25671N

CONTROLLED DOCUMENT TRANSMITTAL

25671N

Transmittal#: 25671N Date: 10/09/2002 Initiator: TRACY NELSON Page: 1

Description:
ISSUE OF 1 EMERGENCY PLAN PROCEDURE

Distribution Group(s): **Procedures: EPP: RMT-2080-EOF-001**

Section/Name	Mail Zone	Copies	Comments
Emer Plan:Sec Capt Office	11	1C	
Emer Plan:U1 Mockup	11	1C	
Emergency Planning Coord	11	2C	
Maint: MTIS, M. Lower	10	1C	
MI Dept Environ Quality	P29	1C	
NDM: Library	1*	1C	
NGH: EOF (via EDCC)	22*	27C	Include 1C Index Only
NGH: JPIC (via EDCC)	22*	1C	
NRC: On Site	4A	1C	
NRC: Region III		2C	
NRC: Washington	P16	2C	
Operations Library	5B*	1C	
OSC	1*	1C	
S.S. Office	29*	1C	
Simulator	11	2C	
Site Protective Services	8B	1C	
State of Michigan	P2	1C	
Training Cart 1, T. Ott	11	1C	
Training Cart 2, D. Terry	11	1C	
Training Cart 4, S. Stiger	11	1C	
Training Cart 5, M. McKeel	11	1C	
Training Cart 6, D. Terry	11	1C	
Training Lib:Master Copy	11	1U	
Training Library	11	1C	
TSC	1*	2C	Include 1C Index Only
Unit 1 Control Room	29*	2C	
Unit 2 Control Room	29*	2C	

Transmitted Controlled Document Listing: (1)

Document	Revision	Status	Title
RMT-2080-EOF-001	002	Approved	ACTIVATION AND OPERATION OF THE EOF

Controlled Document Transmittal Receipt and File Acknowledgement:

CONTROLLED DOCUMENTS ONLY

A045

Signature Date

Please sign and return within 14 calendar days to: **D. C. Cook Nuclear Plant**
Nuclear Documents Mgmt (Mail Zone #1) - Document Control
Bridgman, MI. 49106

REVIEW AND APPROVAL TRACKING FORM

Procedure Information:

Number: RMT-2080-EOF-001 Rev. 2 Change: 0

Title: Activation and Operation of the EOF

Category (Select One Only):

- ☐ Correction (Full Procedure)
- ☐ Correction (Page Substitution)
- ☐ Cancellation
- ☐ Superseded (list superseding procedures): _____
- ☒ Change (Full Procedure) with Review of Change Only
- ☐ Change (Page Substitution) with Review of Change Only
- ☐ New Procedure or Change with Full Review

Associated Configuration Impact Assessments:

Change Driver/CDI Tracking No(s).: _____ ☒ N/A

Required Reviews:

Cross-Discipline Reviews:		Programmatic Reviews:	
☐ Chemistry	☐ Training	☐ ALARA	☐ Performance Assurance
☐ Maintenance	☐ Work Control	☐ Bus. Services Proc Grp	☐ Reactivity Mgmt Team
☐ NDM	☒ SEC/ED	☐ Component Engineering	☐ SPS (Safety & Health)
☐ Operations	☐ _____	☐ Design Engineering	☐ Surveillance Section
☐ PA/PV	☐ _____	☐ Emerg Oper Proc Grp	☐ System Engineering
☐ Reg Affairs	☐ _____	☐ Environmental	☐ _____
☐ RP	☐ None Required	☐ ISI/IST Coordinator	☒ None Required

☒ Cognizant Org Review: Cindy Griffenius Date: 9/27/02

☒ Technical Review: B K Mallory Date: 9/30/02

Concurrence:

☐ Ops Mgr Concurrence: N/A Date: __/__/__

☒ Owner Concurrence: [signature] Date: 9/27/02

Package Check:

Updated Revision Summary attached? ☒ Yes

10 CFR 50.59 Requirements complete? Tracking No.: 2002-1428-00 ☒ Yes ☐ N/A

Implementation Plan developed? (Ref. Step 3.4.18) ☐ Yes ☒ N/A

Package Complete: B K Mallory Date: 10/3/02

Approvals:

PORC Review Required: ☒ Yes ☐ No Mtg. No.: 3972

Administrative Hold Status: ☐ Released ☐ Reissued ☒ N/A CR No.: _____

Approval Authority Review/Approval: [signature] Date: 10/4/02

Expiration Date/Ending Activity _____ Effective Date: 10/9/02

Periodic Review:

Periodic Review conducted? (Data Sheet 5 Complete) ☐ Yes ☒ No

Follow-up Actions:

Commitment Database Updated? ☐ Yes ☒ N/A

NDM notified of new records or changes to records that could affect record retention? ☐ Yes ☒ N/A

NDM Use Only

NUCLEAR DOCUMENT MANAGEMENT SECTION

OCT 09 2002

CONTROLLED DOCUMENT

Office Information For Form Tracking Only – Not Part of Form

This form is derived from the information in PMP-2010-PRC-002, Procedure Correction, Change, and Review, Rev. 9a, Data Sheet 1, Review and Approval Tracking Form.

REVISION SUMMARY

Number: RMT-2080-EOF-001 Revision: 2 Change: 0

Title: Activation and Operation of the EOF

No marginal markings used.

Section or Step	Change/Reason For Change
Note prior to Step 1 of Attachment 1	Change: Changed note to state that the facility should be activated within an hour, rather than having a one hour requirement. Reason: To bring procedure in line with the Emergency Plan which states that one hour activation is a goal.

TABLE OF CONTENTS

1 PURPOSE AND SCOPE

1.1 This procedure provides guidance to Emergency Operations Facility (EOF) personnel during emergencies.

1.2 Use of this procedure is restricted to emergency conditions or drills/exercises only.

NOTE:	10 CFR 50.54(x) and (y) describe the actions required if deviation from Technical Specifications or License Condition becomes necessary.

2 DETAILS

2.1 The Emergency Director (ED) implements this procedure.

2.2 Use Attachment 1, Activation, when an emergency response is initiated.

2.3 Use Figure 1, Definitions and Abbreviations for a listing of abbreviations, acronyms, and their meanings.

2.4 Figure 2, Position Descriptions contains supplemental directions for ERO personnel.

2.5 IF additional assistance from other utilities or agencies is required THEN refer to the list in Appendix C of the Emergency Plan. Phone numbers are available in the Emergency Response Organization Phone Directory.

NOTE: O = Optional M = Mandatory

2.6 Perform activities based on the following table.

Activity	Attachment/ Procedure	Responsible Position	UE	Alert	SA	GE
Briefings	2	ED	M	M	M	M
Habitability	3	EAD			M	M
Dose Assessment (EMD-32)	4	EAD		O	M	M
PAR	8	ED				M
Core Damage Assessment	PMP-2081-EPP.105	Reactor Physics Analyst		O	O	O
Classification	7	ED	M	M	M	M
Document Transmission / Distribution	9	Communications Director	O	M	M	M
Field Team Communications	10	FMT Coordinator		O	M	M
Environmental Sampling	11	Field Teams				
Logistical Support	14	Scheduling/Planning Manager			O	O
Shift Designation	12	Security Director	O	O	O	O
Information Requests	20	Communications Director				
External Support	19	Industry Support Communicator		O	O	O
ENS Communications	16	ENS Communicator		M	M	M
HPN Communications	17	HPN Communicator		M	M	M
County Communications	15	Berrien County Communicator			M	M
State Communications	18	MSP Communicator			M	M
Termination/Recovery	12-RMT-2080-EOF-002	ED		M	M	M

3 REFERENCES

3.1 Use References:

3.1.1 PMP-2080-EPP-101, Emergency Classification.

3.1.2 PMP-2081-EPP.105, Initial Core Damage Assessment.

3.1.3 12-RSM-2080-EOF-002, Emergency Termination and Recovery.

3.1.4 Donald C. Cook Nuclear Plant Emergency Plan.

3.2 Writing References:

3.2.1 Source References.

a. Donald C. Cook Nuclear Plant Emergency Plan.

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

c. Dose Assessment Program - Computer Program, Rev. 7.

d. Meteorology and Atomic Energy 1968. U. S. Atomic Energy Commission.

e. Evacuation Time Estimates for the D. C. Cook Nuclear Plant Plume Exposure Emergency Planning Zone HMM Associates July 1992 (Rev.1).

3.2.2 General References

a. Michigan Emergency Preparedness Plan.

b. Berrien County Emergency Preparedness Plan.

NOTE:	The EOF should be activated within 60 minutes of the time of a declaration of an Alert, SAE, or GE.

1 Ensure the facility has the following or an acceptable alternate prior to activation.

1.1 Equipment

- Facility Power
- Plant Process Computer (RDR)
- Dose Assessment Programs and Printers
- Continuous Air and Area Radiation Monitor
- Clocks set with the Plant Process computer

1.2 Communications

1.2.1 Telephones, Fax machines, or Radios to:

- State of Michigan Emergency Operations Center
- Berrien County Emergency Operations Center

1.2.2 Field Monitoring Team Radios

1.2.3 Communications with the Control Room

1.2.4 Managers Telephone Bridge

1.3 Personnel

NOTE:	With the exception of the Emergency Director, the use of non-qualified personnel is permissible provided they are briefed and understand the position specific requirements.

- ☐ Emergency Director
- ☐ Communications Director
- ☐ Environmental Assessment Director
- ☐ Boardwriter
- ☐ Communicator – Berrien County Sheriff Department
- ☐ Communicator – Michigan State Police
- ☐ Communicator –ENS

2 Perform the following:

- Assume responsibilities for communications with offsite agencies.
- Assume responsibilities for Classification, Notification and PARs from the SEC.
- Determine the time the control room will issue their last EMD-32.
- Determine the time the EOF will issue the first EMD-32, Nuclear Plant Event form. The EMD-32a must be issued within 15 minutes of a classification or PAR change. The EMD-32b must be issued within 30 minutes of the last EMD-32a or EMD-32b.

3 Perform a facility brief.

4 Activate the facility.

5 Inform the other ERO facilities that the EOF has been activated.

1 Announce the briefing time 2 to 3 minutes prior to it beginning.

2 Ensure everyone is paying attention, there are no phone conversations or side discussions taking place, and personnel remain stationary during the brief.

3 Perform the briefing. (Time limits are for reference only.)

3.1 **Current Plant Status** (1- Minute Maximum)

- Major on-going events
- Major Equipment out of service
- Prognosis
- Facility priorities

3.2 **Current Classification** (30-Seconds Maximum)

- PAR in effect
- Anticipated changes in classification or PAR

3.3 **Status of the EOF** (for initial briefings up to and including activation)

- Activation Status (When command and control will be taken over from the Control Room),
- Problems delaying activation,
- Time the first EMD-32 is required for transmission to the State (at activation only).

3.4 **Ask the EOF team for updates on important information**

- Don't solve the problems here. Delegate; then update at the next briefing if necessary.

3.5 **Ask the EOF team if anyone is having any problems**

- Don't solve the problems here. Delegate; then update at the next briefing if necessary.

NOTE:	The EOF has no specific habitability requirements because it is outside the 10-mile Emergency Planning Zone. Actions taken are at the discretion of the EAD.

1 IF a radioactive plume is expected to pass over the EOF, THEN:

- Start the continuous air monitor.
- Issue dosimetry to all EOF occupants.
- Shelter or evacuate non-essential personnel in the Buchanan Office Building.
- Turn off or close dampers on ventilation systems that draw air from outside the facility.
- Have personnel remain in the EOF and office building.
- Perform routine surveys to assess dose rates, airborne activity, and post plume contamination.

2 Maintain the dose to the occupants of the EOF below the following for the duration of the emergency.

- TEDE < 5 Rem
- CDE Thyroid < 25 Rem

1 UNLESS the State of Michigan EOC has been notified in advance of a delay or change in frequency, THEN transmit Nuclear Plant Event Technical Data forms (EMD-32b) to the State of Michigan at least every 30 minutes.

2 Obtain and record an 8-hour and 24-hour weather forecast on Data Sheet 1, Meteorological Forecast.

2.1 Forecasts are normally obtained through Murray and Trettle. The phone number is available in the Emergency Response Organization Phone Directory.

2.2 Provide Data Sheet 1, Meteorological Forecast, to the runners for distribution.

2.3 Obtain subsequent forecasts approximately every 8 hours.

3 IF a projected dose is NOT available from the Dose Assessment Program, THEN use projected doses based on measured dose rates from the field and expected duration of the exposure time.

4 IF projected doses are NOT available and a PAR is necessary, THEN use the default PAR. See Attachment 8, PAR.

5 Obtain Meteorological Data. See Attachments 5, Meteorological Data, and 6, Pasquill Category, for additional information and help.

6 Obtain radiological data as applicable.

6.1 Radiation Monitoring System (RMS) data listed in order of preference:

- PPC/RDR
- RMS Display Terminals
- Technical Support Center
- Direct readings from the Local Area Data Acquisition Modules

6.2 Field Team data

- Radiation reading in R/hr
- Iodine concentration in μCi/cc
- Sample location

7 Determine the Coolant Type from:

- EOF Reactor Physics Analyst
- Technical Support Center Plant Evaluation Team
- GO TO Initial Core Damage Assessment procedure, PMP-2081-EPP-105.

8 Determine the Projected Duration of the Release.

- **IF** the projected duration of the release is unknown, **THEN** use 1-hour.
- **IF** releases are occurring from multiple points, **THEN** use the longest projected duration.

9 Determine if an Actual Release versus a Potential Release is occurring.

9.1 An actual release is occurring when any of the following are true:

- Valid indication on release point radiation monitoring system channels are present that are associated with a classified event, or
- Measured offsite radiation readings indicate a release is in progress, or
- Indications exist that an unmonitored release may be occurring.

9.2 A potential release exists if calculated data is postulated based on present plant conditions (i.e., Containment Loss Of Coolant Accident, CLOCA).

10 Complete the EMD-32b form.

- The EMD-32b, Release/Offsite Dose Data section, is only required to be completed if a release is or is suspected to be occurring.
- The EMD-32b, Measured Offsite Radiation Levels section, needs only be reported when available.

11 Review the EMD-32b form to determine if a change in classification or PAR is required.

12 **IF** a change is necessary, **THEN**:

- The ED approves the EMD-32b form.
- Follow the instructions on the Classification or PAR attachment.

13 IF a change is not necessary, THEN:

- The ED approves the EMD-32b form.
- Provide the EMD-32b form to the Fax operators for transmittal.

NOTE:	Wind speeds are expressed as Miles per Hour. To convert Knots to Miles per Hour multiply by 1.15.

1 Consider lake breezes in the dose assessment process if all the following are true:

- The current date is between April 15 and October 31,
- The current time is between 1-hour after sunrise and 1-hour after sunset,
- Ambient temperature measured at the main tower must be greater then the Lake Michigan temperature,
- Wind speed on the shoreline tower is $\leq$ 13.4 Miles per Hour,
- Pasquill category must be A, B, C, or D,
- Shoreline tower wind direction is **FROM** 205° to 23° (i.e., Wind is from the lake).

1.1 Obtain meteorological data from one of the following sources. Sources are listed in order of preference.

1.1.1 Plant Process Computer

- 10 Meter Main
- 10 Meter Backup
- 60 Meter Main

1.1.2 Murray and Trettle

a. Obtain the phone number from the Emergency Response Organization Phone Directory.

b. Request to speak to the Nuclear Emergency Director.

c. Obtain

- Wind Speed in Miles per Hour
- Wind Direction from, in degrees
- Pasquill Category as a letter **NOT** a number
- Eight and 24-hour meteorological forecast

1.1.3 Manual Acquisition of Meteorological Tower Data

- Contact the Technical Support Center and request a team be dispatched to collect this data.

1.1.4 National Oceanic and Atmospheric Administration (NOAA)

- Obtain the plants NOAA phone extension from the Emergency Response Organization Phone Directory.
- Use any NOAA weather radio.

1 Obtain Pasquill Category data from one of the following sources. Sources are listed in order of preference.

1.1 Plant Process Computer

1.2 Temperature Differential

ΔT °F = T @ 60m – T @ 10m (Z = 50 Meters)	Pasquill Category	ΔT °C = T @ 60m – T @ 10m (Z = 50 Meters)
ΔT °F ≤ -1.8	A	ΔT °C ≤ -1.0
-1.8 < ΔT °F ≤ - 1.6	B	-1.0 < ΔT °C ≤ - 0.9
-1.6 < ΔT °F ≤ -1.4	C	-0.9 < ΔT °C ≤ -0.8
-1.4 < ΔT °F ≤ - 0.5	D	-0.8 < ΔT °C ≤ - 0.3
-0.5 < ΔT °F ≤ +1.3	E	-0.3 < ΔT °C ≤ +0.7
+1.3 < ΔT °F ≤ +3.6	F	+0.7 < ΔT °C ≤ +2.0
+3.6 < ΔT °F	G	+2.0 < ΔT °C

1.3 Standard Deviation of the Horizontal Wind Direction (STD)

STD	Pasquill Category
STD ≥ 22.5	A
22.5 ≥ STD > 17.5	B
17.5 ≥ STD > 12.5	C
12.5 ≥ STD > 7.5	D
7.5 ≥ STD > 3.8	E
3.8 ≥ STD > 2.1	F
2.1 ≥ STD	G

1.4 Murray and Trettle

- See Attachment 5, Meteorological Data.

1.5 Observation

Incoming Solar Radiation (Day Only) (1 hour after sunrise to 1 hour before sunset)					
Sun Angle Degrees from Horizon	Cloud Cover				
	None	1/8 – 5/8	5/8 – 7/8		8/8
			Middle Clouds	Low Clouds	
15° - 35°	Slight	Slight	Slight	Slight	Slight
35° - 60°	Moderate	Slight	Slight	Slight	Slight
> 60°	Strong	Strong	Moderate	Slight	Slight

	Day			Night	
Wind Speed @ 10 meters Miles per Hour (Mph)	Incoming Solar Radiation			Thinly Overcast or ≥ 4/8 Low Clouds	≤ 3/8 Clouds
	Strong	Moderate	Slight		
Mph ≤ 5	A	A – B	B	--	--
5 < Mph ≤ 7	A – B	B	C	E	F
7 < Mph ≤ 11	B	B – C	C	D	E
11 < Mph ≤ 13	C	C – D	D	D	D
Mph > 13	C	D	D	D	D

1 Perform classifications using PMP-2080-EPP-101.

2 If a classification upgrade is made:

2.1 Note the time of the classification and determine the 15-minute notification time.

2.2 Notify the control room to initiate plant public address announcements and sound the Nuclear Emergency Alarm as specified in the control room procedures.

2.3 Complete an EMD-32a, Nuclear Plant Event Notification, form.

2.3.1 Reason for Classification:

- **IF** (H-1) SEC Judgement is used, **THEN** select the reason most applicable to the situation.

2.3.2 Radiological Release in Progress Due to Event is yes when:

- Valid indications on release point radiation monitoring system channels are present that are associated with a classified event, or
- Measured offsite radiation readings indicate a release is in progress, or
- Indications exist that an unmonitored release may be occurring.

2.3.3 **IF** the classification is a General Emergency, **THEN** develop a PAR.

2.4 The ED approves the classification upgrade.

2.5 The ED notifies the State/County authorities.

2.5.1 If the State EOC has **NOT** been activated:

- Transmit the EMD-32a to the Berrien County Sheriff's Department
- The ED discusses the EMD-32a data and applicable PARS, with the Berrien County Sheriff's Department.

2.5.2 If the State EOC has been activated:

- .Transmit the EMD-32 to the State of Michigan EOC.
- The ED discusses the EMD-32a data, and applicable PARs, with the State EOC.

2.6 Notify the other facilities as applicable.

2.7 Perform a facility brief.

2.8 Update the facility status boards/maps with classification data, PARs, and Protective Action Orders received from the State of Michigan.

NOTE:	PARs must accompany the declaration of a General Emergency.

1 Note the time of the PAR and determine the 15-minute notification time.

2 Use the Default PAR if:

- A General Emergency has been declared for non-radiological release conditions, or
- It is not possible to determine the Site Boundary TEDE or CDE dose and a release is or is suspected to be in progress.

3 Prior to developing a PAR, consider any forecasts of changing weather conditions.

4 IF the PAR is based on Dose Calculations, **THEN** an EMD-32b, Nuclear Plant Event Technical Data sheet must accompany the EMD-32a, Nuclear Plant Event Notification form

5 Compare field team data to the projected area of the PAR.

6 IF the field team data indicates the plume is outside the projected area, **THEN** change the PAR to include the actual data.

7 Update the EMD-32a with the PAR information.

8 The ED approves the PAR change.

9 The ED notifies the State/County authorities.

9.1 If the State EOC has **NOT** been activated:

- Transmit the EMD-32a (and EMD-32b as applicable) to the Berrien County Sheriff's Department.
- The ED discusses the EMD-32 data, and applicable PARs with the Berrien County Sheriff's Department.

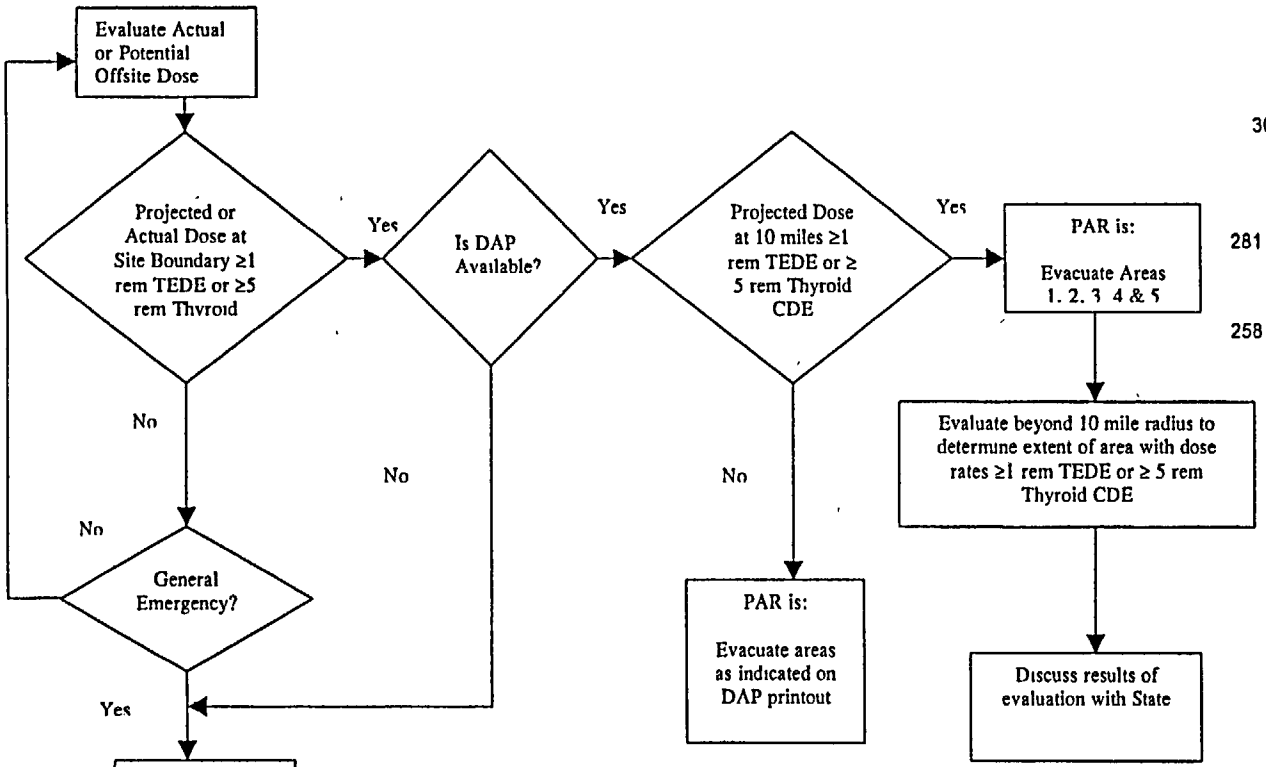
9.2 If the State EOC has been activated:

- Transmit the EMD-32a (and EMD-32b as applicable) to the State of Michigan EOC.
- The ED discusses the EMD-32 data, and applicable PARs with the State EOC.

10 Notify the other facilities as applicable.

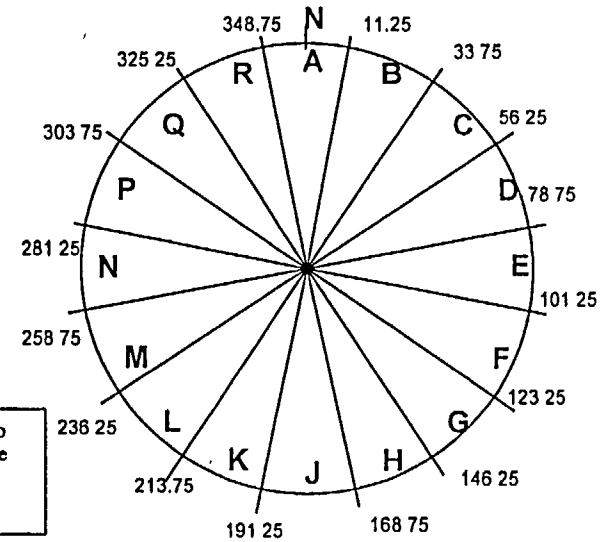
11 Perform a facility brief.

12 Update the facility status boards/maps with classification data, PARs, and Protective Action Orders received from the State of Michigan.



Determine affected areas as follows:

A. Direction wind is blowing from (in Degrees) _____
B. Using diagram above, locate sector opposite direction identified in A _____
C. Downwind sectors (sector identified in B plus 2 adjacent sectors) _____
D. Convert downwind sectors to areas using the Sectors to Areas table.
E. **PAR is: Evacuate areas _____ (from D)**



Sectors	Areas
A, B & C to 5 miles	1 and 2
B, C & D to 5 miles	1, 2 and 3
C, D & E to 5 miles	1, 2 and 3
D, E, & F to 5 miles	1, 2 and 3
E, F & G to 5 miles	1, 2 and 3
F, G & H to 5 miles	1 and 3
G, H & J to 5 miles	1 and 3
H, J & K to 5 miles	1 and 3
J, K & L to 5 miles	1 and 3
K, L & M to 5 miles	1 and 3
L, M & N to 5 miles	1
M, N & P to 5 miles	1
N, P & Q to 5 miles	1
P, Q & R to 5 miles	1
Q, R & A to 5 miles	1
R, A & B to 5 miles	1 and 2

NOTE:	Some of the facility Fax machines are designated within the phone directory as TRANSMIT and others as RECEIVE. These machines should remain in their designated mode to better facilitate communications between facilities.

1 Ensure the Fax machine dates and times are set correctly.

2 Obtain the Fax machine phone numbers for the facilities and off site agencies from the Emergency Response Organization Phone Directory.

3 Forward all documents for duplication and distribution to the facility runners.

4 Forward all original documents to the Communication Director.

5 Log all incoming and outgoing Fax's in the facility Fax Log.

6 IF a Fax is **NOT** specifically addressed to an individual or position, **THEN** distribute incoming Fax's to all positions as described on the facility distribution map located in the copy area.

7 The following table gives additional direction on the transmission and distribution of material:

Document	Destination	Frequency	Additional Instructions
Nuclear Plant Event Notification Form (EMD-32a) Nuclear Plant Event Technical Data (EMD-32b)	State EOC	EMD-32a 15-Minutes EMD-32b 30-Minutes	The EMD-32a and b forms transmitted to the State of Michigan should have priority over all other Fax's.
	TSC	As Available	
	News Center	As Available	The initial transmission of all documents to Corporate Communications shall be established through the News Center by corporate communications personnel.
	JPIC	As Available	Distribution to the JPIC members.
	EOF Personnel	As Available	Distribute to EOF members.
Meteorological Forecast Data Sheet 1	State EOC	As Available	None
	Berrien County EOC	As Available	None
	NRC	As Available	None
	EOF Personnel	As Available	Distribute to EOF members.
Boardwriter Notes	EOF Personnel	As Available	Distribute to EOF members.

1 **WHEN** dose assessment is considering lake breezes, **THEN** dispatch the field teams along the standard routes to locations either North and/or South of the plant to determine if the plume is moving in a parallel path to the Lake Michigan shore line.

2 **IF** the projected offsite dose rates for the team positions exceed 1 rem/hr TEDE or 5 rem/hr CDE Thyroid, **THEN** consider:

- Repositioning the team(s) to reduce the overall expected exposure.
- Distribution of Potassium Iodine (KI) to team members.

3 Have the field teams perform surveys based on the appropriate release status:

3.1 Pre-release - no release has occurred.

3.1.1 Determine the postulated direction and dispersion width of the plume based on the wind direction, wind speed, Pasquill Category stability class, and its associated isopleth.

3.1.2 Position the survey vehicles downwind on Red Route 1.

3.1.3 Have the survey vehicle traverse the downwind portion of the route while surveying for radiation readings above background.

3.1.4 **IF** above background readings are reported, **THEN** notify the EAD immediately. An unmonitored release may be occurring.

3.2 Plume Phase

3.2.1 Determine the postulated direction and dispersion width of the plume based on the wind direction, wind speed, Pasquill Category stability class, and isopleth.

3.2.2 Use the projected dose rates as guidance to determine the best distance from the plant to collect airborne sample data without risking overexposure to field team members. Iodine and particulate materials tend to plate out quickly on surrounding surfaces. Airborne samples should be collected at the location of the highest dose rate reading within the plume.

3.2.3 Direct the survey teams to perform either a full traverse or plume definition survey.

a. Full Traverse

1. Direct the survey teams to traverse the plume reporting back, as a minimum, boundary (0.1 mR/hr) and centerline (highest reading) data.

2. IF an air sample is necessary, THEN have it taken at the plume centerline.

3. Record the Field Team data on Data Sheet 2,Offsite Survey Log.

4. Plot the data on a map to define the plume boundries and centerline.

b. Plume Definition

1. Direct the survey teams to:

- Enter the plume until $\geq$ 0.1 mR/hr is detected.
- Immediately exit the plume.
- Report back the plume boundary location and radiation reading.

2. Record the Field Team data on Data Sheet 2,Offsite Survey Log.

3. Plot the data on a map to define the plume boundary.

3.2.4 IF field teams report a reading $\geq$ 1R/hr, THEN immediately notify the EAD. A change in the emergency classification may be necessary.

3.2.5 Compare the field team data to the most recent PARs.

3.2.6 IF the field team data does NOT match the projected location of the plume, THEN immediately notify the EAD. A change to the PAR may be necessary.

3.3 Post Plume Phase

3.3.1 The post plume phase should be performed in 2 stages: (initial and long term)

a. Initial (Ground Deposition Foot Print)

1. Direct the field monitoring teams to traverse the areas the plume covered starting close-in to the plant and working outward.

2. Plot the results on a map to determine the extent of the ground deposition.

3. **WHEN** the deposition footprint has been determined, **THEN** initiate the long term post plume phase sampling.

b. Long Term

NOTE:	Though the emergency may have been terminated prior to entering the long-term post plume phase, these directions are intended to give the field team guidance for the collection of samples.

1. Direct the field teams to collect soil, water, snow, and vegetation samples as applicable within the ground deposition area. Take samples in locations to define deposition on the ground.

2. Direct the field teams to collect soil, water, snow, and vegetation samples as applicable outside the ground deposition area. Negative results are necessary to confirm no hazards are present.

3. Plot the sample positions on a map to allow for further deposition analysis.

1 Collect samples that are representative of the topography of the area unless otherwise specifically requested.

2 Change the volume or surface area of samples collected as conditions warrant. Note the changes in the comment section on the appropriate form.

3 Log all samples on Data Sheet 3, Environmental Sample Collection, giving a specific location listed in order of preference.

- Physical location
- On a map
- Using landmarks; ensure sufficient references are documented to relocate the specific area.

4 Perform Plume Surveys, as directed:

4.1 Plume Traverse

4.1.1 Traverse the route as instructed by the EOF, keeping the closed window probe outside the vehicle.

4.1.2 Record the location and reading on Data Sheet 2, Offsite Survey Log, where the instrument indicates:

- The leading edge of the plume (0.1 mR/hr)
- The centerline (highest reading) of the plume
- The trailing edge of the plume (0.1 mR/hr)

4.1.3 Transmit the data to the EOF.

4.1.4 IF an air sample was requested, THEN re-enter the plume to the instructed location and obtain the sample. This is normally performed at the plume centerline.

4.2 Plume Definition

4.2.1 Start the route as instructed by the EOF, keeping the closed window probe outside the vehicle.

4.2.2 Record the location and reading on Data Sheet 2,Offsite Survey Log, where the instrument indicates the leading boundary ($\geq$ 0.1 mR/hr) of the plume.

4.2.3 Exit the plume.

4.2.4 Transmit the data to the EOF.

5 Obtain an air sample as follows:

- Draw a minimum of 4 cubic feet of air.
- Document all air sample data on the air sample envelope.

6 Obtain soil, snow, water, and vegetation samples as follows:

- Use Data Sheet 3 for instructions for collection and documentation of environmental samples.

NOTE:	Obtain individual phone numbers from the Emergency Response Organization Phone Directory.

1 Managers coordinate shift turnovers to ensure plant conditions allow individuals to report to their respective facilities without undue risk or exposure.

2 Security Director coordinates and communicates any plant access restrictions with the security force.

3 Finalize routing instructions prior to notifying any individuals.

4 Obtain position lists specific to the OSC and TSC from 12-RMT-2080-OSC.001 and 12-RMT-2080-TSC-001.

5 **IF** roadblocks have been established by local or state law enforcement, **THEN** the State EOC should be notified with the list of oncoming personnel to allow passage through roadblocks.

6 **IF** desired, **THEN** the Dialogic Paging system can be used to contact off-duty team members. Attachment 13, Dialogic Paging System gives detailed instructions for reprogramming and activation.

Shift Start Time: _____

Routing Instructions:

_____

_____

Position Title	Name
Berrien County Liaison	
Boardwriter	
Communicator – Berrien County Sheriff Department	
Communications Director	
Communicator – Michigan State Police	
Communicator –ENS	

Communicator –HPN	
Computer Analyst	
Emergency Director	
Emergency Planning	
Engineering Design & Site Services Manager	
Environmental Assessment Coordinator (1)	
Environmental Assessment Coordinator (2)	
Environmental Assessment Director	
Fax Operator	
Field Monitoring Team Coordinator	
Industry Support Communicator	
Michigan State Police Liaison	
Operations Advisor	
Reactor Physics Analyst	
Regulatory Affairs Coordinator	
Runner (1)	
Runner (2)	
Security Director	
Scheduling & Planning Manager	

NOTE:	The Dialogic Paging system can be reprogrammed to contact off-duty members of the Emergency Response Organization. These actions should only be performed from one facility, preferably the EOF, and should be done to provide subsequent staffing for ALL facilities.

1 Prior to contacting Dialogic:

1.1 Notify the facility managers to instruct all ERO members who are currently in a facility, NOT to respond to the page.

1.2 Prescript the instructions (Dialogic refers to this as a greeting) that will be recorded prior to the activation of the pagers. Consider:

1.2.1 All ERO pagers will be activated. You cannot select a specific team for response.

1.2.2 Having ERO members contact the EOF at particular phone number(s) to receive further instructions after accepting a position.

1.2.3 Where and how the individuals should report. If a release has occurred, it may be advantageous to have member's report to the EOF for transport to the plant.

1.2.4 What time the ERO members are to report.

1.3 Obtain the password code, located in the Security Directors' lock box in the EOF.

2 To change the recorded instructions for responding ERO members and activate the scenario:

2.1 Call Dialogic. The Dialogic Pager Activation phone number can be obtained from the Emergency Response Organization Phone Directory.

2.2 The system will ask you for your company ID number, followed by the # sign. Enter 1344 #

2.3 The system will ask for your scenario activation password, followed by the # sign. Enter the password code followed by the # sign.

2.4 To start a scenario, enter the scenario ID followed by the # sign or press # alone for more options. Enter 911 #

2.5 The system will state:

2.5.1 To listen to the current scenario message, Press 1

2.5.2 To re-record the scenario message, Press 2

- The system will direct you to record the new message followed by the # sign.

2.5.3 To start the scenario, Press 3

- The system will respond with "The scenario is building". Press # and hang up.

2.5.4 To return to the main menu, Press #

- The system will give more options to consider or press # to end this call.

2.6 Reports will be faxed to the EOF containing the names of the individuals who have responded and accepted a position.

2.7 Forward results to the appropriate facility managers.

NOTE: The Scheduling and Planning Manager can provide the following services to the ERO. This position has the authority to purchase or lease materials and equipment necessary to support the ERO and the Plant and to generate contracts necessary for the augmentation of staffing.

- Arranging lodging for ERO personnel who cannot return to their homes because of an evacuation.
- Arranging lodging for personnel responding from outside agencies.
- Providing for the purchase of food to ERO facility members and support personnel.
- Purchasing or renting equipment necessary to mitigate or respond to emergencies.
- Providing for additional assistance from contractors or other agreement facilities.
- Arranging for delivery of equipment and materials.
- Providing assistance for contractual issues.
- Other services as deemed necessary by the Emergency Director.

1 Obtain permission from the Emergency Director to initiate the requested actions.

2 Generate the appropriate documents necessary to perform the requested action.

3 **UPON** completion of the documents, **THEN** obtain the Emergency Directors approval.

4 **IF** the materials need to be brought into the 10-mile Emergency Planning Zone, **THEN:**

- Obtain concurrence from the Environmental Assessment Director for delivery restrictions.
- Discuss the delivery route with the TSC Security Director.
- Ensure the State of Michigan EOC has been notified of the intended delivery and route.

5 Implement the approved request, including any restrictions.

NOTE:	The Berrien County Emergency Operations Center may not be operational immediately after the declaration of a Site Area or General Emergency. Continue to communicate with the Berrien County Sheriff's Department until the Berrien County EOC is operational.

1 Contact the appropriate Berrien County facility based on the emergency classification.

1.1 Alert

1.1.1 Contact the Berrien County Sheriff's Department.

1.1.2 **UPON** receipt of an EMD-32a or EMD-32b, **THEN** provide the following information:

a. Provide your name, Title (BCSD Communicator), and your telephone number.

b. Provide the remainder of the information as entered on the EMD-32.

1.1.3 **UPON** receipt of any inquiries from the Sheriff's Department, **THEN** follow the instructions on the Information Request attachment.

1.1.4 **UPON** completion of each communication with the Sheriff's Department, **THEN** hang up the phone and re-establish communications when necessary.

1.2 SAE OR GE

1.2.1 Contact the Berrien County Liaison at the Berrien County EOC. This individual is provided to the county EOC by AEP and is an AEP employee.

1.2.2 **UPON** receipt of an EMD-32, **THEN** provide the following information:

a. Provide your name, Title (BCSD Communicator), and your telephone number.

b. Provide all information except the Protective Action Recommendations on the EMD-32a.

1.2.3 **UPON** receipt of any inquiries from the Berrien County EOC, **THEN** follow the instructions on the Information Requests attachment.

1.2.4 Maintain constant communications with the Berrien County EOC. Do not hang up the phone.

1 Contact the NRC using the Emergency Notification System phone.

1.1 Dial the MAIN number listed on the phone. **IF** there is no answer, **THEN** dial the BACKUP number.

1.2 Once communications is established state the following:

- "This is the D. C. Cook Emergency Operations Facility. This is an initial contact notification to ensure communications have been established. The EOF is not activated at this time. Communications relative to plant status should continue from the control rooms.

2 Provide the NRC Duty Officer with the following information relative to plant conditions:

- Current emergency classification.
- Emergency Condition Category (ECC) under which the emergency was declared. Include the ECC number, title, and a brief description of the actual event.
- Current plant conditions.

3 Continue to notify the NRC of changes such as:

- Changes to the emergency classification
- Status of injured personnel
- Equipment unavailability
- Damage control team status
- Calculated leak rates
- Core damage assessment
- Fission product barrier status

4 **UPON** receipt of any inquiries from the NRC that cannot be answered using data already available from other sources, **THEN** follow the instructions on the Information Requests attachment.

1 Contact the NRC using the Health Physics Notification System phone.

1.1 Dial the MAIN number listed on the phone. **IF** there is no answer, **THEN** dial the BACKUP number.

1.2 Once communications is established state the following:

- "This is the D. C. Cook Emergency Operations Facility. This is an initial contact notification to ensure communications have been established. Communications relative to Health should continue from the control rooms."

2 Provide the NRC Duty Officer with the following information relative to plant conditions:

- Current emergency classification.
- Emergency Condition Category (ECC) under which the emergency was declared. Include the ECC number, title, and a brief description of the actual event.
- Current plant conditions.

3 Continue to notify the NRC of changes from the EMD-32 such as:

- Changes to the emergency classification
- Meteorological data
- Radiological releases
- Calculated offsite dose and dose rates
- Field Team monitoring data
- PAR

4 **UPON** receipt of any inquiries from the NRC that cannot be answered using data already available from other sources, **THEN** follow the instructions on the Information Requests attachment.

NOTE:	Phone extension 1088 exists in the control rooms and the EOF MSP Communicators position. Communications should already be established between the Control Room and the MSP.

1 Contact the Control Room and the MSP Operations Center by:

1.1 Using EOF phone extension 1088, pick up the handset and listen for a dial tone.

1.2 **IF** a dial tone is present, **THEN** using another phone, contact the Control Room MSP Communicator by dialing extension 1088.

1.3 **IF** a dial tone is **NOT** present, **THEN** identify yourself and wait for a reply from the Control Room and/or the State.

2 **WHEN** communications is established, **THEN** provide the current activation status of the EOF.

3 **IF**, after activation, the EOF is **NOT** capable of faxing EMD-32 forms to the State, **THEN** transmit the information verbally.

- Provide your name, Title (MSP Communicator), and your telephone number (1-616-465-5901, Ext. 1088).
- Provide the remainder of the information as entered on the EMD-32a or EMD-32b.

4 **UPON** receipt of any inquiries from the MSP, that cannot be answered using data already available from other sources, **THEN** follow the instructions on the Information Request attachment.

1 UPON declaration of an Alert, SAE, or GE, and activation of the EOF, THEN contact the following agencies. Obtain phone numbers and contact names from the Emergency Response Organization Phone Directory.

- American Nuclear Insurers (ANI)
- Institute of Nuclear Power Operators (INPO)
- Westinghouse

2 Provide each with the following information:

2.1 ANI

- Plant status
- Current emergency classification
- Offsite PAR
- Offsite Protective Action Orders

2.2 INPO

- Plant status
- Unavailable equipment
- Current emergency classification
- Offsite PARs
- Offsite Protective Action Orders

2.3 Westinghouse

- Plant status
- Unavailable equipment
- Current emergency classification

3 UPON receipt of any inquiries that cannot be answered using data already available from other sources, THEN follow the instructions on the Information Requests attachment.

NOTE:	Information requests are designed to document questions and answers for information not normally available.

1 Generating a request.

1.1 Print information request on all-purpose forms in complete and legible format.

1.2 Supply the following minimal information:

- Position requesting the information.
- Position the request is being sent to.
- Detailed question.

1.3 Retain the bottom copy.

1.4 Forward the request to the Communications Director.

1.5 The Communications Director:

1.5.1 Reads the request and ask for clarification if necessary.

1.5.2 Forwards the request to the appropriate position.

2 Responding to a Request.

2.1 Print responses in complete and legible format.

2.2 Forward the response to the Communications Director.

2.3 The Communications Director:

2.3.1 Forwards a copy of the response to the originator.

2.3.2 Retains the original message form.

Facility: Cook Nuclear Plant

Time/Date Forecast Obtained:
_____/_____

Forecast Source: _____ Murray & Trettle
_____ NOAA
_____ Other _____

A. Eight Hour Forecast

1. Wind Direction: _____ Degrees From
2. Wind Speed: _____ Miles Per Hour
3. Differential Temperature: _____ °F or °C
4. Stability Class: _____
5. Remarks: _____
_____
_____
_____

B. Twenty-four Hour Forecast

1. Wind Direction: _____ Degrees From
2. Wind Speed: _____ Miles Per Hour
3. Differential Temperature: _____ °F or °C
4. Stability Class: _____
5. Remarks: _____
_____
_____
_____

Date	Time	Leading Edge		Centerline		Trailing Edge		Initials
		Location	Reading	Location	Reading	Location	Reading	

Environmental Sample Collection Data Sheet

Date: _____ Time: _____ Sampled By: _____

Type: Soil Snow Water Vegetation _____

Location: Location _____

Comments: _____

Soil

1) Do NOT obtain samples from disturbed areas or under trees containing foliage.
2) Remove sufficient soil from the surface of the area to fill a 4-liter sample container.
3) Mark all containers with the date, time, and samplers initials.

Surface area of material removed _____ cm^2

Snow

1) Do NOT obtain samples from drifts, disturbed areas, or under trees containing foliage.
2) **IF** additional snow has fallen since the release occurred, **THEN** remove fresh snow to obtain a representative sample.
3) **IF** it was snowing during the plume phase, **THEN** take the sample to the depth of the accumulated snow exposed to the plume.
4) Collect a minimum of 12-liters of snow.
5) Mark all containers with the date, time, and samplers initials.

Surface area of material removed _____ cm^2 Depth _____ cm

Water

1) Do NOT collect samples from stagnant pools under trees containing foliage.
2) Avoid disturbing and collecting the surrounding sediment.
3) Collect a minimum of 4 liters of water.
4) Mark all containers with the date, time, and samplers initials.

Sample obtained from a: Stagnant Pool Running Tributary

Vegetation

1) Do NOT obtain samples from disturbed areas or under trees containing foliage.
2) Cut as close to the root as possible, when sampling ground vegetation.
3) Remove material from the outer, exposed areas only, when sampling trees or bushes.
4) Collect only the normally edible portion, when sampling foodstuffs.
5) Collect a minimum of 12 liters of vegetation.
6) Mark all containers with the date, time, and samplers initials

Surface area of material removed _____ cm^2

Term	Meaning
AEP	American Electric Power
ANI	American Nuclear Insurers
BCSD	Berrien County Sheriff's Department
CDE	Committed Dose Equivalent
CLOCA	Containment Loss of Coolant Accident
DAP	Dose Assessment Program
EAD	Environmental Assessment Director
ECC	Emergency Condition Category
ED	Emergency Director
EMD-32a	Nuclear Plant Event Notification form
EMD-32b	Nuclear Plant Event Technical Data form
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
ENS	Emergency Notification System
ERO	Emergency Response Organization
FMT	Field Monitoring Team
GE	General Emergency
HPN	Health Physics Network
INPO	Institute of Nuclear Power Operations
JPIC	Joint Public Information Center
KI	Potassium Iodine thyroid blocking agent

Term	Meaning
MSP	Michigan State Police
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
OSC	Operations Support Center
PAO	Protective Action Order
PAR	Protective Action Recommendation
PC	Personal Computer
PET	Plant Evaluation Team
PPC	Plant Process Computer
PORV	Power Operated Relief Valve
RDR	Real-Time Data Repository
RMS	Radiation Monitoring System
SAE	Site Area Emergency
STD	Standard Deviation
TEDE	Total Effective Dose Equivalent
TSC	Technical Support Center
X/Q	Mathematical term for Dispersion Coefficient
ΔT	Net Temperature Difference
ΔZ	Net Vertical Distance

The position descriptions provided are intended as guidance. Deviations and additions to these descriptions are allowed as long as the accomplished objectives can be achieved.

Berrien County Liaison

- Reports to the Berrien County EOC at an SAE or GE. He should be dispatched at an Alert if escalation is expected.
- Assists county personnel with interpretation of data supplied by plant and state facilities as necessary.

Boardwriter

- Reports to the Communications Director.
- Obtains data from the other facilities and the EOF that is considered common to all facilities and the affected control room in a chronological order.
- Provides other facilities with information and decisions generated in the EOF.
- Maintains the Emergency classification Board with the proper emergency classification, classification time, and reasons for the classification.
- Documents incoming messages or inquiries to other EOF personnel on all-purpose message forms and forwards them to the Communication Director.
- Provides the EOF runners with copies of board data at, at least, 15-minute intervals.

Berrien County Sheriff Department Communicator

- Reports to the Communications Director.
- Prior to activation of the Berrien County EOC, provides plant status to the county.
- Upon activation of the Berrien County EOC, provides plant status and radioactive release data to the Berrien County Liaison.

Communications Director

- Reports to the Emergency Director.
- Directs and coordinates communication activities within the facility.

Computer Analyst

- Reports to the Communications Director.
- Provides for all repair/replacement of computer related equipment in the EOF.
- Operates the PPC/RDR used to display data throughout the EOF.

Emergency Director

- Is responsible for the overall command and control of the emergency.
- Assumes responsibility for Classification, Notification and PAR's.
- Communicates with senior state and county officials on plant conditions and PARs.
- Reviews press releases.
- Directs and coordinates EOF activities.

- Activates the EOF.
- Maintains regular communication with the other facility managers on the Managers Bridge.
- Updates EOF members through facility briefs on the status of the emergency approximately every 30 minutes.
- Informs the Environmental Assessment Director of changes in plant parameters that may effect off-site releases or PARs.

Emergency Planning
- Reports to the Emergency Director
- Provides facility oversite.
- Provides guidance to the ERO to ensure critical functions are completed in a timely manner.

Engineering Design & Site Services Manager
- Reports to the Emergency Director.
- Coordinates engineering and technical support from sources outside the ERO.
- Provides engineering support and analysis to the EOF.

ENS Communicator
- Reports to the Communications Director.
- Provides information to the NRC relative to plant equipment conditions and plant status.

Environmental Assessment Coordinator
- Reports to the Environmental Assessment Director.
- Evaluates plant effluent readings for indications of radiological releases.
- Evaluates off-site field team data.
- Performs dose assessment.
- Generates EMD-32 Nuclear Plant Accident Notification forms.
- Make recommendations to the Environmental Assessment Director relative to radioactive releases and plant status.

Environmental Assessment Director
- Reports to the Emergency Director.
- Directs and coordinators offsite radiological assessment.
- Provides basic direction to the Environmental Assessment Coordinators for performing dose assessment.
- Generates PARs
- Directs the Field Team Coordinator for placement of survey vehicles.
- Provides overall radiological habitability assessments of the EOF.

Fax Operator

- Reports to the Communications Director.
- Provides Fax services to personnel within the EOF.
- Forwards all copies of incoming Fax's to the facility Runners for distribution and maintenance.
- Forwards all original outgoing Fax's and data sheets to the Communications Director.

Field Monitoring Team Coordinator

- Reports to the Environmental Assessment Director.
- Directs off-site monitoring teams for tracking of radioactive releases (Plumes).
- Directs off-site monitoring teams for collection of post plume samples.
- Provides data plots to the Environmental Assessment Team showing plume locations and footprints.

HPN communicator

- Reports to the Communications Director.
- Provides information to the NRC relative to radiological conditions on-site and off-site releases.
- Provides PARs and Protective Action Orders information.

Industry Support Coordinator

- Reports to the Communications Director.
- Provides communications links to ANI, Westinghouse, and INPO relative to plant status and radioactive releases.

Michigan State Police Communicator

- Reports to the Communications Director
- Provides plant status and PAR data to the State of Michigan EOC.

Michigan State Police Liaison

- Reports directly to the State of Michigan Emergency Operations Center in Lansing, Michigan.
- Reports to the State of Michigan EOC at a SAE or GE. He should be dispatched at an Alert if escalation is expected.
- Obtains answers to inquiries form the State of Michigan and ensuring these responses are relayed to the State.
- Assists state personnel with interpretation of data supplied by plant facilities as necessary.

Operations Advisor

- Reports to the Emergency Director.
- Assists the ED with classification determinations.
- Provides EOF personnel and off-site agencies with plant status clarifications.

Reactor Physics Analyst

- Reports to the Engineering Design & Site Services Manager.
- Provides EOF personnel with the current core status.
- Determines the current reactor coolant status used in dose assessment.
- Coordinates core damage assessment with TSC-PET personnel.

Regulator Affairs Coordinator

- Reports to the Emergency Director.
- Provides guidance to the Emergency Director for license-based decisions and actions.
- Primary EOF contact for the NRC site response team.

Runner

- Reports to the Communications Director.
- Picks up and delivers copies of forms generated by EOF personnel needing either faxing to other facilities or duplication and distribution to EOF personnel.

Scheduling & Planning Manager

- Reports to the ED and Engineering Design and Site Services Manager.
- Provides support for items such as meals, transportation, temporary lodging, and other logistical issues for personnel within the ERO and other organizations responding to the facility.
- Purchases, leases, or contracts with suppliers for equipment, materials, or personnel necessary to support the emergency.

Security Director

- Reports to the Emergency Director.
- Maintains control of personnel entering and exiting the facility.
- Maintains control of unauthorized personnel within the owner controlled area at the Buchanan Office Building.
- Provides transportation to and from the plant as necessary.
- Arranges shift designations.

Telecommunications Personnel

- Reports to the Communications Director.
- Provide any communications equipment or repair/replacement necessary to support the emergency facilities.