

57555N

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CONTROLLED DOCUMENT TRANSMITTAL

Transmittal#: 57555N Effective Date: 04/05/2004 Creator: TRACY NELSON Page: 1

Description: ISSUE OF 1 PMP:EPP PROCEDURE

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 **PMP-2080-EPP-108**

Revision: 005

AEP Status: Approved

Title: INITIAL DOSE ASSESSMENT

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REVIEW AND APPROVAL TRACKING FORM

Procedure Information:	
Number: <u>PMP-2080-EPP-108</u>	Rev. <u>5</u> Change: <u>0</u>
Title: <u>Initial Dose Assessment</u>	
Category (Select One Only):	
<input type="checkbox"/> Correction (Full Procedure)	<input checked="" type="checkbox"/> Change (Full Procedure) with Review of Change Only
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<input type="checkbox"/> Cancellation	<input type="checkbox"/> New Procedure or Change with Full Review
<input type="checkbox"/> Superseded (list superseding procedures): _____	
Associated Configuration Impact Assessments:	
Change Driver/CDI Tracking No(s): _____ <input checked="" type="checkbox"/> N/A	
Required Reviews:	
Cross-Discipline Reviews:	Programmatic Reviews:
<input type="checkbox"/> Chemistry	<input type="checkbox"/> ALARA
<input type="checkbox"/> Training	<input type="checkbox"/> Reactivity Mgmt Team
<input type="checkbox"/> Maintenance	<input type="checkbox"/> Component Engineering
<input type="checkbox"/> Work Control	<input type="checkbox"/> SPS (Safety & Health)
<input type="checkbox"/> NDM	<input type="checkbox"/> Design Engineering
<input type="checkbox"/> Operations	<input type="checkbox"/> Surveillance Section
<input type="checkbox"/> Emerg Oper Proc Grp	<input type="checkbox"/> System Engineering
<input type="checkbox"/> PA/PV	<input type="checkbox"/> SOMS Administrator
<input type="checkbox"/> Reg Affairs	<input type="checkbox"/> _____
<input type="checkbox"/> RP	<input checked="" type="checkbox"/> None Required
<input checked="" type="checkbox"/> None Required	
<input checked="" type="checkbox"/> Cognizant Org Review: <u>Jeff Smith</u>	Date: <u>2/24/04</u>
<input checked="" type="checkbox"/> Technical Review: <u>Danell Schroeder</u>	Date: <u>2/25/04</u>
Concurrence:	
<input type="checkbox"/> Ops Director Concurrence: <u>N/A</u>	Date: <u>1/1</u>
Package Check:	
Updated Revision Summary attached?	<input checked="" type="checkbox"/> Yes
10 CFR 50.59 Requirements complete? Tracking No.: _____	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Implementation Plan developed? (Ref. Step 3.4.17)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Package Complete: <u>Cindy Shaffner</u>	Date: <u>3/4/04</u>
Approvals:	
PORC Review Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Mtg. No.: <u>4074</u>
Administrative Hold Status: <input type="checkbox"/> Released <input type="checkbox"/> Reissued <input checked="" type="checkbox"/> N/A	CR No.: _____
Approval Authority Review/Approval: <u>CA for SM</u>	Date: <u>4/1/04</u>
Expiration Date/Ending Activity: <u>N/A</u>	Effective Date: <u>4/15/04</u>
Periodic Review:	
Periodic Review conducted? (Data Sheet 5 Complete)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Follow-up Actions:	
Commitment Database update requested in accordance with PMP-7100-CMP-001?	<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

NDM Use Only CONTROLLED DOCUMENT	NRC EAR DOCUMENT MANAGEMENT SECTION APR 05 2004	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. 12, Data Sheet 1, Review and Approval Tracking Form.
		Page <u>1</u> of <u>2</u>

REVISION SUMMARY

Number: PMP-2080-EPP-108 Revision: 5 Change: 0
 Title: Initial Dose Assessment

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Entire	<p>Change: This revision implements changes to an emergency plan implementing procedure, therefore a 50.59 review is not required.</p> <p>Reason: This process is wholly controlled under 10.CFR 50.54(q) and plant procedure RMA-2080-EPA-008, Emergency Plan Management.</p>
Section 2	<p>Change: Added acronyms and meanings for SM and TSC.</p> <p>Reason: These acronyms are used in this revision.</p>
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Step 4.5	<p>Change: Added the lower range radiation monitoring reading to the Cladding Damage coolant type.</p> <p>Reason: Lower limit was not previously specified.</p>
Step 4.10 and 4.11	<p>Change: Allowed for submittal/approval of EMD-32 forms by the SM.</p> <p>Reason: Allows for SM approval of forms after the TSC has been activated (under SEC direction), but prior to EOF activation.</p>
Attachment 1, Step 1.1.1	<p>Change: Added statement that meteorological data may be obtained from the Midas Data link on the Operations Department web page.</p> <p>Reason: Provide for alternate MIDAS data location.</p>

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Information			Effective Date: 4/5/04
C. J. Graffenius Writer	S. M. Partin 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

Term	Meaning
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
SM	Shift Manager
TSC	Technical Support Center

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. Upon TSC activation, the SEC may direct the control room (Shift Manager) to retain notification duties in accordance with the Emergency Plan and RMT-2080-TSC-001, Activation and Operation of the TSC, until relieved of this function by the Emergency Operations Facility.

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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 or from the intranet on the Operations Department web page using the "Midas Data" link. 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:

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	> 10 R/hr - < 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 SM or SEC, as applicable

4.11 The SM or SEC approves the EMD-32 form(s), as applicable.

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

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- b. EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
- 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 ≤ 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 or "Midas Data" link on intranet Operations Department web page (<http://cnp/ops>).

- 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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Attachment 1	Meteorological Data	Pages: 7 - 8	

1.1.2 Manual Acquisition of Meteorological Tower Data

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

1.1.3 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	
$15^{\circ} - 35^{\circ}$	Slight	Slight	Slight	Slight	Slight
$35^{\circ} - 60^{\circ}$	Moderate	Slight	Slight	Slight	Slight
$> 60^{\circ}$	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

REVIEW AND APPROVAL TRACKING FORM

Procedure Information:			
Number:	<u>PMP-2080-EPP-108</u>	Rev.	<u>5</u>
		Change:	<u>0</u>
Title:	<u>Initial Dose Assessment</u>		
Category (Select One Only):			
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<input type="checkbox"/> Reg Affairs	_____	<input type="checkbox"/> ISI/IST Coordinator	_____
<input type="checkbox"/> RP	<input checked="" type="checkbox"/> None Required	<input type="checkbox"/> Performance Assurance	<input checked="" type="checkbox"/> None Required
<input checked="" type="checkbox"/> Cognizant Org Review: _____		Date: <u>2/24/04</u>	
<input checked="" type="checkbox"/> Technical Review: _____		Date: <u>2/25/04</u>	
Concurrence:			
<input type="checkbox"/> Ops Director Concurrence: _____		Date: <u>1/1</u>	
Package Check:			
Updated Revision Summary attached?		<input checked="" type="checkbox"/> Yes	
10 CFR 50.59 Requirements complete? Tracking No.: _____		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	
Implementation Plan developed? (Ref. Step 3.4.17)		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	
Package Complete: _____		Date: <u>3/14/04</u>	
Approvals:			
PORC Review Required: _____		Mtg. No.: <u>4074</u>	
Administrative Hold Status: _____		CR No.: _____	
Approval Authority Review/Approval: _____		Date: <u>4/1/04</u>	
Expiration Date/Ending Activity _____		Effective Date: <u>4/15/04</u>	
Periodic Review:			
Periodic Review conducted? _____		(Data Sheet 5 Complete) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Follow-up Actions:			
Commitment Database update requested in accordance with PMP-7100-CMP-001?		<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	

<p style="text-align: center;">NUCLEAR DOCUMENT MANAGEMENT SECTION</p> <p style="font-size: 24pt; text-align: center;">APR 05 2004</p> <p style="text-align: center;">CONTROLLED DOCUMENT</p>	<p>Office Information For Form Tracking Only - Not Part of Form</p> <p>This form is derived from the information in PMP-2010-PRC-002, Procedure Correction, Change, and Review, Rev. 12, Data Sheet 1, Review and Approval Tracking Form.</p> <p style="text-align: right;">Page <u>1</u> of <u>2</u></p>
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Information			Effective Date: 4/5/04
<u>C. J. Graffenius</u> Writer	<u>S. M. Partin</u> Owner	<u>Emergency Planning</u> Cognizant Organization	

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Attachment 2: Pasquill Category.....9

1 PURPOSE AND SCOPE

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NOTE: Sources are listed in order of preference.

- PPC
- RMS Display Terminals
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4.5 Determine the Coolant Type.

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

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- OR -
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Initial Dose Assessment

4.7 Determine the Projected Duration of the Release.

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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.

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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

Initial Dose Assessment

- b. EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
- 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 ≤ 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 or "Midas Data" link on intranet Operations Department web page (<http://cnp/ops>).

- 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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1.1.2 Manual Acquisition of Meteorological Tower Data

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

1.1.3 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

$\Delta T ^\circ F = T @ 60m - T @ 10m$ (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