

23224N

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# CONTROLLED DOCUMENT TRANSMITTAL

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Date: 05/03/2002

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Page: 1

**Description:**

ISSUE OF 1 EMERGENCY PLAN PROCEDURE (PMP)

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TSC	1*	3C	Include 1C Index Only
Unit 1 Control Room	29*	2C	
Unit 2 Control Room	29*	2C	
Visitor Center	25	1C	

**Transmitted Controlled Document Listing: (1)**

Document	Revision	Status	Title
PMP-2080-EPP-108	004	Approved	INITIAL DOSE ASSESSMENT

Controlled Document Transmittal Receipt and File Acknowledgement:

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**REVIEW AND APPROVAL TRACKING FORM**

<b>Procedure Information:</b>	
Number: <u>PMP-2080-EPP-108</u>	Rev. <u>4</u> Change: <u>0</u>
Title: <u>Initial Dose Assessment</u>	
<b>Category (Select One Only):</b>	
<input type="checkbox"/> Correction (Full Procedure)	<input checked="" type="checkbox"/> Change (Full Procedure) with Review of Change Only
<input type="checkbox"/> Correction (Page Substitution)	<input type="checkbox"/> Change (Page Substitution) with Review of Change Only
<input type="checkbox"/> Cancellation	<input type="checkbox"/> New Procedure or Change with Full Review
<input type="checkbox"/> Superseded (list superseding procedures): _____	
<b>Associated Configuration Impact Assessments:</b>	
Change Driver/CDI Tracking No(s): _____ <input checked="" type="checkbox"/> N/A	
<b>Required Reviews:</b>	
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<input type="checkbox"/> Chemistry <input type="checkbox"/> Training	<input type="checkbox"/> ALARA <input type="checkbox"/> Performance Assurance
<input type="checkbox"/> Maintenance <input type="checkbox"/> Work Control	<input checked="" type="checkbox"/> Bus. Services Proc Grp <input type="checkbox"/> Reactivity Mgmt Team
<input type="checkbox"/> NDM <input type="checkbox"/> _____	<input type="checkbox"/> Component Engineering <input type="checkbox"/> SPS (Safety & Health)
<input checked="" type="checkbox"/> Operations <input type="checkbox"/> _____	<input type="checkbox"/> Design Engineering <input type="checkbox"/> Surveillance Section
<input type="checkbox"/> PA/PV <input type="checkbox"/> _____	<input type="checkbox"/> Emerg Oper Proc Grp <input type="checkbox"/> System Engineering
<input type="checkbox"/> Reg Affairs <input type="checkbox"/> _____	<input type="checkbox"/> Environmental <input type="checkbox"/> _____
<input checked="" type="checkbox"/> RP <input type="checkbox"/> None Required	<input type="checkbox"/> ISI/IST Coordinator <input type="checkbox"/> None Required
<input checked="" type="checkbox"/> Cognizant Org Review: <u>Cindy Shafferius</u> Date: <u>4/11/02</u>	
<input checked="" type="checkbox"/> Technical Review: <u>BK Malloy</u> Date: <u>4/12/02</u>	
<b>Concurrence:</b>	
<input type="checkbox"/> Ops Mgr Concurrence: <u>N/A</u> Date: <u>  /  /  </u>	
<input checked="" type="checkbox"/> Owner Concurrence: <u>Cindy Shafferius for Paul Holland</u> Date: <u>4/12/02</u>	
<b>Package Check:</b>	
Updated Revision Summary attached? <input checked="" type="checkbox"/> Yes	
10 CFR 50.59 Requirements complete? Tracking No.: <u>2002-0639-00</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
Implementation Plan developed? (Ref. Step 3.4.18) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
Package Complete: <u>BK Malloy</u> Date: <u>4/12/02</u>	
<b>Approvals:</b>	
PORC Review Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                    Mtg. No.: <u>3939</u>	
Administrative Hold Status: <input type="checkbox"/> Released <input type="checkbox"/> Reissued <input checked="" type="checkbox"/> N/A                                    CR No.: _____	
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Expiration Date/Ending Activity <u>N/A</u> Effective Date: <u>5/3/02</u>	
<b>Periodic Review:</b>	
Periodic Review conducted? (Data Sheet 5 Complete) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Follow-up Actions:</b>	
Commitment Database Updated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	
NDM notified of new records or changes to records that could affect record retention? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	

<b>NDM Use Only</b>	NUCLEAR DOCUMENT MANAGEMENT SECTION  <b>MAY 03 2002</b>  CONTROLLED DOCUMENT	<b>Office Information For Form Tracking Only - Not Part of Form</b>
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		Page <u>1</u> of <u>4</u>

## REVISION SUMMARY

Number: PMP-2080-EPP.108 Revision: 04 Change: 00  
 Title: Initial Dose Assessment

Revision 4 incorporates the new State of Michigan EMD-32 notification forms and revision 7 to the Dose Assessment (DAP) computer program. Because revision 7 of DAP contains on line help, the amount of procedure detail relative to operation has been reduced.

Revision 4 also puts this procedure into the new format.

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2.0	Change: References section moved Reason: References have been moved to step 5. The reference were also updated to reference the requirements of the Emergency Plan and EPA-400-R-92-001 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.
3.0	Change: Responsibilities Reason: Added clarification of responsibilities. The SEC maintains responsibility for the implementation of this procedure and must approve all EMD-32 forms.
4.0	Change: Limitations and Precautions section deleted. Reason: Section is no longer required for PMP. The applicable limitations and precautions were moved to purpose and scope and are imbedded within the Details section of the procedure.
5.0	Change: Initial Conditions section deleted. Reason: Section is no longer required for PMP.
6.0	Change: Supplementals section deleted. Reason: The listing of supplemental attachments are now included in the Table of Contents of the procedure as Attachments. Attachment 1 was deleted.
7.0	Change: Instructions was renamed to Details Reason: Name changed to comply with PRC.002 format

## REVISION SUMMARY

Number: PMP-2080-EPP.108

Revision: 04

Change: 00

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Attachment 1	<p>Change: The attachment was deleted</p> <p>Reason: An Icon will be placed on the computers when the program is loaded on each computer. DAP provides on-line help to assist the user with its operation.</p>

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# REVISION SUMMARY

Number: PMP-2080-EPP.108 Revision: 04 Change: 00

Title: Initial Dose Assessment

Section or Step	Change/Reason For Change
Attachment 2	Change: Attachment 2 was split into attachment 1 and 2 of revision 4. Reason: Attachment 1 of Rev 4 provides instructions for additional methods of obtaining meteorological data should the primary methods be unavailable. Attachment 2 of Rev 4 contains additional methods for determining Pasquill Category should the primary method on the PPC/RDR be unavailable.

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<b>Initial Dose Assessment</b>			
<b>Information</b>			Effective Date: <u>5/3/02</u>
<u>P. E. Holland</u> Writer	<u>P. E. Holland</u> Owner	<u>Emergency Planning</u> Cognizant Organization	

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**1 PURPOSE AND SCOPE**

- 1.1 This procedure provides instructions for performing initial dose assessment for releases of radioactive material from the plant.
- 1.2 Use of this procedure should be limited to actual emergencies and emergency drills.

**2 DEFINITIONS AND ABBREVIATIONS**

<b>Term</b>	<b>Meaning</b>
DAP	Dose Assessment Computer Program
EMD-32a	State of Michigan Emergency Notification form (Nuclear Plant Event Notification)
EMD-32b	State of Michigan Technical Notification form (Nuclear Plant Event Technical Data)
PAR	Protective Action Recommendation
PPC	Plant Process Computer
RMS	Radiation Monitoring System
SEC	Site Emergency Coordinator

**3 RESPONSIBILITIES**

- 3.1 The SEC is responsible for the implementation of this procedure.
- 3.2 The SEC must review and approve all EMD-32a and EMD-32b forms prior to transmission to Berrien County or the State of Michigan. **This is a non-delegable responsibility.**

**Initial Dose Assessment****4 DETAILS**

**NOTE:** DAP contains extensive on line help. Help for any particular subject may be obtained by placing the mouse over the object in question. If help is available it will appear at the bottom of the screen.

**NOTE:** Dose assessment projections may only be performed using the DAP. **IF** projected doses are **NOT** available and a PAR is necessary, **THEN** use the default PAR in PMP-2080-EPP-100.

**4.1 Determine which forms are required.****4.1.1 EMD-32a, Nuclear Plant Event Notification.**

- Is only transmitted to the State/County within 15 minutes of a change to the emergency classification or PAR.
- Must include an EMD-32b, Nuclear Plant Event Technical Data Form if the emergency classification is General Emergency and the PAR is based on dose calculations.

**4.1.2 EMD-32b, Nuclear Plant Event Technical Data Form.**

- Required to be transmitted to the State/County within 30-minute intervals of the last EMD-32b or EMD-32a form.

**4.2 Obtain meteorological data from the PPC. If the PPC is not available, Attachment 1, Meteorological Data, contains additional sources of meteorological data and Attachment 2, Pasquill Category, provides for Pasquill Category (Stability Class) determinations.**

**NOTE:** Sources are listed in order of preference.

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

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4.3 Obtain RMS radiological data from one of the following sources:

**NOTE:** Sources are listed in order of preference.

- PPC
- RMS Display Terminals
- Direct readings from the Local Area Data Acquisition Modules

4.4 Determine the Unit 1 and Unit 2 reactor shutdown status and the date and time of shutdown as applicable.

4.5 Determine the Coolant Type.

Coolant Type	Containment High Radiation Monitoring Reading
Normal Coolant	< 10 R/hr
Cladding Damage	< 1000 R/hr
Fuel Melt	> = 1000 R/hr

4.6 Determine whether an actual or potential release is occurring.

4.6.1 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 off-site radiation readings indicate a release is in progress,

- OR -

- Indications exist that an unmonitored release may be occurring.

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

**Initial Dose Assessment**

- 4.7 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.
- 4.8 Enter the data into the Dose Assessment Program.

**NOTE:** The classifications may change based on the results of the assessment being run and must be updated accordingly prior to submitting the EMD-32a or EMD-32b forms for transmittal to the state or county.

- 4.9 **IF** necessary, **THEN** update the current classification and Initiating Conditions on the EMD-32a and EMD-32b.
- 4.10 Submit the EMD-32a and/or EMD-32b to the SEC.
- 4.11 The SEC approves the EMD-32 form(s).
- 4.12 Transmit the EMD-32 form(s) to the Berrien County Sheriff's Department and the State of Michigan.

**5 REFERENCES****5.1 Use References:**

- 5.1.1 Dose Assessment (DAP) Computer Program
- 5.1.2 EMD-32a, Nuclear Plant Event Notification
- 5.1.3 EMD-32b, Nuclear Plant Event Technical Data Form

**5.2 Writing References:****5.2.1 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

**Initial Dose Assessment**

- c. Meteorology and Atomic Energy 1968, U. S. Atomic Energy Commission
- d. Evacuation Time Estimates for the D. C. Cook Nuclear Plant Plume Exposure Emergency Planning Zone HMM Associates July 1992

**5.2.2 General References**

- a. Michigan Emergency Preparedness Plan
- b. Berrien County Emergency Preparedness Plan

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Attachment 1	Meteorological Data		Pages: 7 - 8

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

**1 IF all of 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 is greater than the Lake Michigan temperature,
- Wind speed on the shoreline tower is  $\leq 13.4$  Miles per Hour,
- Pasquill category is A, B, C, or D, **AND**
- Shoreline tower wind direction is **FROM** 205° to 23° (i.e., Wind is from the lake)

**THEN** consider lake breezes in the dose assessment process.

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

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<b>Attachment 1</b>	<b>Meteorological Data</b>		<b>Pages: 7 - 8</b>

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 plant 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

$\Delta T^{\circ}F = T @ 60m - T @ 10m$ (Z = 50 Meters)	Pasquill Category	$\Delta T^{\circ}C = T @ 60m - T @ 10m$ (Z = 50 Meters)
$\Delta T^{\circ}F \leq -1.8$	A	$\Delta T^{\circ}C \leq -1.0$
$-1.8 < \Delta T^{\circ}F \leq -1.6$	B	$-1.0 < \Delta T^{\circ}C \leq -0.9$
$-1.6 < \Delta T^{\circ}F \leq -1.4$	C	$-0.9 < \Delta T^{\circ}C \leq -0.8$
$-1.4 < \Delta T^{\circ}F \leq -0.5$	D	$-0.8 < \Delta T^{\circ}C \leq -0.3$
$-0.5 < \Delta T^{\circ}F \leq +1.3$	E	$-0.3 < \Delta T^{\circ}C \leq +0.7$
$+1.3 < \Delta T^{\circ}F \leq +3.6$	F	$+0.7 < \Delta T^{\circ}C \leq +2.0$
$+3.6 < \Delta T^{\circ}F$	G	$+2.0 < \Delta T^{\circ}C$

1.3 Standard Deviation of the Horizontal Wind Direction (STD)

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

1.4 Murray and Trettle

- See Attachment 1, 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

Wind Speed @ 10 meters Miles per Hour (Mph)	Day			Night	
	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

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Number: <u>PMP-2080-EPP-108</u>	Rev. <u>4</u> Change: <u>0</u>
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<input type="checkbox"/> Correction (Full Procedure)	<input checked="" type="checkbox"/> Change (Full Procedure) with Review of Change Only
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<input checked="" type="checkbox"/> Cognizant Org Review: <u>Cindy Shefferius</u> Date: <u>4/11/02</u>	
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<b>Concurrence:</b>	
<input type="checkbox"/> Ops Mgr Concurrence: <u>N/A</u> Date: <u>   /   /   </u>	
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<b>Package Check:</b>	
Updated Revision Summary attached? <input checked="" type="checkbox"/> Yes	
10 CFR 50.59 Requirements complete? Tracking No.: <u>2002-0639-00</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
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Section or Step	Change/Reason For Change
Attachment 2	Change: Attachment 2 was split into attachment 1 and 2 of revision 4. Reason: Attachment 1 of Rev 4 provides instructions for additional methods of obtaining meteorological data should the primary methods be unavailable. Attachment 2 of Rev 4 contains additional methods for determining Pasquill Category should the primary method on the PPC/RDR be unavailable.

**Office Information For Form Tracking Only - Not Part of Form**

This is a free-form as called out in PMP-2010-PRC-002, Procedure Correction, Change, and Review, Rev. 9.

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<b>Information</b>			Effective Date: <u>5/3/02</u>
P. E. Holland Writer	P. E. Holland Owner	Emergency Planning Cognizant Organization	

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**1 PURPOSE AND SCOPE**

- 1.1 This procedure provides instructions for performing initial dose assessment for releases of radioactive material from the plant.
- 1.2 Use of this procedure should be limited to actual emergencies and emergency drills.

**2 DEFINITIONS AND ABBREVIATIONS**

<b>Term</b>	<b>Meaning</b>
DAP	Dose Assessment Computer Program
EMD-32a	State of Michigan Emergency Notification form (Nuclear Plant Event Notification)
EMD-32b	State of Michigan Technical Notification form (Nuclear Plant Event Technical Data)
PAR	Protective Action Recommendation
PPC	Plant Process Computer
RMS	Radiation Monitoring System
SEC	Site Emergency Coordinator

**3 RESPONSIBILITIES**

- 3.1 The SEC is responsible for the implementation of this procedure.
- 3.2 The SEC must review and approve all EMD-32a and EMD-32b forms prior to transmission to Berrien County or the State of Michigan. **This is a non-delegable responsibility.**

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#### 4 DETAILS

**NOTE:** DAP contains extensive on line help. Help for any particular subject may be obtained by placing the mouse over the object in question. If help is available it will appear at the bottom of the screen.

**NOTE:** Dose assessment projections may only be performed using the DAP. **IF** projected doses are **NOT** available and a PAR is necessary, **THEN** use the default PAR in PMP-2080-EPP-100.

4.1 Determine which forms are required.

4.1.1 EMD-32a, Nuclear Plant Event Notification.

- Is only transmitted to the State/County within 15 minutes of a change to the emergency classification or PAR.
- Must include an EMD-32b, Nuclear Plant Event Technical Data Form if the emergency classification is General Emergency and the PAR is based on dose calculations.

4.1.2 EMD-32b, Nuclear Plant Event Technical Data Form.

- Required to be transmitted to the State/County within 30-minute intervals of the last EMD-32b or EMD-32a form.

4.2 Obtain meteorological data from the PPC. If the PPC is not available, Attachment 1, Meteorological Data, contains additional sources of meteorological data and Attachment 2, Pasquill Category, provides for Pasquill Category (Stability Class) determinations.

**NOTE:** Sources are listed in order of preference.

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

4.3 Obtain RMS radiological data from one of the following sources:

<b>NOTE:</b> Sources are listed in order of preference.
---

- PPC
- RMS Display Terminals
- Direct readings from the Local Area Data Acquisition Modules

4.4 Determine the Unit 1 and Unit 2 reactor shutdown status and the date and time of shutdown as applicable.

4.5 Determine the Coolant Type.

Coolant Type	Containment High Radiation Monitoring Reading
Normal Coolant	< 10 R/hr
Cladding Damage	< 1000 R/hr
Fuel Melt	> = 1000 R/hr

4.6 Determine whether an actual or potential release is occurring.

4.6.1 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 off-site radiation readings indicate a release is in progress,

- OR -

- Indications exist that an unmonitored release may be occurring.

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

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- 4.7 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.
- 4.8 Enter the data into the Dose Assessment Program.

**NOTE:** The classifications may change based on the results of the assessment being run and must be updated accordingly prior to submitting the EMD-32a or EMD-32b forms for transmittal to the state or county.

- 4.9 IF necessary, THEN update the current classification and Initiating Conditions on the EMD-32a and EMD-32b.
- 4.10 Submit the EMD-32a and/or EMD-32b to the SEC.
- 4.11 The SEC approves the EMD-32 form(s).
- 4.12 Transmit the EMD-32 form(s) to the Berrien County Sheriff's Department and the State of Michigan.

## 5 REFERENCES

### 5.1 Use References:

- 5.1.1 Dose Assessment (DAP) Computer Program
- 5.1.2 EMD-32a, Nuclear Plant Event Notification
- 5.1.3 EMD-32b, Nuclear Plant Event Technical Data Form

### 5.2 Writing References:

#### 5.2.1 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

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- c. Meteorology and Atomic Energy 1968, U. S. Atomic Energy Commission
- d. Evacuation Time Estimates for the D. C. Cook Nuclear Plant Plume Exposure Emergency Planning Zone HMM Associates July 1992

**5.2.2 General References**

- a. Michigan Emergency Preparedness Plan
- b. Berrien County Emergency Preparedness Plan

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

**1 IF all of 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 is greater than the Lake Michigan temperature,
- Wind speed on the shoreline tower is  $\leq 13.4$  Miles per Hour,
- Pasquill category is A, B, C, or D, **AND**
- Shoreline tower wind direction is **FROM** 205° to 23° (i.e., Wind is from the lake)

**THEN** consider lake breezes in the dose assessment process.

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

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

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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

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

1.3 Standard Deviation of the Horizontal Wind Direction (STD)

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

1.4 Murray and Trettle

- See Attachment 1, 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

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