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249 - 249 - EOF DOSE CALCULATOR

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## MET/VENT DATA ACQUISITION OPTIONS

The following are sources of meteorological and ventilation data at Susquehanna SES:

### A. ACQUISITION OF MET/VENT DATA FROM THE PICSY TERMINAL

1. From the SSES LOGO display, select **E-PLAN MENU** or type **EPM** and **[ENTER]**.
2. All required meteorological and ventilation (MET/VENT) inputs for the MIDAS dose projections can be obtained by selecting the MET/VENT DATA display option on the E-PLAN menu.
  - a. Vent and Primary Met Tower Data is displayed on page 1 of this display.
  - b. Use the **PAGE FORWARD** command if the Back-up Tower data is required.
  - c. Should neither the Primary or Back-up Tower be available, obtain the Downriver Tower data as follows:
    - 1) Click on the **E-PLAN MENU** button at the top right hand corner of the MET/VENT DATA screen.
    - 2) On the E-Plan menu select and click on the **MET DATA** screen.
    - 3) Obtain the Downriver Tower wind speed (Point ID VMS05B), wind direction (Point ID VMX09B), and sigma theta (Point ID VMX10B).
    - 4) Return to the E-Plan menu by clicking on the **E-PLAN MENU** button at the bottom right hand corner of the MET DATA screen.
  - d. Other options – see Step 6 below.
3. If the Primary Met Tower  $\Delta T$  data is not available, determine the wind speed corrected stability class as follows:
  - a. Determine the initial (uncorrected) stability class using the measured value of sigma theta and the Supplemental Meteorological Information Table 1 (or page 2 of the PICSY screen).
  - b. Determine the wind speed corrected stability classification using the initial classification, the measured wind speed, and, as appropriate, either Table 2 or Table 3.

4. The PICSY QUALITY CODES for the display colors are as follows:

<b>YELLOW:</b>	<b>DATA ACCEPTABLE</b>
<b>RED:</b>	<b>DATA EXCEEDS WARNING LIMIT</b>
<b>MAGENTA:</b>	<b>DATA EXCEEDS ALARM SETPOINT</b>
<b>WHITE:</b>	<b>DATA SUSPECT</b>

5. If a hard copy printout of the information is required you may either:

a. Select the PRINT option using the pull down menu (screen copy takes approximately 3 minutes to complete); or

b. Initiate the MET/VENT DATA LOG option as follows:

1) On the E-PLAN menu, select the FREE FORMAT LOG MENU.

2) To activate the TSC log, press [F1], [22], and [ENTER].

To activate the EOF log, press [F1], [9], and [ENTER].

**NOTE: Be sure to read the log description because there are 2 logs for the TSC and 2 logs for the EOF.**

3) The log will start printing at the next quarter hour.

4) To deactivate the TSC log, press [F3], [22], and [ENTER].

To deactivate the EOF log, press [F3], [9], and [ENTER].

6. If historical MET/VENT information is required, refer to the following instructions:

a. At command line, type: GD ^METVENT1 and [ENTER].

b. Group point display for that display file will come up. Press the [F3] key for history. (See bottom of screen for F key menu.) A dialog box will appear.

c. The work file name to be used is ARCHIVE.D, which is the default for that field.

d. Enter the desired retrieval time. (Enter 15 for the delta time to receive a fifteen-minute period. Click on OK.)

e. Group point display will return with 1 or 2 point values.

- f. Press the **[F4]** key if you want to step slowly through the data. Press the **[F5]** key if you want to step quickly through the data. (See bottom of screen for F key menu for more options.)
  - g. The group point display will return to real time when history is complete. A message at the top of the screen will alert you that it is returning to real time.
6. To exit the menu, select the **[ESC]** key.
- B. Site-specific meteorological information can be obtained by contacting either ABS Consulting or the National Weather Service (NWS).

1. ABS Consulting

ABS Consulting is the primary meteorological contractor for the Susquehanna Steam Electric Station (SSES). ABS Consulting has the ability to interrogate the primary and backup meteorological towers on a real-time basis and provide short and long-term weather forecasts for the site and surrounding area.

**ABS Consulting provides this emergency service to PPL ONLY during normal working hours.** The SSES Project Manager's name, phone number and mailing address are as follows:

ABS Consulting Mark Abrams  (301) 907-9100 (301) 907-0050 (Fax)  ABS Consulting Suite 620 East 7315 Wisconsin Avenue Bethesda, MD 20814
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2. NATIONAL WEATHER SERVICE

The National Weather Service's (NWS) primary meteorological support responsibility for a radiological emergency at SSES resides with the NWS office at Binghamton, New York. In the event the Binghamton office is unable to provide this support, the designated backup is the NWS office in State College, Pennsylvania.

The role of the local NWS office is to provide weather information and forecasts in support of emergency response activities at SSES. The NWS can be

consulted over the telephone if data interpretations, assessment, or forecasting assistance are needed.

This information will include the following:

- Forecasts at current time and 6 hours of:
  - a. 10-meter and 60-meter wind speed and wind direction,
  - b. Precipitation rate in inches per 15 minutes, and,
  - c. Boundary layer atmospheric stability described as **STABLE, UNSTABLE, or NEUTRAL.**
- Estimates of current 10-meter and 60-meter wind speed and wind direction in the event of complete loss of onsite and offsite meteorological instrumentation.
- General weather forecast from current time to 48 hours with special emphasis on significant weather occurrences such as major changes in wind speed, wind direction or synoptic weather patterns.
- Periodic weather updates at time intervals dictated by the on-going weather and emergency situation.

**NOTE: The NWS should ONLY be contacted when meteorological support from ABS Consulting is not available (i.e., weekends, holidays, and during the overnight hours).**

Whenever contacting the NWS, be sure to provide the following information:

- Name, Title, Facility, and Location
- Reason for the call
- Status of the Emergency
- Return telephone number

**The following telephone numbers are UNLISTED and should only be used for EMERGENCY situations.**

<b>PRIMARY CONTACT</b>
<b>- NWS EMERGENCY METEOROLOGICAL SUPPORT OFFICE</b>
<p>National Weather Service Office Binghamton Regional Airport 32 Dawes Drive Johnson City, NY 13795</p> <p>(607) 798-6625 (607) 729-7629 (607) 798-6624 (Fax)</p>

<b>BACKUP CONTACT</b>
<b>NWS EMERGENCY METEOROLOGICAL SUPPORT OFFICE</b>
<p>National Weather Service Office 227 W. Beaver Avenue, Suite 402 State College, PA 16801</p> <p>(814) 237-1152 (814) 237-1153 (814) 234-9703 (Fax)</p>

## PLANT COMPUTER METEOROLOGICAL DATA POINT IDENTIFIERS

METEOROLOGICAL PARAMETER	POINT ID*	UNITS	AVERAGING PERIOD
<b>PRIMARY TOWER - east of the plant, 300' high red/white tower.</b>			
10m Wind Direction	vma03	degrees	15 minutes
10m Wind Speed	vma06	mph	15 minutes
Delta T "A"	vma01	°C/50m	15 minutes
Delta T "B"	vma02	°C/50m	15 minutes
60m Wind Direction	vma04	degrees	15 minutes
60m Wind Speed	vma07	mph	15 minutes
10m Sigma Theta	vma10	degrees	15 minutes
60m Sigma Theta	vmx24	degrees	15 minutes
Precipitation Rate	vma09	in/hr	15 minutes
Ambient Temperature	vmt08b	°F	1 hour
<b>BACKUP TOWER - across from the SSES Learning Center.</b>			
10m Wind Direction	vma05	degrees	15 minutes
10m Wind Speed	vma08	mph	15 minutes
10m Sigma Theta	vma12	degrees	15 minutes
<b>DOWNRIVER TOWER - on Route 93 just east of Nescopeck.</b>			
10m Wind Direction	vmx09b	degrees	2 minutes**
10m Wind Speed	vms05b	mph	2 minutes**
10m Sigma Theta	vmx10b	degrees	2 minutes**

\* Letters are given here in lower case to differentiate the letter o from the number 0.

# SUPPLEMENTARY METEOROLOGICAL INFORMATION TABLES

TABLE 1

ATMOSPHERIC STABILITY CLASSIFICATION					
Stability Class		Delta Temperature (°C/50m)	(Alternate) Sigma Theta (degrees)	Plume Width @ 10 miles (miles)	% of Hrs at SSES
Code	Title				
A	Very Unstable	≤-.95	≥22.5	5.7	6
B	Unstable	-.94 to -.85	17.5 to 22.4	4.3	3
C	Slightly Unstable	-.84 to -.75	12.5 to 17.4	3.3	4
D	Neutral	-.74 to -.25	7.5 to 12.4	2.3	35
E	Slightly Stable	-.24 to .75	3.8 to 7.4	1.6	32
F	Stable	.76 to 2.0	2.1 to 3.7	1.1	12
G	Very Stable	>2.0	<2.1	.75	8

TABLE 2

## DAYTIME

(08:00 to 18:00)

Initial Stability Class/ Wind Speed (MPH)	FINAL VALUE
<b>A</b>	
Wind Speed < 7	A
7 ≤ Wind Speed < 9	B
9 ≤ Wind Speed < 13	C
Wind Speed ≥ 13	D
<b>B</b>	
Wind Speed < 9	B
9 ≤ Wind Speed < 13	C
Wind Speed ≥ 13	D
<b>C</b>	
Wind Speed < 13	C
Wind Speed ≥ 13	D
<b>D, E, F, G</b>	
Any wind speed.	D

TABLE 3

## NIGHTTIME

(18:00 to 08:00)

Initial Stability Class/ Wind Speed (MPH)	FINAL VALUE
<b>A</b>	
Wind Speed < 6	F
6 ≤ Wind Speed < 8	E
Wind Speed ≥ 8	D
<b>B</b>	
Wind Speed < 5	F
5 ≤ Wind Speed < 7	E
Wind Speed ≥ 7	D
<b>C</b>	
Wind Speed < 5	E
Wind Speed ≥ 5	D
<b>D</b>	
Any wind speed.	D
<b>E</b>	
Wind Speed < 11	E
Wind Speed ≥ 11	D
<b>F,G</b>	
Wind Speed < 7	F
7 ≤ Wind Speed < 11	E
Wind Speed ≥ 11	D

Example: If wind speed is 9 mph and sigma theta is 18 degrees @ 10 a.m., the initial stability class from Table 1 is "B" and the wind speed corrected stability class from Table 2 is "C".



**TABLE 4**

<b>WIND SECTORS AND DISTANCES</b>						
<b>Wind From</b>		<b>Affected Sector</b>	<b>Affected EPB* Distance (mi)</b>	<b>On-Site Team Distance (mi)</b>	<b>Site Boundary Distance (mi)</b>	<b>% of Hrs Sector Affected SSES</b>
<b>Degrees</b>	<b>Sector</b>					
348 - 11	N	S	0.34	0.25	0.38	6
12 - 33	NNE	SSW	0.34	0.37	0.39	9
34 - 56	NE	SW	0.34	0.33	0.61	12
57 - 78	ENE	WSW	0.34	0.39	1.22	11
79 - 101	E	W	0.34	0.37	1.03	6
102 - 123	ESE	WNW	0.34	0.41	0.61	4
124 - 146	SE	NW	0.34	0.35	0.66	4
147 - 168	SSE	NNW	0.34	0.29	0.59	4
169 - 191	S	N	0.34	0.29	0.59	5
192 - 213	SSW	NNE	0.34	0.39	0.78	7
214 - 236	SW	NE	0.34	0.42	0.58	11
237 - 258	WSW	ENE	0.34	0.52	0.49	7
259 - 281	W	E	0.34	0.45	0.48	4
282 - 303	WNW	ESE	0.34	0.18	0.50	3
304 - 326	NW	SE	0.34	0.20	0.43	3
326 - 348	NNW	SSE	0.34	0.20	0.41	5

\* EPB distances established at Exclusion Area Boundary distance of 1800 ft.

## MIDAS PAR ACTION LEVELS

**NOTIFY**

**EVACUATE**

### EPB PROJECTED DOSES

mrem

TEDE:

**100**

**1000**

Thyroid CDE:

**500**

**5000**

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Notify DAST and/or DASU

**ASAP**

**IMMEDIATE**