark the direction of air flow on the silver zeolite cartridge with an arrow. Handle filters with care to prevent cross contamination or loss of collected material, using tweezers when possible.

NOTE: If time constraints do not permit completion of calculations, transmit count rate data to the OSC or EOF by mobile radio. Also, IF observed counts with the count rate meter are greater than 120,000 cpm, THEN use the dead time correction curve (see Attachment 4) to determine the corrected count rate.

D. Perform initial gross analysis using a count rate meter with an HP-210 probe, or equivalent.

OFFSITE MONITORING TEAM LIST

E. Field determination of gross Iodine Activity. [CMT012010972]

1. Determine the background count rate with the HP-210 probe, or equivalent, in the counting area.

NOTE:	Backside readings at ½" are preferred, but if count rate is negligible use the frontside at ½".

2. Determine the gross iodine count rate by placing the HP-210 probe, or equivalent, ½" from the backside of cartridge.

3. Complete Section 3 of Attachment 2.

4. Place the cartridge in a bag, label with date, time sample started and ended, average flowrate, location sample was taken, and initials.

F. Field determination of particulate Airborne Activity:

1. Determine the background count rate with the HP-210 probe, or equivalent, in place on the sample holder.

2. Place the particulate filter in the sample holder, upstream side up. With the HP-210 probe, or equivalent, in place on the holder, the filter should be approximately ½ inch from the detector.

3. Determine the gross particulate count rate.

4. Complete Section 4 of Attachment 2.

5. Place the sample in a bag or envelope, label with date, time sample started and ended, average flowrate, location sample was taken, and initials.

G. Save all samples for further/future analysis, storing high level samples in a shielded area.

H. Reevaluate protective measures necessary (protective clothing, KI) based on determined airborne activity levels.

AIR SAMPLE ANALYSIS SHEET

1. RADIOLOGICAL DATA (Taken at Each Air Sample Location)

Date: _____ Time: _____

Location: _____

Distance from Plant in miles: _____

Instrument Model / Number: _____ / _____ Cal Due: _____

Instrument Model / Number: _____ / _____ Cal Due: _____

a. 3 foot: (_____ mR/hr(OW) - _____ mR/hr(CW)) X _____ *BCF = _____ mrad/hr

b. 3 inch: (_____ mR/hr(OW) - _____ mR/hr(CW)) X _____ *BCF = _____ mrad/hr

c. Ground Smear: _____ cpm/100cm^2 (Gross) - _____ cpm (BKG) = _____ cpm (Net)

*BCF = Beta Correction Factor

2. AIR SAMPLE DATA

Air Sampler Model / Number: _____ / _____ Cal Due: _____

Date: _____ Start Time: _____ Stop Time: _____

Sample Duration _____ (min) X Flowrate _____ (cfm) = Total Volume _____ (ft^3)

Corrected Volume (Particulate and Iodine):

(Total Volume ft^3 _____) (0.95) (2.83E4 cc/ft^3) = _____ cc

AIR SAMPLE ANALYSIS SHEET

3. IODINE SAMPLE ANALYSIS

Backside (Preferred) _____ Frontside _____ (Check One)

Instrument Model / Number: _____ / _____ Cal Due: _____

Gross Counts† (Dead-Time Corrected) _____cpm - Background _____cpm = _____ccpm

Calculation:

$$\frac{\text{(ccpm \_\_\_\_\_)}}{\text{(Corrected Vol \_\_\_\_\_cc) (‡ CF \_\_\_\_\_ccpm/µCi)}} = \text{\_\_\_\_\_µCi/cc}$$

4. PARTICULATE SAMPLE ANALYSIS

Instrument Model / Number: _____ / _____ Cal Due: _____

Instrument Efficiency _____

Gross Counts† (Dead-Time Corrected) _____cpm - Background _____cpm = _____ccpm

Calculation:

$$\frac{\text{(ccpm \_\_\_\_\_)}}{\text{(Corrected Vol \_\_\_\_\_cc) (Eff\_\_\_\_\_) (2.22E6 dpm/µCi)}} = \text{\_\_\_\_\_µCi/cc}$$

Completed By: _____ Reviewed By: _____

† IF observed count rates with the count rate meter are greater than 120,000 cpm, THEN **USE** the dead time correction curve (Attachment 4) to determine the corrected count rate.

‡ Conversion Factor (CF): IF less than or equal to 8 hours since Rx shutdown, THEN **USE** 1.48E5 ccpm/µCi for backside count rates OR 3.77E6 ccpm/µCi for frontside count rates. IF greater than 8 hr post reactor shutdown, THEN **USE** Conversion Factors in Attachment 3, Table 1 or Table 2.

DOSE EQUIVALENT IODINE CONVERSION FACTORS

TABLE 1
BACKSIDE (PREFERRED METHOD)

TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi
0.25	2.73E+5	7.00	1.23E+5	28.00	5.98E+4
0.50	2.40E+5	8.00	1.17E+5	30.00	5.63E+4
0.75	2.23E+5	9.00	1.12E+5	32.00	5.30E+4
1.00	2.10E+5	10.00	1.07E+5	34.00	4.99E+4
1.25	2.00E+5	12.00	9.93E+4	36.00	4.65E+4
1.50	1.92E+5	14.00	9.26E+4	38.00	4.36E+4
1.75	1.85E+5	16.00	8.69E+4	40.00	4.06E+4
2.00	1.80E+5	18.00	8.11E+4	42.00	3.80E+4
3.00	1.61E+5	20.00	7.66E+4	44.00	3.52E+4
4.00	1.48E+5	22.00	7.19E+4	46.00	3.28E+4
5.00	1.38E+5	24.00	6.75E+4	48.00	3.02E+4
6.00	1.30E+5	26.00	6.35E+4	50.00	2.79E+4

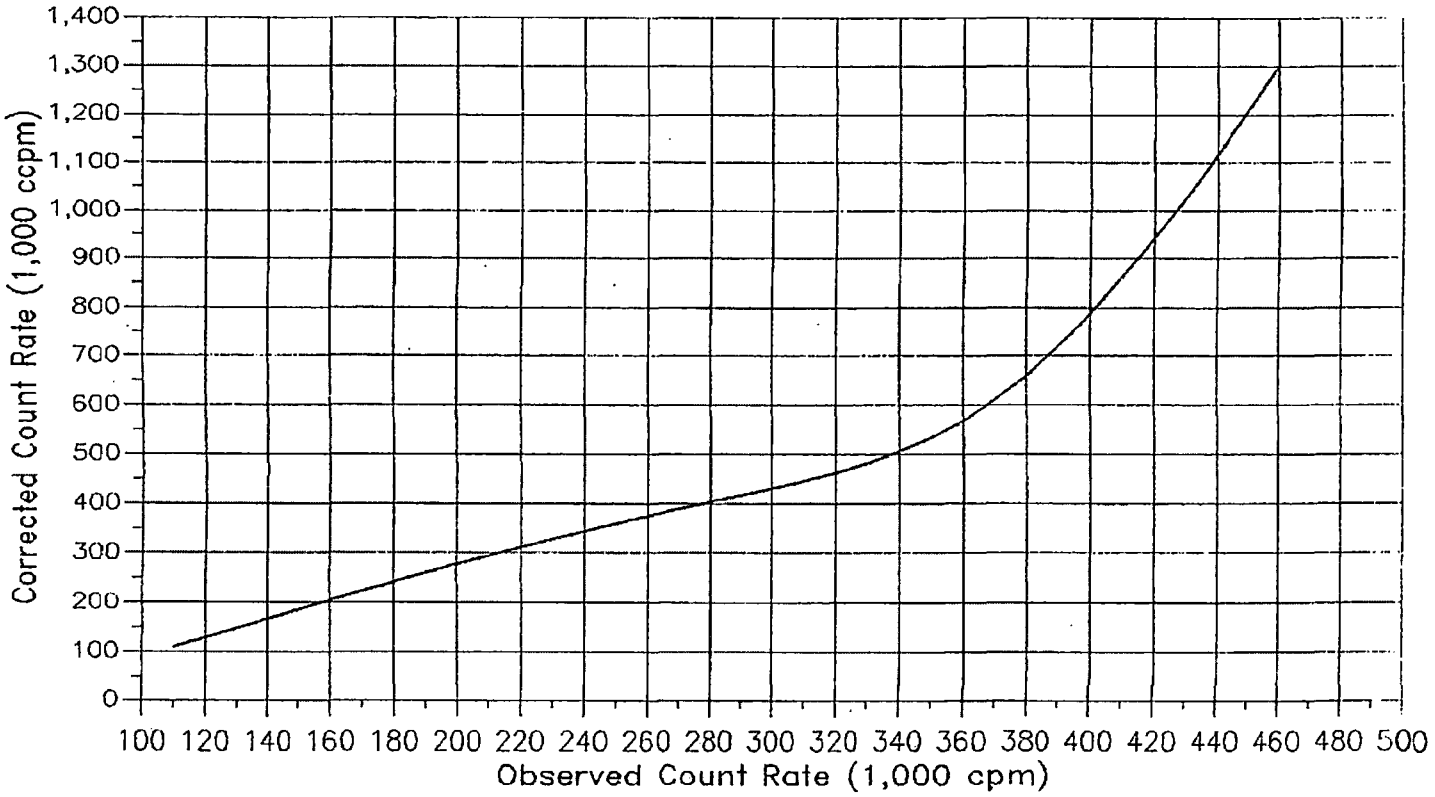
DOSE EQUIVALENT IODINE CONVERSION FACTORS

TABLE 2
FRONTSIDE (ALTERNATE METHOD)

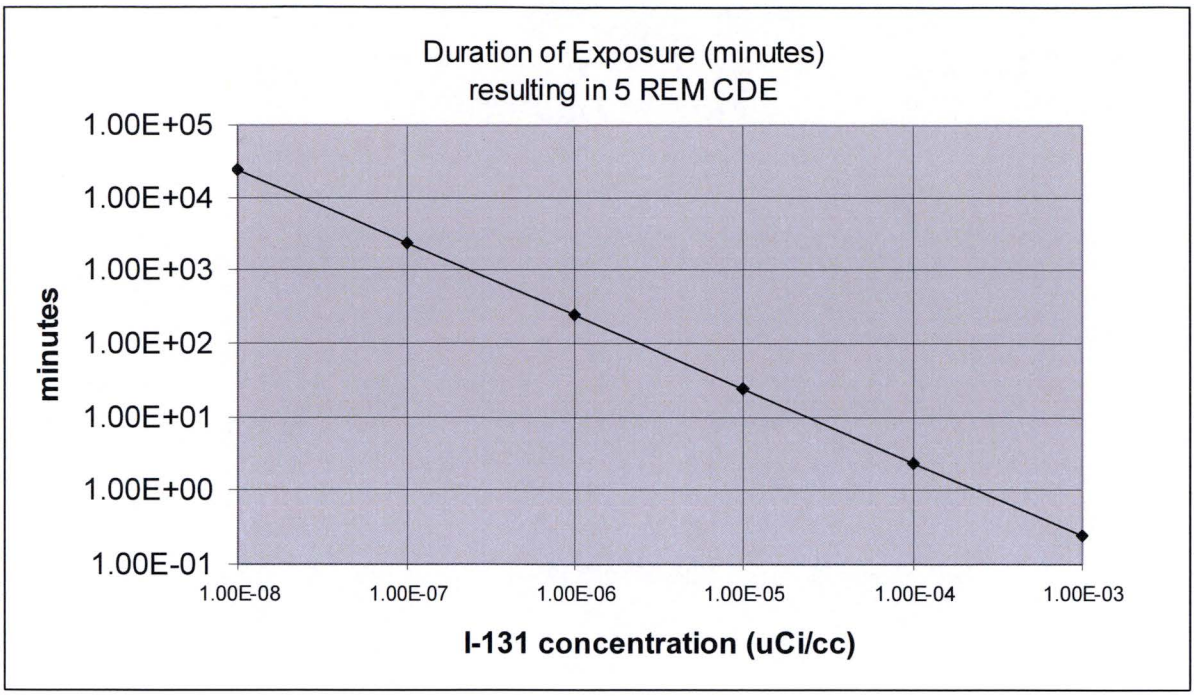
TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi	TIME SINCE RX SHUTDOWN (HRS)	ccpm/μCi
0.25	4.58E+6	7.00	3.18E+6	28.00	1.20E+6
0.50	4.51E+6	8.00	3.01E+6	30.00	1.16E+6
0.75	4.47E+6	9.00	2.84E+6	32.00	1.13E+6
1.00	4.43E+6	10.00	2.69E+6	34.00	1.09E+6
1.25	4.36E+6	12.00	2.40E+6	36.00	1.05E+6
1.50	4.32E+6	14.00	2.15E+6	38.00	1.01E+6
1.75	4.25E+6	16.00	1.92E+6	40.00	9.74E+5
2.00	4.22E+6	18.00	1.71E+6	42.00	9.43E+5
3.00	3.99E+6	20.00	1.53E+6	44.00	9.05E+5
4.00	3.77E+6	22.00	1.36E+6	46.00	8.76E+5
5.00	3.56E+6	24.00	1.28E+6	48.00	8.41E+5
6.00	3.37E+6	26.00	1.24E+6	50.00	8.15E+5

DEAD TIME CORRECTION CURVE

Dead Time Correction Curve For Count Rate Meter



TIME TO 5 REM CDE VERSUS I-131 CONCENTRATION



Instructions for Use:

1. Determine the estimated or actual I-131 airborne concentration in the area(s) of interest. Locate this number on the Horizontal Axis.

2. Locate the duration of exposure in minutes on the Vertical Axis. Find the point at which this value intersects with the number from Step 1.

3. If this point of intersection is located to the left (below) the line, the thyroid CDE is less than 5 rem.

4. If this point of intersection is located to the right (above) the line, the thyroid CDE is greater than 5 rem.

5. If this point of intersection is located on the line, the thyroid CDE is 5 rem.

NOTE:	1 DAC of I-131 is equal to a concentration of 2.0 E-08 µCi/cc.