FENOC
FirstEnergy Nuclear Operating Company

Perry Nuclear Power Plant
10 Center Road
P.O. Box 97
Perry, Ohio 44081

January 10, 2000
PY-CEI/NRR-2456L

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Submittal of Emergency Plan
Implementing Instructions

Gentlemen:

Pursuant to 10 CFR 50 Appendix E, enclosed are changes to the Emergency Plan Implementing Instructions (EPIs) for the Perry Nuclear Power Plant. These changes constitute revisions, temporary changes, or reissued pages. Please follow the updating instructions per the attached Controlled Document Instruction Sheet and return the signed Acknowledgment of Receipt form.

If you have questions or require additional information, please contact me at (440)280-5294.

Very truly yours,

Vernon K. Higaki

Vernon K. Higaki, Supervisor
Emergency Planning Unit

VKH:ts

Enclosure

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III, Incident Response Center w/2 attachments

A045

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

PERRY NUCLEAR POWER PLANT

UNIT 1 & 2

ACKNOWLEDGMENT OF RECEIPT

Title Emergency Plan Implementing Instructions EPI – B7a / Rev.7.

Control No. 60

Letter No./Date PY-CEI/NRR-2456L /January 10, 2000

_____ _____

Signature Date

_____

Title

Return to:

Perry Nuclear Power Plant
Attn: T. L. Snider, A240
P. O. Box 97
Perry, Ohio 44081

The Cleveland Electric Illuminating Company
Perry Nuclear Power Plant

Controlled Document Instruction Sheet

Manual: Emergency Plan Implementing Instruction (EPI-B7a / Rev 7).

Control Number **60**

Revision Number	Temporary Change No.	Insert	Remove and Replace
7		EPI-B7a / Rev 7	Entire Instruction

The Cleveland Electric Illuminating Company

PERRY OPERATIONS MANUAL

PNPP [redacted] CONTROLLED COPY No. 060

Emergency Plan Implementing Instruction

TITLE: AUTOMATED OFFSITE DOSE CALCULATIONS

INFORMATION ONLY

REVISION: 7 EFFECTIVE DATE: 12-16-99

PREPARED: Louis J. Sosler 10-20-99
/ Date

EFFECTIVE PIC's

PIC No.	Type of Change	Effective Date

AUTOMATED OFFSITE DOSE CALCULATIONS

Table of Contents

SCOPE OF REVISION:

Periodic Review - Required

Rev. 7 - 1. Changes Reference to CADAP Version 3.0.
2. Changes "Elevated" Release to "Above Normal" Release.
3. Revises Log On Instruction.
4. Deletes a caution which no longer applies for CADAP 3.0.
5. Changes "Caution" to "Alert" for radiation monitors in CADAP Logic Flowchart.
6. Incorporates minor changes throughout document due to selection process in Windows format. For instance, projections are initiated by selecting "OK" instead of "DONE". In addition, the print selection is part of a pull down menu.
7. Revised in its entirety. No rev. bars used.

AUTOMATED OFFSITE DOSE CALCULATIONS

1.0 PURPOSE

This procedure provides instruction for the operation of the Computer Aided Dose Assessment Program (CADAP) used in the event of a radiological release to the environment which requires implementation of the Perry Emergency Plan. CADAP is a tool used by the TSC/EOF Dose Assessors or the Shift Chemistry Technician to develop Protective Action Recommendations (PARs).

2.0 SCOPE

This procedure applies to the use of the Computer Aided Dose Assessment Program, Version 3.0.

3.0 RESPONSIBILITIES

3.1 **Emergency Coordinator**

NOTE: These duties shall be performed by the TSC Operations Manager prior to Emergency Operations Facility (EOF) being operational, or the Shift Supervisor prior to Technical Support Center (TSC) being operational.

1. Review and approve Protective Action Recommendations (PARs).

2. Authorize the release of the results of dose projections and appropriate protective action recommendations to the applicable offsite agencies.

3.2 **Offsite Radiation Advisor**

NOTE: These duties shall be performed by the TSC Radiation Protection Coordinator prior to EOF being operational, or the Shift Technical Advisor, if stationed, prior to TSC being operational.

1. Supervise the performance of appropriate dose calculations by the Dose Assessor(s), including the review of all calculation sheets used.

2. Review Protective Action Recommendations (PARs), and recommend approval to the Emergency Coordinator.

3.3 **TSC/EOF Dose Assessor(s)**

NOTE: These duties shall be performed by a qualified on-shift Chemistry Technician prior to TSC or EOF being declared operational.

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CAUTION

The Computer-Aided Dose Assessment Program (CADAP) user should be aware that dose assessment may be a complex and a multi-optioned endeavor. This instruction is designed to enable the user to perform the required dose projections in a timely manner; however, the user should use his/her judgment in selecting the appropriate options as dictated by the accident.

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1. Perform applicable offsite dose calculations.

2. Develop Protective Action Recommendations (PARs) in accordance with <EPI-B8>.

3.4 **Emergency Planning Unit**

1. After a drill/exercise where MASTER capability was transferred from the Control Room PC, ensure Computer Support Unit (CSU) is contacted to have accumulated dose and other drill-related files deleted from the ICSPI, CADAP Directory.

4.0 REFERENCES

4.1 Source References

1. Emergency Plan for PNPP Docket Nos. 50-440, 50-441

2. Computer-Aided Dose Assessment Program (CADAP), Version 3.0, Software Design Description (SDD), September 1998

4.2 Use References

1. EPI-A1: Emergency Action Level

2. EPI-B7b: Manual Offsite Dose Calculations

3. EPI-B8: Protective Actions and Guides

4. PEI-T23: Containment Control

5. HPI-B0003: Processing of Personnel Dosimetry

6. Commitments addressed in this document:

None

5.0 DEFINITIONS

5.1 Atmospheric Dispersion Parameter

Symbol X/Q ("chi over q"). The amount of dispersion that has occurred between the point of release and the downwind plume centerline point of interest. X/Qs are expressed in units of sec/m^3.

5.2 Committed Dose Equivalent (CDE)

The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50 year period following the intake. For dose assessment purposes, CDE for child thyroid is calculated.

5.3 Committed Effective Dose Equivalent (CEDE)

The sum of the products of the weighting factors applicable to each of the body organs or tissues and the committed dose equivalent to these organs or tissues. CEDE is the internal dose component of TEDE.

5.4 Computer-Aided Dose Assessment Program (CADAP)

The software program designed to provide an automated method for determining the present and/or potential offsite consequences of a significant release to the environment from the Perry Plant during an Emergency Plan event.

5.5 Deep Dose Equivalent (DDE)

The dose equivalent measured at a tissue depth of 1 cm (1000 mg/cm^2). DDE is the external dose component of TEDE.

5.6 Dose Calculations

The evaluation of the consequences of a release of radioactive material which has exposed, or which may expose, emergency response personnel and members of the general public. Dose calculations include projection of offsite doses based on release parameters for both noble gases and iodines that could contribute to the Total Effective Dose Equivalent (TEDE) and Committed Dose Equivalent-Child Thyroid (CDEct) doses.

5.7 Above Normal Release

During implementation of the Emergency Plan, a release is considered "above normal" when one or more plant vent radiation monitors (D17) exceeds the ALERT (10% ODCM limit) setpoint on a noble gas channel. At this point, a radiological release is considered underway for off-site dose assessment purposes.

5.8 Ground Level Release

The release of airborne radioactivity from building vents, buildings, or structures (other than an elevated stack or vent). In keeping with NRC guidance, all releases from Perry are considered to be ground level releases. In a ground level release, the radioactivity concentration is highest at the point of release and decreases with distance to downwind locations.

5.9 Pasquill Stability Class

Term used to describe the atmospheric conditions relevant to the dispersion of a release. The conditions are categorized into seven classes A through G. Class A is considered "very unstable" and correlates to the best dispersion. Class G is very stable, resulting in poor dispersion (and thereby higher offsite concentrations).

5.10 System Environment

CADAP is run from a PC and is designed for use as part of the Perry computer network. CADAP can interface with the plant Integrated Computer System via the Plant Network or through dial-up networking from the State Emergency Management Agency (EMA) to obtain plant status inventory and site meteorological data. The Windows 95/98 or NT Operating System is used.

5.11 Total Effective Dose Equivalent (TEDE)

The sum of DDE (external dose) and CEDE (internal dose). For dose assessment purposes, DDE is considered the whole body dose per NUMARC "White Paper," entitled "Implementation of the New EPA Protective Action Guides in Existing Emergency Programs, April 1993."

6.0 DETAILS

The following actions will be performed by the **TSC/EOF Dose Assessor(s)** or **Shift Chemistry Technician:**

6.1 CADAP Log-On Instructions and General Orientation

1. If the CADAP PC has been down-powered, turn on the monitor, then the computer, and follow the on-screen instructions to obtain the "Logon Information" screen.

2. If accessing CADAP from the Control Room, TSC, EOF, or Backup EOF (any computer that is connected to the Network), then perform the following:

   a. Type in "CADAP" for both the Username and Password

   b. "Click" on the OK button.

3. If accessing CADAP from the PC at the State EOC, then perform the following:

   a. Log on to the computer.

   b. "Double click" on the Dial Up Networking icon.

   c. Type in "CADAP" for both the Username and Password.

   d. "Click" on the OK button.

4. Ensure the printer has a sufficient supply of paper and the printer indicates "READY".

5. On the desktop, "double click" on the CADAP icon.

6. When the "CADAP Startup Screen" appears, perform the following:

   a. Select File Maintenance, and then select OK to purge old files.

   b. Perform one of the following:

      1) For an actual emergency, select Real and Host.

      2) If the simulator is being used, select Simulator and Host.

      3) If drill files are being used, select Drill and Local.

   c. "Click" on OK.

7. Verify that the window "CADAP for Windows" is displayed, indicating that the program is running.

8. When notified that dose assessment/PAR responsibilities have been transferred to your facility, perform the following:

****

CAUTION

The MASTER Capability should remain with the Control Room, except during events or drills/exercises, to avoid collecting unnecessary files on (ICSPI, CADAP Directory). **Master control shall not be taken in the EOF until approved by the Emergency Coordinator.**

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a. "Click" on the UTILITIES prompt and select MASTER TERMINAL. The "Master Terminal Info" screen will appear.

b. Accept "Master" control capabilities to update and revise the Accumulated Dose files by "clicking" on the TAKE prompt.

c. When "This terminal is designated MASTER" is displayed, "click" on the CANCEL button.

9. "Click" on the ICS (Integrated Computer System) pulldown menu and select the VALUES prompt to view plant system, radiation monitor, and meteorological (MET) data.

   a. Periodically monitor the ICS Screen to determine the status and availability of plant and MET parameters.

10. "Click" on OK on the ICS screen.

11. Select the appropriate emergency dose assessment method from the following:

    - Effluent Monitor Readings (Section 6.2)
    - Effluent Sample Results (Section 6.3)
    - Containment Failure Contingency (Section 6.4)
    - Fuel Handling Accident Contingency (Section 6.5)
    - RMT Field Data (Section 6.6)
    - RMT Iodine Cartridge Data Analyses (Section 6.7)
    - Deposition Exposure Calculations (Section 6.8)

12. Refer to Section 6.9 if a loss of the data link from the plant ICS (referred to as ICADAP) occurs.

13. Refer to Section 6.10 for instructions on the use of various utility features, i.e., Note Pad, Print, Calculator, etc.

14. Refer to Section 6.11 for instructions to log off CADAP and shut down the PC.

6.2 Effluent Monitor Projections

1. "Click" on the PROJECTION prompt and select EFFLUENT MONITOR. The "Monitored Release" screen will appear.

2. Select the vent path of concern.

****

CAUTION

Source term is determined for each calculation using current plant conditions. **Actual core state must be verified with facility Operations staff before proceeding.**

****

3. "Click" on the appropriate "Source Term used for calculation, based on Core Condition".

4. Using Attachment 1, CADAP Logic Flowchart, verify that the correct effluent monitor values, "time since Reactor S/D", and the non-noble gas reduction factors are indicated for the vent selected.

   NOTE: A single "click" will select the field; a double "click" will permit editing.

   NOTE: The program will prompt the user to select a vent monitor.

   a. If values are wrong or invalid, edit the incorrect fields or "click" on the CANCEL button and start over.

5. If the release is through more than one vent, then perform one of the following:

   a. "Click" on the ANOTHER button to verify other applicable effluent monitors (vents), or

   b. Use the UNMONITORED RELEASE by "clicking" on the corresponding box and typing in the appropriate release activity and flow rate.

6. When all applicable effluent monitors are verified, "click" on the OK button.

   NOTE: If "time since reactor power <4%" is less than 1 hour or is not provided, the program defaults to 1 hour.

7. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

   a. Revise the release duration (in hours), if appropriate.

b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

1) Edit data if available under the VALUES TO USE column, or

2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

d. "Click" on the OK button when data is verified or when edited.

****

CAUTION

The Emergency Action Level determination based on projected dose, which is displayed on the Results - Screen 1, is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

8. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

9. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-up Notification form.

a. Verify that the data on the form is correct and complete.

b. If the PAR is to be revised, perform the following:

1) "Click" on the PAR prompt

2) Select one of the following options:

a) DEFAULT (based on General Emergency default PARs per <EPI-B8>, Attachment 2).

b) DOSE RATES (based on actual or projected dose per <EPI-B8>, Attachment 3).

NOTE: The Follow-Up Notification Window will automatically be updated.

c. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

10. Accumulate the dose calculations by "clicking" on the INTEGRATED DOSE prompt (on Results - Screen 1) to update the file for the affected sector.

    NOTE: The "Accumulated Dose" window gives you results for the particular dose projection you are running. The window will allow you to look at previous doses, replace the old calculations with the current figures, and print the current values.

    Only the terminal designated as the "Master" will be able to save data to a common file. If not the "Master", data is saved only at the local PC.

6.3 Effluent Sample Analysis Projections

1. "Click" on the Projection pulldown menu and select SAMPLE ANALYSIS. The "Effluent Sample" screen will appear.

2. Input the sample data from sample results for only those isotopes identified.

3. Input the flow rate from the appropriate vent.

4. If sample results are available for more than one vent path, "click" on the ADD button to include the results from the other samples.

5. "Click" on the OK button when available isotopic data has been entered.

6. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen.

    a. Revise the release duration (in hours), if appropriate.

    b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

    c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

        1) Edit data if available under the VALUES TO USE column, or

        2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

    d. "Click" on the OK button when data is verified or when edited.

****

CAUTION

The Emergency Action Level determination based on projected dose, which is displayed on the Results -Screen 1, is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

7. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

8. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-up Notification form.

   a. Verify that the data on the form is correct and complete.

   b. If the PAR is to be revised, perform the following:

      1) "Click" on the PAR prompt

      2) Select one of the following options:

         a) DEFAULT (based on General Emergency default PARs per <EPI-B8>, Attachment 2).

         b) DOSE RATES (based on actual or projected dose per <EPI-B8>, Attachment 3).

   NOTE: The Follow-Up Notification Window will automatically be updated.

   c. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

9. Accumulate the dose calculations by "clicking" the INTEGRATED DOSE prompt (on Results - Screen 1) to update the file for the affected sector.

6.4 Contingency - Containment Failure

1. "Click" on the Contingencies pulldown menu and select CONTAINMENT. The "Containment Contingency" screen will appear.

NOTE: The TOTAL FAILURE option can be used to project the resulting off-site dose based on a "worst case" scenario in the event of a CNTMT failure resulting from CNTMT over-pressurization or explosive gas concentrations, or in preparation for venting of CNTMT per <PEI-T23>.

The DESIGN LEAKAGE option can be used to conservatively project the off-site dose consequences from the source term in CNTMT, in which CNTMT integrity is not threatened.

2. "Click" on either the DESIGN LEAKAGE or TOTAL FAILURE prompt.

NOTE: If "time since reactor power <4%" is less than 1 hour or not provided, the program will default to 1 hour.

3. Input or verify the appropriate information regarding radiation monitor readings, time since reactor power <4%, containment pressure, and filtration status; then "click" the OK button.

4. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

   a. Revise the release duration (in hours), if appropriate.

   b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

   c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

      1) Edit data if available under the VALUES TO USE column, or

      2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

   d. "Click" on the OK button when data is verified correct or when edited.

****

CAUTION

The Emergency Action Level determination based on projected dose is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

5. Verify that the Results - Screen 1 appears and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

6. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-Up Notification form.

   a. Verify that the data on the form is correct and complete all applicable items in Blocks #12 and #20 of form.

   b. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

6.5 Contingency - Fuel Handling Accident

1. "Click" on the Contingencies pulldown menu and select FUEL HANDLING. The "Fuel Handling Contingency" screen will appear.

2. "Click" on either the ACCIDENT IN CONTAINMENT or ACCIDENT IN FUEL HANDLING BLDG. prompt.

   NOTE 1: Bundle age equals "time since in core." If bundle age is not known, the program will default to using "time less than 4% power" as bundle age.

   NOTE 2: If "time since reactor power <4%" is less than 1 hour or not provided, the program will default to 1 hour.

3. Input or verify the appropriate information regarding bundle age, if known, and Filtration/FHBVS status; then "click" the OK button.

4. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

   a. Revise the release duration (in hours), if appropriate.

   b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

   c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

      1) Edit data if available under the VALUES TO USE column, or

      2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

   d. "Click" on the OK button when data is verified correct or when edited.

****

CAUTION

The Emergency Action Level determination, based on projected dose is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

5. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

6. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-Up Notification form.

   a. Verify that the data on the form is correct and complete all applicable items Blocks #12 and #20 of form.

   b. Obtain a printout by "clicking" on the PRINT button under the Form pulldown menu.

6.6 Radiation Monitoring Team (RMT) - Field Data

1. "Click" in the RMTs pulldown menu and select FIELD SAMPLE. The "RMT Air Samples" screen will appear.

2. Input the information for a projection based on either: Whole body readings (e.g., E-520) or field air sample (radioiodine) readings, as required in either Steps a or b below.

   NOTE: "Sector(s)" refers to the sectors illustrated on the 10 mile EPZ map posted in each emergency facility or in <EPI-B8>, Attachment 4.

   NOTE: If "time since reactor power <4%" is less than 1 hour or not provided, the program will default to 1 hour.

   a. For TEDE projection based on whole body readings, enter the following:

      - Location of reading
      - Sector(s)
      - Distance from plant (miles)
      - Time since Reactor Power <4% (hours)
      - Immersion Time (hours) - refers to projected plume exposure time at sample location
      - Closed window reading

OR

b. For CDEct projection based on air sample, enter the following:

- Location of sample
- Sector(s)
- Distance from plant (miles)
- Time since Reactor Power <4% (hours)
- Filter-adsorber reading (cpm)
- Bare-adsorber reading (cpm)
- Background reading (cpm)
- Immersion time (hours) - refers to actual elapsed time of release

3. Verify that the information is correct; then "click" the PROJECT button.

NOTE: If air sample data is entered, a Child Thyroid Dose is calculated for that particular air sample.

4. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

a. Revise the release duration (in hours), if appropriate.

b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

1) Edit data if available under the VALUES TO USE column, or

2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

d. "Click" on the OK button when data is verified correct or when edited.

****

CAUTION

The Emergency Action Level determination based on projected dose is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

5. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

6. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-Up Notification form.

   a. Verify that the data on the form is correct and complete all applicable items on Blocks #12 and #20 of form.

   b. If the PAR is to be revised, perform the following:

      1) "Click" on the PAR prompt

      2) Select one of the following options:

         a) DEFAULT (based on General Emergency default PARs per <EPI-B8>, Attachment 2).

         b) DOSE RATES (based on actual or projected dose per <EPI-B8>, Attachment 3).

   NOTE: The Follow-Up Notification Window will automatically be updated.

   c. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

7. Compare RMT data with dose projection data based on plume location and RMT sample time.

8. Accumulate dose calculations by "clicking" the INTEGRATED DOSE prompt (on Results - Screen 1) to update the file for the affected sector.

6.7 RMT - Iodine Cartridge Analysis

1. "Click" on the RMTs prompt and select ANALYZED CART. The "Analyzed Cartridge" screen will appear.

2. Input the appropriate isotopic concentrations and the distance from the plant in miles, at which the sample was taken; then "click" on the OK button.

3. Verify that the information entered and calculated "Committed Child Thyroid Dose Rate" are correct; then "click" the PROJECT button.

4. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

   a. Revise the release duration (in hours), if appropriate.

   b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

1) Edit data if available under the VALUES TO USE column, or

2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

d. "Click" on the OK button when data is verified correct or when edited.

****

CAUTION

The Emergency Action Level determination, based on projected dose, is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

5. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

6. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-Up Notification Form.

a. Verify that the data on the form is correct and complete all applicable items in Blocks #12 and #20 of form.

b. If the PAR is to be revised, perform the following:

1) "click" on the PAR prompt

2) Select one of the following options:

a) DEFAULT (based on General Emergency default PARs per <EPI-B8>, Attachment 2).

b) DOSE RATES (based on actual or projected dose per <EPI-B8>, Attachment 3).

NOTE: The Follow-Up Notification Window will automatically be updated.

c. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

7. Accumulate dose calculations by "clicking" the INTEGRATED DOSE prompt (on Results - Screen 1) to update the file for the affected sector.

6.8 Deposition Exposure Calculations

1. "Click" on the DEP. EXP. pulldown menu and select either DOSE RATE or FIELD SAMPLE.

   a. When DOSE RATE is selected, proceed to Step 4.

   b. When FIELD SAMPLE is selected, continue.

   NOTE: If "time since reactor power <4%" is less than 1 hour or not provided, the program will default to 1 hour.

2. On the "Deposition Exp. Calc - Field Sample" screen, input the appropriate isotopic concentrations (in pCi/sq meter), time since Reactor Power <4% (in hours), and location.

3. "Click" on either the YES or NO prompt to ADD SAMPLE TO AVERAGE; then "click" on the OK button. Proceed to Step 6.

4. On the "Deposition Exp. Calc - Dose Rate" screen, input the 1 meter dose rate (in mR/hr), and location.

5. "Click" on either the DEFAULT SPECTRUM or AVERAGE SPECTRUM prompt; then "click" on the OK button.

6. Verify that the information entered is correct, and review the first, second, and 50 year doses calculated.

7. "Click" on the PRINT button to provide a hard copy of the results.

6.9 Loss of Data Link from the Plant Integrated Computer System (ICS)

1. "Click" on the PROJECTION prompt and select EFFLUENT MONITORS. The Monitored Release Screen will appear.

2. Manually enter the following:

   a. Vent monitor reading and flows (from ICS/SDS terminals or Control Room/plant indications)

   NOTE: If "time since reactor power <4%" is less than 1 hour or is not provided, the program defaults to 1 hour.

   b. Time since reactor power <4% (in hours)

****

CAUTION

Source term is determined for each calculation using current plant conditions. **Actual core state must be verified with facility Operations staff before proceeding.**

****

c. Estimated "Source Term Used for Calculation Based on Core Condition".

d. Reduction factors, applied as indicated below for affected vent(s):

Unit 1 Vent

- Filtered
- System Plateout

Unit 2 Vent

- Filtered
- System Plateout

TB/HB Vent

- Unfiltered
- System Plateout

Off-Gas Vent

- Filtered
- System Plateout

Unmonitored Release

- Unfiltered

3. Continue "clicking" on the ANOTHER button until effluent monitors for all necessary elevated vent pathways have been selected; then "click" on the OK button. The Meteorological Data Screen will appear.

4. Verify meteorological data, release duration, and event classification on the Meteorological Data Screen:

a. Revise the release duration (in hours), if appropriate.

b. "Click" on either YES or NO prompt, as appropriate, based on the current event classification to respond to inquiry "Has a General Emergency been declared?"

c. When the meteorological tower is lost or the meteorological data is invalid ('magenta'), perform one of the following:

1) Edit data if available under the VALUES TO USE column, or

2) "Click" the ALT button and select the appropriate meteorological data based on visual conditions per <EPI-B7b>.

d. "Click" on the OK button when data is verified or when edited.

****

CAUTION

The Emergency Action Level determination based on projected dose, which is displayed on the Results - Screen 1, is for information only. This is NOT to be used in lieu of classification in accordance with <EPI-A1>.

****

5. Verify that the Results - Screen 1 appears, and "click" on the PRINT prompt under the File pulldown menu to provide a hard copy of the dose projection.

6. If requested, "Click" on the NOTIFICATION prompt to display Page 2 of 2 of the Follow-up Notification form.

a. Verify that the data on the form is correct and complete.

b. If the PAR is to be revised, perform the following:

1) "Click" on the PAR prompt

2) Select one of the following options:

a) DEFAULT (based on General Emergency default PARs per <EPI-B8>, Attachment 2).

b) DOSE RATES (based on actual or projected dose per <EPI-B8>, Attachment 3).

NOTE: The Follow-Up Notification Window will automatically be updated.

c. Obtain a printout by "clicking" on the PRINT prompt under the Form pulldown menu.

7. Accumulate the dose calculations by "clicking" on the INTEGRATED DOSE prompt (on Results - Screen 1) to update the file for the affected sector.

   NOTE: The "Accumulated Dose" window gives you results for the particular dose projection you are running. The window will allow you to look at previous doses, replace the old calculations with the current figures, and print the current values.

   Only the terminal designated as the "Master" will be able to save data to a common file. If not the "Master", data is saved only at the local PC.

6.10 CADAP Program Utilities

1. "Click" on the UTILITIES prompt. A list of features and their use will be explained by the following steps:

   a. The Alarm feature is used to alert the user when a parameter increases or decreases by the specified percentage. When the input to CADAP increases by the percentage listed in the window, then the ICS window will automatically display and the alarming parameter will flash.

      This percentage can be edited by the user as well as being turned on and off by "clicking" the appropriate button. When editing is complete, "click" the OK button.

   b. The Note Pad feature is used to store information by the user. To use this feature, "click" on NOTE PAD under the Utilities prompt from the CADAP Screen or the NOTES prompt on the Results - Screen 1 or Notification Screen, type in the desired information, then "click" on the OK button. To erase information in the Note Window, "click" the CLEAR button.

   c. The Master Terminal feature allows the PC selected as the master to be the only one that can have input data saved to the plant Integrated Computer System (ICS). Other PC's can run the program, but only the "MASTER" can change the saved data. To use this feature, refer to Section 5.1.7.

   d. The View Calculation feature allows the user to view the last dose projection performed. This is used for quick reference. To use this, click the VIEW CALCULATION prompt and select Results or Notification; review the information, and when complete, "click" on the CLOSE prompt to return to the main CADAP window.

   e. The Calculator feature is a computer calculator to be used by the user. To use this feature, "click" the CALCULATOR prompt, and a Calculator window appears. The user must use the mouse to "click" on the appropriate calculator keys. When finished, close the window return to the Main CADAP window.

6.11 Exiting the CADAP Program

1. On the main CADAP screen, "click" on the Projections pulldown menu and select the Exit prompt. This will exit the program and return to the desktop.

2. If at the State EOC, disconnect from the network, and continue.

3. Shutdown the computer using the Standard Windows procedure (Start, Shutdown), and turn off the Computer and Monitor.

6.12 Records

6.12.1 Records Handling

1. All records generated by this procedure should be turned over to EPU for disposition.

6.12.2 Records Capture

The following records are generated by this procedure:

Quality Assurance Records

None

Non-Quality Records

Dose Projections

Follow-up Notification Forms

CADAP Logic Flowchart