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PLANT OPERATING MANUAL

VOLUME XIII

PLANT EMERGENCY PROCEDURE

UNIT
0



OPEP-03.4.7

**SELECT
DISTRIBUTION**

**AUTOMATION OF OFF-SITE DOSE PROJECTION
PROCEDURES**

REVISION 13

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Sponsor	<u>Teresa Gildersleeve-Thompson</u>	<u>02/08/00</u>
		Date
Approval	<u>Mike Aford</u>	<u>2/9/00</u>
	Supervisor - Emergency Preparedness	Date

REVISION SUMMARY

Revision 13 of OPEP-03.4.7 consists of:

- Note in Section 5.1 concerning date changes at midnight deleted. The problem identified in the note has been corrected in the program.
- Instructions in Section 5.1.1 (2) for initiating the CPLDOSE program in the EOF changed to reflect a computer upgrade in the EOF.
- Deletion of CAUTION for Step 5.1.4 prohibiting the use of spaces when entering data. The space key no longer functions for data entry, eliminating the problem.
- Deletion of references in Section 5.1.4 and 5.1.5 to not entering shutdown date and time data and replacement with a CAUTION requiring a shutdown date and time with the added instruction that if the reactor is not shutdown, or this is a spent fuel accident, to enter the current date and time. This reflects the latest revision requirements of the CPLDOSE program.
- Addition of a Records section to the procedure.

LIST OF EFFECTIVE PAGES

<u>Page(s)</u>	<u>Revision</u>
1-25	13

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1.0 PURPOSE

The purpose of this procedure is to provide instruction for the performance of off-site dose calculations using the CPLDOSE software program. CPLDOSE software is maintained on the STA computer in the Control Room, Unit 1 and Unit 2 Reactor Operator computers and the Dose Projection computer in Room 128 of the Emergency Operations Facility. The CPLDOSE program is designed to provide off-site radiological dose projections based on real-time meteorological data and actual plant conditions during accident situations. The accident conditions designed into the CPLDOSE code, that are associated with the reactor plant, assume an increasing accident severity beginning with a breach of the reactor coolant pressure boundary and progress through severe core melt conditions. An additional scenario situation included in the CPLDOSE code is based on a spent fuel accident involving a dropped spent fuel bundle.

The intent of this procedure is to enable a rapid determination of the severity of a plant emergency involving the potential or actual breach of the reactor coolant pressure boundary with variable degrees of core damage and facilitate a projection of the potential associated off-site consequence. The CPLDOSE program provides Total Effective Dose Equivalent (TEDE) and thyroid Committed Dose Equivalent (CDE) projections.

This procedure is applicable to the Control Room staff as an initial step subsequent to the recognition of accident conditions and the realization that an off-site release could occur, is in progress, or has already occurred. The Dose Projection Team will assume responsibility for the implementation of this procedure when the Emergency Operations Facility is activated. The Dose Projection Team will then assist the Radiological Controls Director and Radiological Controls Manager in the determination and evaluation of projected off-site consequences.

Operations Control Room staff and Dose Projection Coordinators are trained in the implementation of the CPLDOSE program. For the purposes of this procedure, it is assumed that all personnel implementing this procedure are sufficiently proficient in standard computer manipulations to successfully initiate the CPLDOSE software program from a DOS, menu driven, or Windows format and it is not the intent of this procedure to provide detailed guidance for computer manipulations.

2.0 REFERENCES

- 2.1 EPA-400-R-92-001, "Manual of Protective Action Guidelines and Protective Actions for Nuclear Incidents," USEPA, May 1992
- 2.2 OPEP Appendix A, Emergency Response Resources
- 2.3 OPEP-02.6.21, Emergency Communicator
- 2.4 OPEP-03.6.1, Release Estimates Based Upon Stack/Vent Readings
- 2.5 OPEP-02.6.20, Dose Projection Coordinator
- 2.6 CPLDOSE Code User Manual

3.0 RESPONSIBILITIES

- 3.1 Operations personnel under the direction of the Site Emergency Coordinator are responsible for performing Steps 5.1.1 through 5.1.4 of this procedure until the Dose Projection Team is activated in the Emergency Operations Facility (EOF).
- 3.2 Initially, the Dose Projection Coordinator may report to the Radiation Control Director upon the TSC activation and will provide dose projection calculation for the RCD and SEC to evaluate. Upon EOF activation, the Dose Projection Coordinator will report to the RCM.
- 3.3 The Dose Projection Coordinator is responsible for calculating the TEDE and the thyroid CDE, to be used in determining and evaluating possible off-site consequences from a release of airborne radioactivity.

4.0 DEFINITIONS

- 4.1 Committed Dose Equivalent (CDE)

The dose equivalent to a specific organ or tissue integrated over a 50-year period due to radionuclides in the body.

- 4.2 Committed Effective Dose Equivalent (CEDE)

The sum of committed dose equivalents integrated over a 50-year period due to radionuclides in the body. Units in Rem.

4.0 DEFINITIONS

4.3 Deep Dose Equivalent (DDE)

Dose equivalent at 1 cm tissue depth.

4.4 Dose Equivalent (DE)

The product of the absorbed dose in rad, a quality factor related to the biological effectiveness of the radiation involved and any other modifying factors.

4.5 Effective Dose Equivalent (EDE)

The sum of the products of the dose equivalent to each organ and a weighing factor related to the risk of delayed health effects in the respective organ. Units are in REM.

4.6 Seabreeze

An atmospheric condition in which a radioactive release can travel inland, intersect the convergence zone, rise, reverse course in the return flow layer overhead, and return once again to land. If this condition is confirmed by a meteorologist, the projected dose should be adjusted upward by a factor of 2.5. Seabreeze is effective for those areas between the 16° and 269° bearings.

4.7 Total Effective Dose Equivalent (TEDE)

The sum of the deep dose equivalent and the committed effective dose equivalent.

4.8 Direct Torus Vent - is the Hardened Wetwell Vent which reads out on the XU54 panel located on each Unit.

5.0 INSTRUCTIONS

NOTE: The isotopic mixes used in CPLDOSE calculations are predetermined accident mixes developed using NUREG guidance. Application of the CPLDOSE code for plant conditions other than the those intended (i.e., loss of coolant, core damage, dropped fuel bundle) will result in overly conservative, erroneous dose calculations.

NOTE: CPLDOSE is intended as a real-time dose calculation model and should not be utilized for accident analysis purposes.

NOTE: If on-site meteorological data is unavailable, OPEP-Appendix A, Emergency Response Resources, provides telephone numbers for acquiring meteorological information from off-site sources.

NOTE: Availability of the CPLDOSE program is assured by the following:

- Communications inverter backup power to the Control Room STA computer.
- TSC/EOF Diesel Generator Backup power to the Dose Projection Computer.
- Redundant copies of the CPLDOSE program are available on the Unit 1 and Unit 2 RO computers.
- A backup diskette is available in the Dose Projection area in the EOF.

NOTE: Parameter inputs for the CPLDOSE program should be obtained from existing plant instrumentation or ERFIS.

5.0 INSTRUCTIONS

5.1 Dose Projection Program (CPLDOSE)

NOTE: Steps 5.1.1 to 5.1.4 should provide sufficient direction for Control Room personnel to complete a dose projection.

5.1.1 Program Initiation

1. Control Room

Initiate the CPLDOSE program on the STA or either Unit's RO computer by selecting the "CPLDOSE" icon.

2. EOF Dose Projection

a. Start the computer.

b. At the "Power-on Password" screen, type the password "lead" and strike the "Enter" key.

c. At the "Network Password" screen, click on "Cancel."

d. Select the "CPLDOSE" icon.

3. The program will open with the Main Menu displayed.

5.0 INSTRUCTIONS

NOTE: Guidance for manipulations within the CPLDCCE program is provided in Attachment 4.

NOTE: At the bottom of each screen is a brief description of the selected menu choices.

F1 is the Help function, which when selected, provides a pop-up window with information on the selected topic. HELP screens provide additional information such as normal readings, high alarm setpoints, and contingencies.

5.1.2 Across the top of the main menu are the options to select from:

- a. PROJECTION
- b. CONTINGENCY
- c. INT PHASE
- d. GRAPHICS
- e. UTILITIES
- f. EXIT

5.1.3 Verify the appropriate plant and unit are indicated at the top of the screen on the Main Menu.

1. To change the plant unit;

From the Main Menu select **UTILITIES** and in the drop down menu select **PLANT**. In the data entry box that appears select the appropriate unit **BRUNSWICK I** or **BRUNSWICK II** and verify at the top of the Main Menu.

5.0 INSTRUCTIONS

2. Determine if Seabreeze conditions exist

NOTE: If **SEABREEZE** is selected, the computer model automatically multiplies the dose projection calculation (equivalent Xe and I release) by a factor of 2.5.

NOTE: If the meteorological analysis is not confirmed by a meteorologist select **NO SEABREEZE**.

From the Main Menu select **UTILITIES** and in the drop down menu select **SEABREEZE**. In the data entry box that appears select either **SEABREEZE** or **NO SEABREEZE**.

5.1.4 Projection

NOTE: The PROJECTION option is intended for use when actual release data is available for dose projection purposes (i.e., effluent monitors, effluent sample analysis, environmental sample analysis, Direct Torus Vent).

NOTE: To obtain the Direct Torus Vent reading, go to Panel XU-54 for Unit 1 or Unit 2. A reading may be on the meter when you observe the panel. Push the "EFL" button and take the reading displayed. The "EFL" reading is displayed in microcuries per second.

NOTE: Use OPEP-03.4.7, Attachment 2, Data Sheet for Dose Projection Inputs, to determine individual or collective flows.

1. Selection of **CONTROL ROOM** or **RMS** will initiate a pop-up screen titled "Brunswick Effluent Monitors".

5.0 INSTRUCTIONS

- a. Enter release point, release rate, and the flow rate data on the Brunswick Effluent Monitor Screen. Release points include Main Stack, Turbine Building (two locations provided), Reactor Building, and/or Direct Torus Vent. If any flow instrument loop is not operational, refer to OPEP-03.6.1, Release Estimates Based on Stack/Vent Readings.
- b. When all the data is entered, the final selection is **CANCEL** or **DONE**. This allows the user to proceed with the dose projection or cancel and reenter the values or select another option.
- c. The SPECTRUM DETERMINATION screen appears if **DONE** is selected.
 - (1) Enter core uncover time. If unknown, use a best estimate. If the core was uncovered and water level was subsequently restored the time the core was uncovered should be entered.
 - (2) If this is a spent fuel accident, select "**Old Spent Fuel**" if affected bundle(s) is ≥ 5 years old. If age is ≤ 5 years old or unknown, select Spent Fuel.
 - (3) Select "**Effective**" or "**Not Effective**" for filtration. Any amount of filtration, partitioning (torus scrubbing), or sprays should be entered as effective.

5.0 INSTRUCTIONS

NOTE: If stability class information is not available, refer to Attachment 3, Stability Class Data.

- (4) Enter meteorological data. Meteorological data can be obtained for the EOF using ERFIS, as described in Attachment 1, Acquisition of Meteorological Data Via ERFIS. If no Met data is entered, an "E" stability class is automatically selected.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- (5) Enter Shutdown date and time.
- (6) Enter an estimate of Release Duration. For known durations, enter the actual time of release (i.e., 0.5 hours, 0.75 hours, 1.0 hours). For projections of ongoing releases for which a duration is not known, one hour should be used. For releases that continue for more than one hour, the projections for previous releases should be summed for total release values.
- d. Select "**Done**" to get dose projection, or select **CANCEL** to start over. The dose projection will be displayed. The TEDE(mRem), CDE(mRem), Immersion EDE(mRem), Inhalation CEDE(mRem), and Ground EDE(mRem), X/Q Elevated (s/m³) at Site Boundary 2, 5, 10 miles and location at which the "MAX" dose readings are provided.
- e. The information highlighted in yellow corresponds to the off-site Emergency Notification Form, OPEP-02.6.21-1, information.
- f. All of the input screens print out (unless deactivated) after the user chooses the **DONE** option.

5.0 INSTRUCTIONS

- g. If a threshold value, based on dose projection, is exceeded for an emergency action level a message will appear in the lower right corner of the screen identifying the appropriate classification level.
 - h. If a Site Area or General Emergency is indicated by the dose projection results, you can select to view the 10-Mile Plume Isopleth Map or 10-Mile PAR Keyhole Map located in the Graphics Option (Step 5.1.7).
 - i. If another dose projection is to be performed, select "**Clear Main**" from Utilities Menu. This will return the program to the Main Menu.
2. The third option in the Projection Option dropdown menu is PLANT SAMPLE. This selection is used for the input of isotopes from an analyzed sample result. The sample may be either gaseous or liquid but must be taken directly from an effluent stream with no further dilution. THIS OPTION MAY NOT BE USED FOR POST ACCIDENT ANALYSIS SAMPLES.
- a. The screen which appears contains 44 predetermined isotopes in the CPLDOSE code.
 - b. ENTER Time From Sample To Release or best estimate.
 - c. Select Release Height by choosing either ground or elevated.
 - d. Enter meteorological information manually.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- e. Enter Shutdown date and time.
- f. Enter sample data flow in units of CFM or select "**Flow**," to select the value from the pop-up screen. Use Mouse or Space Bar to select individual flow. Select **CANCEL** or **DONE** and return to the data screen. The value selected should appear in the "Flow" window.

5.0 INSTRUCTIONS

- g. Enter Release Duration or a best estimate. For known durations, enter the actual time of release (i.e., 0.5 hours, 0.75 hours, 1.0 hours). For projections of ongoing releases for which a duration is not known, one hour should be used. For releases that continue for more than one hour, the projections for previous releases should be summed for total release values.
 - h. Select **CANCEL** - to reenter data, or **DONE** - to get the dose projection.
 - i. CPLDOSE, based on the data input will calculate the TEDE(mRem), Thyroid CDE(mRem), Immersion EDE(mRem), Inhalation CEDE(mRem), Ground EDE(mRem), X/Q Ground (s/m³) at Site Boundary, 2, 5, 10-miles and MAX.
 - j. Write the Sample number on the printout.
3. The final choice in the Projection option dropdown menu is the ENVIRONMENTAL SAMPLE screen. There are two (2) options to obtain a dose projection. (1) Gamma closed window dose rate and (2) Air sample dose rate.

<p>NOTE: Actual Field readings allow dose rate data to be used as the basis for a dose projection.</p>

- a. Gamma closed window dose rate -
 - (1) Enter gamma closed window dose rate field data in units of mRem/hr.
 - (2) Enter Distance from plant (miles) where the data was gathered.

5.0 INSTRUCTIONS

- (3) Enter Bearing from plant (degrees) where the data was gathered.
- (4) Enter Release Duration or best estimate. For known durations, enter the actual time of release (i.e., 0.5 hours, 0.75 hours, 1.0 hours). For projections of ongoing releases for which a duration is not known, one hour should be used. For releases that continue for more than one hour, the projections for previous releases should be summed for total release values.
- (5) Select Release height - ground or elevated.
- (6) Enter meteorological data. Meteorological data for the EOF can be obtained using ERFIS, as described in Attachment 1, Acquisition of Meteorological Data via ERFIS. If no data is entered, an "E" stability class is automatically selected.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- (7) Enter shutdown date and time.
 - (8) Select **DONE**, and CPLDOSE calculates and displays the results.
- b. Air sample dose rate
- (1) Select "CART". A second screen, "Sample Cartridge," appears.
 - (2) Enter sample volume data (cfm) then select either:
 - (a) "Net Count Rate" and enter cpm value or
 - (b) "Net Dose Rate" and enter mRem/hr value.

5.0 INSTRUCTIONS

- (3) Select **DONE**, and the "Thyroid Committed Dose Rate" is calculated and displayed on the mRem/hr line for Air sample dose rate. To EXIT this screen, select **CANCEL**.
- (4) Enter Distance from the plant (miles) where the sample was taken.
- (5) Enter Bearing from the plant (degrees) where the sample was taken.
- (6) Enter Release Duration or best estimate. For known durations, enter the actual time of release (i.e., 0.5 hours, 0.75 hours, 1.0 hours). For projections of ongoing releases for which a duration is not known, one hour should be used. For releases that continue for more than one hour, the projections for previous releases should be summed for total release values.
- (7) Select the release height - ground or elevated.
- (8) Enter meteorological data. Meteorological data for the EOF can be obtained using ERFIS, as described in Attachment 1, Acquisition of Meteorological Data via ERFIS. If no data is entered, an "E" stability class is automatically selected.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- (9) Enter Shutdown date and time.
- (10) Select **DONE** to obtain dose projection values or **CANCEL** to re-enter data.

5.0 INSTRUCTIONS

5.1.5 Contingency

1. Contingency calculations are typically "what if" types of calculations that allow the user to make predictions of off-site dose based on some projected event. This menu should be used when utilizing PASS sample data.
2. The KNOWN MIX screen allows the user to input a projected isotopic spectrum.
 - a. Other inputs to this screen are: Time from Sample to Release(hrs); select Release height; Meteorological Information; enter Shutdown date and time; and Total Activity released (curies).
 - b. Select **DONE**, and CPLDOSE Code then calculates and prints the output. Select **CANCEL** to start over.
3. UNKNOWN MIX Screen - The user must answer several questions about core status.
 - a. Enter/Select core uncover time **TIME**.
 - b. Select filtration/DW sprays/Partitioning - **Effective** or **Not Effective**.
 - c. Enter meteorological information manually.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- d. Enter Shutdown - date and time.
- e. Enter Total activity released value in curies.
- f. Select Release height - **ground** or **elevated**.
- g. Select **DONE**, and CPLDOSE Code then calculates and prints the output; or **CANCEL** to start over.

5.0 INSTRUCTIONS

4. Defaults

CAUTION

The Contingency, Defaults, Spent Fuel should be used only as a last resort. The dose projection provided will vary conservative by several orders of magnitude.

- a. Select Core Uncovery Time; or for nonreactor accidents, select Spent Fuel or Old Spent Fuel.
- b. Select Filtration/DW spray/partitioning - **Effective** or **Not Effective**
- c. Enter Meteorological Data manually.

CAUTION

A shutdown date and time must be entered. If the reactor is not shutdown, or this is a spent fuel accident, enter the current date and time.

- d. Enter Shutdown - date and time
- e. Select Release height - ground or elevated
- f. Select **DONE** to obtain Dose Projection data, or **CANCEL** to start over.

5.1.6 Intermediate Phase Menu

1. This calculates the dose 1st-year, 2nd-year, and 50-year.
2. DOSE RATE
 - a. The calculated dose factors can be modified by selecting "Weathering" or "No Weathering" factors to be used located in the Utilities Option (Step 5.1.8). This must be done before running the program.
 - b. Input values for Dose Rate at 1 meter height, Distance from plant (miles), and bearing from the plant (degrees).

5.0 INSTRUCTIONS

- c. Select **DONE**, and CPLDOSE will calculate the 1st, 2nd, and 50-year doses based on a default spectrum and dose factors.
 - d. The screen displays the DDE External doses calculated for 1, 2, and 50-years, and skin dose calculated for 1st year dose only.
 - e. Select CANCEL-Enter to exit this screen.
3. SAMPLE Screen
- a. The user can turn on or off the weathering factors located in the Utilities option. (Step 5.1.8)
 - b. The user enters the individual isotopic analysis data.
 - c. Enter the Sample Identification.
 - d. Choose yes or no to answer "Add the Sample to Average?" If yes is selected, values are retained, and the sample cannot be later subtracted from the average. DO NOT add hypothetical samples to this file average. Select yes or no.
 - e. Enters distance from plant (miles).
 - f. Enters bearing from plant (degrees).
 - g. When **DONE** is selected, DDE External doses(mRem) are calculated for 1, 2, and 50-years, and skin dose(mRem) is calculated for 1st year dose only.
 - h. Select **CANCEL** to exit this screen.

5.0 INSTRUCTIONS

5.1.7 GRAPHICS Option choices are:

1. 10-Mile Isopleths
 - a. Perform a Control Room or RMS dose projection per Step 5.1.4.
 - b. When above is completed, select this screen which will display the PAG TEDE and CDE Thyroid plume.
2. 10-Mile PARs
 - a. Perform Control Room or RMS dose projection per Step 5.1.4.
 - b. When above is completed, select this screen to display the PAR keyhole plume out to 10 miles.

3. 10-Mile EMT

Select this screen to enter and display the EMT sample dose rates(mRem) at the selected distance and bearing where the sample results were taken. This screen retains the data EMT sample data when the screen is exited.

4. 50-Mile INT Phase

Select this screen to enter and display the measured environmental dose rates or calculated CDE/TEDE dose rates out to 50 miles. This screen retains the data when the screen is exited.

5. These screens (10-mile EMT and 50-mile INT phase) are used by the Dose Projection Team to plot field reading results.

5.1.8 UTILITIES Screens

1. CALCULATOR - Provides standard arithmetic assistance.
2. CONVERSIONS - Allows user to perform standard conversions factors for: Length, Area, Volume, Flow, Speed, Pressure, Temperature, Dose, Equivalent Dose and Activity.

5.0 INSTRUCTIONS

3. PLANT - Allows the user to choose the plant site for the dose projection (Harris, Robinson, Brunswick I, Brunswick II).
 4. SEABREEZE - Allows the user to select the Seabreeze option for Brunswick Site when Seabreeze conditions are in effect (seabreeze/no seabreeze).
 5. WEATHERING - Allows the user to turn on or off the weathering factors used in the INT dose calculation (weathering/no weathering).
 6. PRINTING - Enable or Disable auto printing. The program is set to automatic print each screen each time "**Done**" or "**Enter**" is input.
 7. OTHER DISTS. - Allows the user to enter in distances other than the standard ones of Site Boundary, 2, 5, 10 miles for dose calculation. Values in miles are entered for either or both of the following: furthest downwind distance; downwind increment.
 8. RESET ERFIS - N/A BNP.
 9. CLEAR MAIN - Allows the user to clear the main screen.
- 5.1.9 EXIT allows the user to exit CPLDOSE.

6.0 RECORDS

Documentation generated from implementation of this procedure should be forwarded to the Supervisor - Emergency Preparedness for submittal to Document Services for retention.

5.0 INSTRUCTIONS

ATTACHMENT 1

Page 1 of 1

Acquisition of Meteorological Data Via ERFIS

1. Press the RETURN <CR> key a couple of times to awake the terminal.
2. If the Terminal server port has been Logged-Off, simply enter your name when prompted, and press RETURN <CR>.

NOTE: Any name will do, type your last name.

At the terminal server prompt:

Prompt looks like... a) or b) below.

3. a) local>
b) DSVRxx> !xx is a terminal server number, and ERFIS has many.

NOTE: Several of the connect messages may have to be tried to find an active connection. Use Connect Sim for link to Simulator. This provides canned data. The other four will connect to live met data

4. At the keyboard, displaying either of the above prompts, type any one of the following:
CONNECT SIM <CR> !For the Simulator Computer.
CONNECT EC01A <CR> !For the U1 ERFIS Computer TRA.
CONNECT EC01B <CR> !For the U1 ERFIS Computer RTAD.
CONNECT EC02A <CR> !For the U2 ERFIS Computer TRA.
CONNECT EC02B <CR> !For the U2 ERFIS Computer RTAD.
5. At the next LOGIN prompt, type your assigned USERNAME.
USERNAME: xxxxxxxxx gepacuser <CR>
6. At the next LOGIN prompt, type your assigned PASSWORD.
PASSWORD: xxxxxxxxx gepac <CR>
7. If your next prompt is "Enter your last Name:" xxxxxx <CR>
Type your last name or work group, i.e., OPS, MAINT, CHEMISTRY.
8. The Computer Node prompt will appear., i.e., \$, EC01A:::, EC01B:::, EC02A:::, or EC02B:::.
9. The W*EATHER is a logical name assigned to all the computers listed above.
Type, W <CR> and the ERFIS computer will display your WEATHER for the previous 15 minutes.

NOTE: Typing W <CR> is all that is necessary because no other DIGITAL Command starts with this letter

NOTE: Weather is obtained by modem from the ERFIS computer to the MET Tower every 15 minutes. Always use the Logical W*EATHER for update to obtain the latest information.

10. Type LOG <CR> to end the connection to any of the above Computers, thereby terminating your process.

NOTE: If terminal is not in the above condition at start of entry, contact ERFIS duty pager.

ATTACHMENT 2
Page 1 of 1
Data Sheet for Dose Projection Inputs

CHARACTERISTIC	TIME						
Main Stack	Release Rate (μ Ci/Sec)						
	Flow Rate (CFM)						
Turbine Building	#1 Release Rate (μ Ci/Sec)						
	#1 Flow Rate (CFM)						
	#2 Release Rate (μ Ci/Sec)						
	#2 Flow Rate (CFM)						
Reactor Building	Release Rate (CPM)						
	Flow Rate (CFM)						
Torus Vent	Release Rate (μ Ci/Sec)						
Core Uncovered	Time (1) lost/ (2) Returned						
Effective Filtration	Yes / No						
Release Height	Ground						
	Elevated						
Release Duration	Anticipated Length of Time						
Shutdown	Date						
	Time						
Met Data Wind Speed	Upper						
	Lower						
Met Data Direction	Upper						
	Lower						
Stability	Class						
Seabreeze	Yes / No						

ATTACHMENT 3
Page 1 of 1
Stability Class Data

Table 1

If there is no stability class data readily available, a general estimate of the current Atmospheric Stability Class can be made by visual observation using the following table:

	SUNNY DAY	CLOUDY DAY	CLOUDY NIGHT	CLEAR NIGHT
LIGHT WIND/OR CALM ≤ 4 m/sec or 8.9 mph	B	C	E	F
MODERATELY STRONG WIND ≥ 4 m/sec or 8.9 mph	C	D	D	D

NOTE: ASSUME Stability Class D whenever it's raining.

Table 2

With an elevated release, maximum radiological exposures may occur beyond the site boundary depending on Stability Class. For example:

STABILITY CLASS	DOWNWIND DISTANCE
A	0.27 MILES
B	0.45 MILES
C	0.76 MILES
D	1.8 MILES
E	3.5 MILES
F	9 MILES
G	33 MILES

ATTACHMENT 4
Page 1 of 1
Computer Instructions for CPLDOSE

The following is a discussion of the manipulations necessary to use the CPLDOSE program.

The normal and simplest method of movement within the CPLDOSE program is via the attached "Mouse" using the "point and click" method. "Point and click" refers to the process of manipulating the screen cursor position by moving the mouse on a flat surface until the screen cursor is in the desired position then clicking the left button on the mouse to initiate the option the cursor is pointing at. This process will accomplish the "SELECT" task as directed in the body of this procedure.

SELECT as used in the context of OPEP-03.4.7 means to position the cursor to the desired option and initiate the function whether using a mouse or in the manual mode using a keyboard.

If a mouse is not available on the computer being used for CPLDOSE, the program can be used in a manual keyboard manipulation mode.

Manual (Keyboard)

Only eight keys manipulations are needed in the manual mode of the CPLDOSE program:

1. F6
2. Arrow keys (←↑→↓)
3. TAB
4. SPACE BAR
5. ENTER

F6 - The F6 key is only functional for use with the Main Menu. The Main Menu is the initial menu, with six options across the top of the screen, that appears when you enter the CPLDOSE program. Depression of the F6 key will "activate" the main menu for use in the manual mode. The menu will be displayed with one of the six options "highlighted" after the F6 key is depressed.

Arrow Keys

(←→↑↓)- The arrow keys are used to move (1) between options with each successive selected option being highlighted and (2) the flashing cursor in the data entry boxes.

TAB - The TAB key is functional in the Data/Condition entry boxes. These boxes are easily identified by the presence of "CANCEL" and "DONE" options. The TAB key is used to move the flashing cursor between data entry points, condition selections, and selection of the "CANCEL" or "DONE" options.

SPACE

BAR - The SPACE BAR is functional in the Data/Condition entry boxes. The SPACE BAR is used when an "ON - OFF" toggle decision is necessary. These situations are identifiable by the presence of () or [] entry points. When the flashing cursor is positioned to the desired entry point, depressing the SPACE BAR will toggle between ON and OFF for the selection and will be indicated by the presence of an *.

ENTER - The ENTER button is only functional for the initiation of selected options. Depression of ENTER will initiate the highlighted or selected option. The actual action will vary. If DONE is highlighted in a Data/Condition entry box, depression of the ENTER key will initiate a calculation, transition to the next entry screen, or activate a specific conditional change (i.e., Seabreeze or No Seabreeze), if in the Main Menu it may simply initiate a dropdown screen of other options.