

Lewis Sumner
Vice President
Hatch Project Support

**Southern Nuclear
Operating Company, Inc.**
40 Inverness Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.7279
Fax 205.992.0341



Docket Nos. 50-321
50-366

HL-6006

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant
Emergency Implementing Procedure Revision

Ladies and Gentlemen:

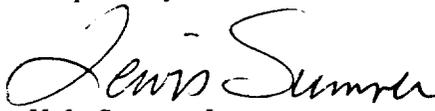
In accordance with 10 CFR 50, Appendix E, Section V, Southern Nuclear Operating Company hereby submits the following revision to the Plant Hatch Emergency Implementing Procedures (EIPs):

<u>EIP No.</u>	<u>Revision</u>	<u>Effective Date</u>	<u>Comments</u>
73EP-EIP-015-0S	5	9/25/00	Administrative changes

By copy of this letter, Mr. L. A. Reyes, NRC Region II Administrator, will receive two copies of the revised procedure.

Should you have any questions, please contact this office.

Respectfully submitted,


H. L. Sumner, Jr.

SRP/sp

Enclosure: 73EP-EIP-015-0S, Offsite Dose Assessment

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
SNC Document Management (R-Type A02.001)

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. N. Olshan, Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

A045

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EXPIRATION DATE:	APPROVALS: DEPARTMENT MANAGER		JCL	DATE 9/22/00
N/A	NPGM/POAGM/PSAGM		JAB	DATE 9/22/00
				EFFECTIVE DATE: 9/25/2000

1.0 OBJECTIVE

To provide dose assessments during abnormal (emergency) conditions.

2.0 APPLICABILITY

This procedure applies to the onsite dose assessment activities for assessing offsite radiological releases during emergency conditions. It may NOT be used for assessing normal or routine operating releases. This procedure will be performed as necessary.

3.0 REFERENCES

- 3.1 10AC-MGR-006-0S, Hatch Emergency Plan
- 3.2 20AC-ADM-002-0S, Quality Assurance Records Administration
- 3.3 EPA-400-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
- 3.4 73EP-EIP-018-0S, Prompt Offsite Dose Assessment
- 3.5 73EP-EIP-001-0S, Emergency Classification and Initial Actions
- 3.6 73EP-EIP-054-0S, Protective Action Recommendations to State and Local Authorities
- 3.7 Forms:
 - TRN-0052, MIDAS Input Data Acquisition
 - TRN-0145, Release Rate Estimates & Dose Projections (Based on Other Plant Instrumentation)

4.0 REQUIREMENTS

4.1 PERSONNEL REQUIREMENTS

Personnel who perform dose assessment activities will receive training in accordance with plant training procedures and be instructed in the use of the dose assessment computer model and this procedure.

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4.2 MATERIAL AND EQUIPMENT

Meteorological Information and Dispersion Assessment System (MIDAS)

The system requirements for the MIDAS dose assessment program are:

Component	Minimum system	Recommended system
CPU	486 DX with math coprocessor	586 DX (Pentium)
Speed	50 MHz	133 MHz (or higher)
RAM	16 MB (greater speed is achieved through use of a RAM disk (8 MB))	32 MB
Hard Disk	240 MB	480 MB
Floppy drive	1.44 MB	1.44 MB
Interface	Mouse	Mouse
Monitor	VGA	VGA
Ports	1 parallel, 2 serial	1 parallel, 2 serial
Keyboard	101	101
Operating system	DOS 5.0 or higher	DOS 6.0 or higher
Printer	HP deskjet 550 C	HP deskjet 550 C

4.3 SPECIAL REQUIREMENTS

N/A - not applicable to this procedure

5.0 PRECAUTIONS/LIMITATIONS

5.1 PRECAUTIONS

N/A - not applicable to this procedure

5.2 LIMITATIONS

- 5.2.1 This procedure must NOT be used to calculate dose projections for normal releases. The MIDAS code has accident isotopic mixes built in to the support files which will yield a false high value for daily operating releases.
- 5.2.2 This procedure can NOT be used to downgrade the severity of an emergency classification.
- 5.2.3 This procedure is based upon using the Meteorological Information and Dispersion Assessment System (MIDAS) for calculating indications of offsite dose and dose rates. MIDAS utilizes data from radiological and meteorological plant instrumentation. Readings may be obtained from SPDS, Control Room monitors, EOF Met MIDAS computer system and/or locally at the instruments.

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NOTE

Values obtained from MIDAS for the purpose of Protective Action Recommendations are based on the avoided dose concept.

5.2.4 For the purpose of Protective Action Recommendations (PARs), the TEDE and Thyroid CDE values for 1 mile (Site Boundary), 2 miles, 5 miles, and 10 miles from the printed ENN Worksheet provided by MIDAS may be utilized.

6.0 PREREQUISITES

An off-normal plant condition, emergency exercise/drill or declared emergency must exist before using this procedure.

REFERENCE

7.0 PROCEDURE

7.1 SYSTEM START-UP

NOTE

General instructions for the use of the MIDAS code are found in Attachment 1, MIDAS Data Input Acquisition.

- 7.1.1 Turn on the computer containing the MIDAS system files.
- 7.1.2 The computer will automatically "boot" into the MIDAS subdirectory and start the program.
- 7.1.3 When prompted by the computer, enter the current date (formatted as mm-dd-yy) and time (formatted 00:00:00.00 a/p). IF the current date and time are correct, press "Enter".

7.2 DATA ACQUISITION

The MIDAS code requires the input of meteorological and radiological data. The data required is listed in TRN-0052, MIDAS Data Input Acquisition. TRN-0052 may be used to gather data for input. Data is to be gathered in accordance with the following steps.

NOTES

Record readings from the appropriate computer system or monitors that are listed in TRN-0052. Record only valid readings as defined in the sections below. Obtaining release and meteorological information from a recorder that does not provide 15-minute averaging is less accurate. The data trend and the timeframe required to obtain a number will be considered when determining values from these recorders. Use of a visual estimation to perform a projection is acceptable when the data trend is factored into the estimation.

7.2.1 15 Minute Average Meteorological Parameters

- 7.2.1.1 The primary and backup meteorological tower(s) can be read from the Main Control Room recorders, the EOF Met MIDAS computer system, and on the "MISCELLANEOUS" screen on SPDS under "MET DATA".
- 7.2.1.2 SPDS and the Met MIDAS computer systems provide a calculated 15 minute average in addition to instantaneous readings and will normally be utilized. The Main Control Room readings that are on recorders require visual averaging (the last 15 minute period).
- 7.2.7.3 Record readings from the appropriate Meteorological Instrumentation listed in TRN-0052 Page 1 of 3, Meteorological Data Entry. IF the primary Meteorological Instrumentation listed is unavailable, THEN use TRN-0052 page 2 of 3, Alternate Meteorological Instrument Designation for Dose Assessment Use, to determine which Meteorological Instrumentation can be utilized.

7.2.2 Release Parameters

- 7.2.2.1 Release monitoring (source term information) for the Unit 1 Rx Bldg Vent Stack, Unit 2 Rx Bldg Vent Stack and Main Stack is accomplished through a normal and accident range (KAMAN) monitor. On a high-high signal of the normal range monitor, the KAMAN auto starts and the normal range sample flow is diverted to the KAMAN. The value indicated on the SPDS "PRIMARY" screen is the corrected source term ($\mu\text{Ci/cc}$) based on normal range activity multiplied by the calibration factor.
- 7.2.2.2 In the event that control room flow instruments are inoperable or unreliable, the default flow values listed on TRN-0052 may be utilized for input.
- 7.2.2.3 IF it is determined that the normal range effluent monitor is offscale high AND the accident range instrumentation (KAMAN) does not function properly for the Main Stack, Unit 1 Rx Bldg Vent, or Unit 2 Rx Bldg Vent monitors, THEN go to TRN-0145, to calculate the release rate and dose projection(s) based on other plant instrumentation.
- 7.2.2.4 IF there is a difference between the A and B channel readings for the Unit 1 Rx Bldg Stack Vent monitor (1D11-R619 A/B), Unit 2 Rx Bldg Stack Vent Monitors (2D11-R619 A/B) or Main Stack monitor readings (1D11-R600 A/B), THEN use the most conservative (higher) reading for input into MIDAS.

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- 7.2.2.5 Record readings from the appropriate effluent monitors. Appropriate effluent monitors are listed in TRN-0052 Page 3 of 3, Radiological Data Entry. Record only valid readings. Record either Normal Range or Accident Range Effluent Monitor (KAMAN) value and the flow associated with that value. Do NOT record or enter both monitors or both flows. MIDAS will sum the releases and significantly overestimate the dose rate and projected dose outputs.

NOTE

The MIDAS software contains multiple options for performing Dose Assessment activities. These options are described in Attachment 2, Description of MIDAS Menu Options. IF performing non-routine projections or other dose assessment activities, use Attachment 2 to determine the menu option appropriate to the activity being performed or abnormal plant conditions under which projections must be performed.

7.3 SELECTION OF THE MIDAS DOSE ASSESSMENT MENU OPTION

- 7.3.1 There are three (3) basic options normally utilized by the Dose Assessment Staff for routine activities.

7.3.1.1 The normal dose assessment option for performing routine dose rate and dose projections from available plant release monitors is Menu B, Enhanced Dose Projection. To run this menu option proceed to 7.4, Method for the Determination of Offsite Dose Rates and Dose Projections.

7.3.1.2 The normal dose assessment option for performing routine dose rate and dose projections from available in-plant monitors or performing comparisons with the State's dose assessment model is the "PLANT HATCH GROSS ACTIVITY RELEASE RATE" option. To run this menu option proceed to Section 7.5, Plant Hatch Gross Activity Release Rate Option.

7.3.1.3 The normal dose assessment option for performing routine dose rate and dose projections from an unmonitored release or validation projections using Field Team data is Menu E-W, Back Calculations. To run this menu option proceed to Section 7.6, Back Calculation (Menu E-W).

- 7.3.2 Several other options are available to perform other dose assessment activities and perform projections from extreme plant condition. These option are described in Attachment 2 and Section 7.7, Other Options. Inform the Dose Assessment Managers on which menu option is being performed and the conditions that required the selection before proceeding. These options can be run as follows.

7.3.2.1 Review the descriptions of the menu options detailed in Attachment 2. Determine which option is required to perform the activity or best fits the current conditions.

7.3.2.2 From the SITE SELECTION menu screen, select "PLANT HATCH". The selection will illuminate.

- 7.3.2.3 Select "CONFIRM". The FUNCTION SELECTION menu screen will be displayed.

NOTE

The FUNCTION SELECTION menu screen contains two options. The "RECAP DOSE CALCULATIONS" option allows the user to recap a dose projection following an inadvertent error. The normal choice from the function selection menu will be the "ACCIDENT DOSE CALCULATIONS" option.

- 7.3.2.4 From the FUNCTION SELECTION menu screen, select "ACCIDENT DOSE CALCULATIONS". The selection will illuminate.
- 7.4.1.5 Select "CONFIRM". The ACCIDENT DOSE CALCULATIONS menu screen will be displayed.
- 7.3.2.6 From the ACCIDENT DOSE CALCULATIONS Menu screen choose the menu option selected from Attachment 2. The selection will illuminate.
- 7.3.2.7 Refer to the appropriate menu option in Section 7.7, Other Options, for additional information on the option selected.

NOTE

The some of the options available in Section 7.7 have different input screens and output options available than the normal options utilized. The general program conventions from Attachment 1 will still apply. General guidance is provided in Section 7.7 for each option to aid the using in running the selected option.

- 7.3. Perform additional dose projections in accordance with subsections 7.2, Data Acquisition and 7.3, Selection of MIDAS MENU Options, as required. Dose projections will be performed until the event is terminated or until such time that the Emergency Director, in consultation with Federal, State and Local authorities, determines that dose projections are no longer required.

7.4 METHOD FOR THE DETERMINATION OF OFFSITE DOSE RATES AND DOSE PROJECTIONS

- 7.4.1 From the SITE SELECTION menu screen, select "PLANT HATCH". The selection will illuminate.
- 7.4.1.1 Select "CONFIRM".

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NOTE

The FUNCTION SELECTION menu screen contains two options. The "RECAP DOSE CALCULATIONS" option allows the user to recap a dose projection following an inadvertent error. The normal choice from the function selection menu will be the "ACCIDENT DOSE CALCULATIONS" option.

7.4.1.2 From the FUNCTION SELECTION menu screen, select "ACCIDENT DOSE CALCULATIONS". The selection will illuminate.

7.4.1.3 Select "CONFIRM".

NOTE

The ACCIDENT DOSE CALCULATIONS menu screen contains several options. Normal dose assessment routines will be run utilizing "ENHANCED DOSE PROJECTION MENU B". The remaining options will be reserved for special circumstances as outlined in subsection 7.6, BACK CALCULATION (MENU E-W) AND 7.7, OTHER OPTIONS.

7.4.1.4 From the ACCIDENT DOSE CALCULATIONS Menu screen select "ENHANCED DOSE PROJECTION MENU B". The selection will illuminate.

7.4.1.5 Select "CONFIRM".

NOTE

The selection of a specific release point will define how the METEOROLOGICAL DATA spreadsheet and GASEOUS VENT AND FLOW spreadsheet are built. If only elevated or ground level is selected the spreadsheet will NOT have data input fields for the other release point. This will require the user to restart MIDAS, re-initialize the spreadsheets, and input the data again if the non-selected release point becomes active later in the event. IF both release points are selected, data can be enter for only one on the spreadsheets. This will cause a warning to be displayed which can be bypassed. The program will run without adversely affecting the output.

7.4.1.6 The MISCELLANEOUS PARAMETER menu screen will appear. Release points may be selected as appropriate.

7.4.1.7 Select "CONFIRM".

7.4.1.8 The SCENARIO DATA TABLE CONTROL menu screen will appear. You may perform an initial projection or an update projection.

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- 7.4.1.8.1 To perform an initial projection, select "START NEW SCENARIO" to initialize the dose projection spreadsheets. A warning will appear to verify that you wish to initialize. Select "CONFIRM" to continue.
- 7.4.1.8.2 To perform an update projection, select "CURRENT SCENARIO EDIT". Select "CONFIRM" to continue.
- 7.4.2 The METEOROLOGICAL DATA spreadsheet will appear. Enter meteorological data from TRN-0052 as required by the spreadsheet at the current time. The current time frame will be illuminated. If performing an update, data previously entered will be displayed. The meteorological data previously entered will "persist" for the current time if no current data is available or insignificant change has occurred.
- 7.4.3 Depress the "X" key to save the data on the spreadsheet and exit to the remainder of the program.

CAUTION

RELEASE POINT MONITOR DATA MAY BE DISPLAYED ON SPDS IN UNITS OTHER THAN THOSE REQUIRED BY MIDAS. IF USING SPDS FOR DATA ACQUISITION, CHECK ALL UNITS TO ENSURE THAT THE UNITS MATCH THOSE REQUIRED BY MIDAS. SPDS MAY DISPLAY THE SAME MONITOR ON DIFFERENT SCREENS IN THE APPROPRIATE UNIT.

- 7.4.4 The GASEOUS VENT AND FLOW spreadsheet will appear. Enter the data from TRN-0052, Page 3 of 3, as required by the spreadsheet at the current time. The current time frame will be illuminated. Radiological data will NOT "persist", failure to enter data for the current 15 minute time period will be interpreted as a termination of the release. If performing an update, data previously entered will be displayed.

CAUTION

THE GASEOUS VENT AND FLOW SPREADSHEET CONTAINS (12) DATA COLUMNS OF WHICH (8) DATA COLUMNS ARE INITIAL DISPLAYED. THE ADDITIONAL (4) DATA COLUMNS CAN BE DISPLAYED BY USING THE "RIGHT" ARROW KEY ONCE DATA HAS BEEN ENTERED IN THE 8 DATA COLUMNS SHOWN ON THE SCREEN. FAILURE TO ENTER DATA FOR EACH RELEASE POINT WILL RESULT IN A POTENTIAL UNDERESTIMATE OF THE OFFSITE DOSE RATE AND DOSE PROJECTION.

- 7.4.5 Depress the "X" key to save the data on the spreadsheet and exit to the remainder of the program.
- 7.4.6 The DBA ACCIDENT TYPE SELECTION menu screen will appear. Select the appropriate accident type, select "CONFIRM" to continue. Guidance for selecting the appropriate accident type is found in Attachment 3.

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CAUTION

IF THE REMAINING DURATION OF THE RELEASE IS UNKNOWN, THE DEFAULT
REMAINING DURATION OF 240 MINUTES (4 HOURS) WILL BE UTILIZED.

- 7.4.7 The RELEASE TIMING SELECTION menu screen will appear. The "DURATION" field will display the total number of minutes from the onset to the end of the estimated remaining duration of the release. The "REMAINING DURATION" field will display a default release duration of 240 minutes
- 7.4.7.1 IF the REMAINING DURATION is acceptable, select "CONFIRM" to continue.
- 7.4.7.2 IF the "REMAINING DURATION" is determined to be some time period other than 240 minutes, enter the remaining duration in minutes and select "CONFIRM" to continue. IF an alternate release duration is entered, ensure that offsite (State of Ga or NRC) Dose Assessment Staffs that are evaluating the release are informed of the change.
- 7.4.8 MIDAS will display a plot of the Total Effective Dose Equivalent (TEDE) rate based on a 0.25 hour (15 minute) projection. The display gives an estimated peak TEDE Dose Rate value at or beyond the site boundary. The display also includes the direction and distance for this value.
- 7.4.8.1 The current calculated daily average site dose rate is $\approx E-03$ mR/hr. IF the peak TEDE dose rate (mR/hr) value is an order of magnitude (10 times) higher than this value $\approx E-02$ mR/hr AND an emergency has been declared THEN notify the Dose Assessment Manager and Emergency Director that a radioactive release is in progress.
- 7.4.8.2 IF the peak TEDE Dose Rate value exceeds .057 mR/hr. ($5.7 E-2$ mR/hr) THEN notify the Dose Assessment Manager and Emergency Director for emergency classification purposes AND notify the affected Unit Shift Supervisor for possible EOP Actions.
- 7.4.9 MIDAS will print a working copy of the ENN Form. The values listed on line 13 of the working copy of the ENN Form will be utilized for the purpose of making Protective Action Recommendations (PARs) to state and local authorities based on dose projections. IF required, PARs will be made in accordance with 73EP-EIP-054-0S, Protective Action Recommendations.
- 7.4.9.1 IF additional printouts of the working copy of the Emergency Notification Form are needed or it does not print properly, attempt to correct the problem with the printer, if appropriate.
- 7.4.9.2 Select "CONTINUE" from the TEDE RATE PLOT Screen, then select "NEXT REPORT", then "MORE REPORTS" which will display the available report selections. Select the option "SEND STATE REPORT TO PRINTER", then select "CONFIRM". This will send the working copy of the ENN Form to the printer.

- 7.4.10 Report the TEDE and Thyroid CDE values from line 13 of the working copy of the ENN Form to the Dose Assessment Manager and Emergency Director. IF this printout is not available, the information may be obtained from the TEDE 4-day and Thyroid CDE report options under more reports. Values will be based on the 4 hour projection period.

NOTE

You may elect to continue your evaluation of this projection or exit to perform an update projection.

- 7.4.11 To view additional reports, select "CONTINUE", then "NEXT REPORT", then "MORE REPORTS" and select the report required and "CONFIRM" to continue.
- 7.4.12 To exit, select "CONTINUE", then "NEXT REPORT", then "MORE REPORTS" and then select "EXIT". This will return you to the FUNCTION SELECTION menu screen.
- 7.4.13 Perform additional dose projections in accordance with subsections 7.2, Data Acquisition and 7.3, Selection of MIDAS MENU Options, as required. Dose projections will be performed until the event is terminated or until such time that the Emergency Director, in consultation with Federal, State and Local authorities, determines that dose projections are no longer required.
- 7.5 Plant Hatch Gross Activity Release Rate Option

NOTE

The Plant Hatch Gross Activity Release Rate option is utilized to perform comparison calculations with the State of Georgia and projections based on in-plant instrumentation. It accepts input for either a Main Stack (elevated) or Reactor Building (ground) release rate for noble gases, iodines, and particulates. Projections are performed using the standard Class B model and allow the user to select the Isotopic Mix to apply to the calculations.

- 7.5.1 From the SITE SELECTION menu screen, select "PLANT HATCH GROSS ACTIVITY RELEASE RATE". The selection will illuminate, select "CONFIRM" to continue.
- 7.5.2 From the FUNCTION SELECTION menu screen, select "ACCIDENT DOSE CALCULATIONS". The selection will illuminate, select "CONFIRM" to continue.
- 7.5.3 The SCENARIO DATA TABLE CONTROL menu screen will appear. You may perform an initial projection or an update projection.
- 7.5.3.1 To perform an initial projection, select "START NEW SCENARIO" to initialize the dose projection spreadsheets. A warning will appear to verify that you wish to initialize. Select "CONFIRM" to continue.

- 7.5.3.2 To perform an update projection, select "CURRENT SCENARIO EDIT" to perform an update calculation.
- 7.5.4 The METEOROLOGICAL DATA spreadsheet will appear. Enter meteorological data from TRN-0052 as required by the spreadsheet at the current time. The data will normally be collected as described in Section 7.2.7, 15 Minute Average Meteorological Parameters. The current time frame will be illuminated. If performing an update, data previously entered will be displayed. The meteorological data previously entered will "persist" for the current time if no current data is available or insignificant change has occurred. Depress the "X" key to save the data on the spreadsheet and exit to the remainder of the program.
- 7.5.5 The GASEOUS VENT AND FLOW spreadsheet will appear. Enter the data as required by the spreadsheet at the current time. The data may be obtained from line 12 on a MIDAS working copy of the ENN form or an actual ENN form if a comparison to the State of Georgia is being performed or from TRN-0145 in using in-plant monitors to perform dose and dose rate estimates. The current time frame will be illuminated. If performing an update, data previously entered will be displayed. Depress the "X" key to save the data on the spreadsheet and exit to the remainder of the program.
- NOTE

The GASEOUS VENT AND FLOW spreadsheet for this program option contains 6 data columns. The first three labeled STK-NG release, STK-I release, and STK-P release are for inputting gross activity release rate (Ci/sec) from an elevated release. The second three labeled GND-NG release, GND-I release, and GND-P release are for inputting gross activity release rate (Ci/sec) from a ground level release
- 7.5.6 The DBA ACCIDENT TYPE SELECTION menu screen will appear. Select the appropriate accident type, select "CONFIRM" to continue. Guidance for selecting the appropriate accident type may be found in Attachment 3.
- 7.5.7 The RELEASE TIMING menu screen will appear. The "DURATION" and "REMAINING DURATION" fields will display the default release duration of 240 minutes displayed. If performing an update the "DURATION" field will display a value equal to 240 minutes plus the previous release times.
- 7.5.7.1 Enter the "REMAINING DURATION" if different from the default time and select "CONFIRM" to continue. IF an alternate release duration is entered, ensure that offsite (State of Georgia or NRC) Dose Assessment Staffs that are evaluating the release are informed of the change.
- 7.5.8 The RELEASE POINT DATA summary and SUMMARY OF METEOROLOGICAL DATA reports will appear, after reviewing the data select "CONTINUE" for each screen to proceed.

- 7.5.9 The output options for the projection are similar to those found in the Enhanced Dose Projection Menu B found in Section 7.4.8 and 7.4.9.
- 7.5.10 To exit, select "CONTINUE", then "NEXT REPORT", then "MORE REPORTS" and then select "EXIT". This will return you to the FUNCTION SELECTION menu screen.
- 7.5.11 Perform additional dose projections in accordance with subsections 7.2, Data Acquisition and 7.3, Selection of MIDAS MENU Options, as required. Dose projections will be performed until the event is terminated or until such time that the Emergency Director, in consultation with Federal, State and Local authorities, determines that dose projections are no longer required.
- 7.6 BACK CALCULATION (MENU E-W)

NOTE

This option will be utilized when field monitoring dose rate projections from the Menu B model differ significantly from actual field measurements, when effluent monitors are NOT available, or when an unmonitored release is occurring. This calculation uses input of a centerline field monitor Effective Dose Equivalent (EDE) (closed window gamma) reading, the distance of the reading from the plant, Time from release start to sample time, and an accident type in a straight line projection model to make a back calculation to estimate the release rate for the specified isotopic mix. The release rate is applied to the standard Class B puff model to perform projections.

- 7.6.1 From the SITE SELECTION menu screen, select "PLANT HATCH". The selection will illuminate, select "CONFIRM" to continue.
- 7.6.2 From the FUNCTION SELECTION menu screen, select "ACCIDENT DOSE CALCULATIONS". The selection will illuminate. Select "Confirm" to continue.
- 7.6.2.1 From the ACCIDENT DOSE CALCULATIONS menu screen, select "BACK CALCULATION MENU E-W". The selection will illuminate. Select "CONFIRM" to continue.
- 7.6.2.2 The SCENARIO DATA TABLE CONTROL menu screen will appear. You may perform an initial projection or an update projection.
- 7.6.2.2.1 To perform an initial projection, select "START NEW SCENARIO" to initialize the dose projection spreadsheets. A warning will appear to verify that you wish to initialize. Select "CONFIRM" to continue.
- 7.6.2.2.2 To perform an update projection, select "CURRENT SCENARIO EDIT" to perform an update calculation. Select "CONFIRM" to continue.

CAUTION

METEOROLOGICAL DATA MUST BE ENTERED FOR THE EARLIEST 15 MINUTE TIME PERIOD INDICATED ON THE FIELD MONITOR PARAMETER SELECTION MENU SCREEN (SECTION 7.6.2.5). IF DATA IS NOT AVAILABLE FOR THE TIME CALCULATED FROM THE "TIME FROM THE START TO CURRENT" INPUT MIDAS WILL GIVE AN ERROR MESSAGE.

- 7.6.2.3 The METEOROLOGICAL DATA spreadsheet will appear. Enter the meteorological data from TRN-0052 as required by the spreadsheet at the current time. The data should be collected as described in Section 7.2.1, 15 Minute Average Meteorological Parameters. The current time frame will be illuminated. If performing an update, data previously entered will be displayed. The meteorological data previously entered will "persist" for the current time if no current data is available or insignificant change has occurred. Depress the "X" key to save the data on the spreadsheet and exit to the remainder of the program.
- 7.6.2.4 The DBA ACCIDENT TYPE SELECTION menu screen will appear. Select the appropriate accident type and "CONFIRM" to continue. Guidance for selecting the appropriate accident type may be found in Attachment 3.

CAUTION

DATA ENTERED ON THE FIELD MONITOR PARAMETER SELECTION MENU SCREEN MUST BE LOGICAL. FOR EXAMPLE, THE "DISTANCE FROM PLANT" AND THE "TIME FROM THE START TO CURRENT" INPUTS MUST BE SUPPORTED BY THE WIND SPEED DATA PROVIDED ON THE METEOROLOGICAL DATA SPREADSHEET. MIDAS WILL GIVE AN ERROR MESSAGE IF THESE INPUTS DO NOT REASONABLY ALLOW FOR THE INDICATED CONDITIONS.

- 7.6.2.5 The FIELD MONITOR PARAMETER SELECTION menu screen will appear. Select the release point, either "STACK" or "GROUND". Enter the "FIELD MONITOR READING" (Centerline closed window reading from the External RETs) in mR/Hr and the "DISTANCE FROM PLANT" in miles. Enter the "TIME FROM THE START TO CURRENT", which is the start of the release to the time of the reading. Enter the "DIRECTION OF FIELD SAMPLE", which is the direction of the sample point. Select "CONFIRM" to continue.

NOTE

"DIRECTION OF FIELD SAMPLE" is a reference data point only and NOT used for performing dose projections. If the reported conditions from external RETs warrant changing the wind direction indicated by plant instrumentation it must be done on the meteorological spreadsheet. Multiple field team readings will normally be obtained and confirmed before change the wind direction.

- 7.6.2.6 The RELEASE TIMING menu screen will appear. The "DURATION" field will display the total number of minutes from onset to the end of the estimated duration of the release. The "REMAINING DURATION" field will display the default release duration of 240 minutes.
- 7.6.2.6.1 IF the default "REMAINING DURATION" of 240 minutes is acceptable select "CONFIRM" to continue.
- 7.6.2.6.2 IF the "REMAINING DURATION" is determined to be some time period other than 240 minutes, enter the remaining duration time in minutes and select "CONFIRM" to continue. IF an alternate release duration is entered, ensure that offsite (State of Georgia or NRC) Dose Assessment Staffs that are evaluating the release are informed of the change.
- 7.6.2.7 The RELEASE POINT DATA summary report and SUMMARY OF METEOROLOGICAL DATA will appear, after reviewing the data, select "CONTINUE" for each screen to proceed.
- 7.6.2.8 The output options for the projection are similar to those found in the Enhanced Dose Projection Menu B found in Section 7.4.8 through 7.4.11.
- 7.6.3 To exit, select "CONTINUE", then "NEXT REPORT", then "MORE REPORTS" and then select "EXIT". This will return you to the FUNCTION SELECTION menu screen.
- 7.6.4 Perform additional dose projections in accordance with subsections 7.2, Data Acquisition and 7.3 Selection of MIDAS MENU Options, as required. Dose projections will be performed until the event is terminated or until such time that the Emergency Director, in consultation with Federal, State and Local authorities, determines that dose projections are no longer required.

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7.7 OTHER OPTIONS

7.7.1 Prompt Offsite Dose

This model is utilized in the Control Room. Instructions for running the Control Room version of MIDAS are found in 73EP-EIP-018-0S, Prompt Offsite Dose Assessment.

CAUTION

THE MIDAS PROGRAM OPTIONS DESCRIBED IN SECTIONS 7.7.2 AND 7.7.3 ARE BASED ON REFERENCE PLANTS. THESE MODELS USE CONSERVATIVE ASSUMPTIONS, GROSS ESTIMATES OF INITIAL SOURCE TERM, AND VERY SIMPLISTIC DISPERSION MODELS. THEY WILL NOT BE USED UNLESS OTHER MORE RELIABLE METHODS USING ACTUAL PLANT MONITORS OR FIELD TEAM DATA ARE UNAVAILABLE.

7.7.2 Event Tree NUREG 1228 (Menu C)

This menu option will step the user through the event tree outlined in NUREG 1228. This option is utilized when source terms are not readily available. The functions and assumptions are taken from NUREG 1228 and RTM-92. Options are selected from the screen following "top down" logic. The user will select the release type from the currently displayed row of options, then the next row of options will be displayed. Release fractions are read from a data file after all release conditions are selected. This model makes the assumption that all releases are ground level.

7.7.3 Class 9 Accidents (Menu D)

This menu option lists the BWR types default assumptions for a severe degraded core. Containment failure accidents based on the WASH-1400 study are available in this option. This option is utilized when source terms are not readily available. Assumptions for the default class 9 accidents are listed in Attachment 4.

7.7.4 Total Dose (Menu F)

This menu option calculates the total committed integrated dose for the accident. Calculations are made by combining doses from the three basic pathways (direct exposure from the plume, direct exposure from the ground contamination, and inhalation from immersion in the plume). The plume dose is computed by a finite plumespine dose model. Calculations of TEDE, thyroid CDE and 1 year skin dose equivalents are made utilizing the dose factors provided in EPA-400. The finite plume model is utilized for off centerline "sidespine" calculations and for elevated releases. It is important to note that the system accounts for plume depletion.

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7.7.5 Advanced Calculations (Menu X)

This option allows the user to enter isotopes from actual grab samples. This menu option contains all options from other menu choices. Due to the complexity of the model and the time required to perform projections, this option should NOT be used for routine projections. The number of isotopes programmed into MIDAS is limited. The MIDAS system manager should be contacted to modify the preprogrammed isotope list prior to running this option.

7.6 DOCUMENTATION AND RECORDS

Records generated during actual emergencies will be maintained in accordance with 20AC-ADM-002-0S, Quality Assurance Records Administration.

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ATTACHMENT <u>1</u>		Att. Pg. 1 of 1
TITLE: GENERIC SCREEN GUIDELINES		

GENERIC SCREEN GUIDELINES

This set of general instructions applies to all methods of dose projection utilizing MIDAS.

- MIDAS utilizes a "point and click" feature for all menu applications.
- Menu choices will illuminate when selected with the mouse. Invalid choices will not illuminate.
- Menu choices backlit in red indicate important selectors
- All menu selections must be "confirmed". This is accomplished by selecting the "CONFIRM" option on the screen with the mouse.
- The NUMPAD is used to enter data which may be required as a result of selecting a box on the screen
- "EXIT" is used to stop processing and return to the function menu. A double click is required.
- "CONFIRM" is used to save selections and display the next screen
- "RESET" will clear box selections if "clicked" once and will reset the user to the previous screen(s) if "clicked" twice. On the first screen (Accident Run Menu) reset has no effect.
- Selecting "CONFIRM" before selecting the required boxes will result in a beep and no changes will be made.

NUMPAD DATA ENTRY

- IF the NUMPAD was selected by mistake, select "EN" to return to the main screen
- IF the entry is NOT complete or NOT valid, selecting "EN" will NOT be accepted
- To correct an erroneous entry into the NUMPAD, select "EN" with the display box empty.
- IF reset is selected after a NUMPAD entry has been completed ("EN" is selected), THEN all of the data for every screen box will be cleared.
- To clear data for any one screen box, select the box and redefine the data value (do not use reset since all boxes will be cleared).
- Plus signs are not necessary but minus signs are required for negative numbers including exponential notation (e.g., 1E-6).
- On the meteorological screen, stability class may be entered as a letter between A and G. In this case the NUMPAD will contain each letter
- Red warning message will appear when there is a problem with data that makes it impossible to continue the calculations. Selecting continue will allow you to correct the erroneous data. Selecting "EXIT" will return you to the menu selection screen

TITLE: DESCRIPTION OF MIDAS MENU OPTIONS

Description of MIDAS Menu Options

Available Options					
Site Selection	Menu	Procedure/ Section	Used By	Purpose	Special Instructions & Limitations
Plant Hatch	Menu A Prompt Offsite Dose Assessment	73-EP-EIP-018	Control Room Operators	Primary Menu for <u>Prompt</u> Dose Assessment	Primarily used is in the Control Room. This option has limited capabilities and does <u>NOT</u> allow changes to Isotopic Mix. It is designed to allow dose projections with minimum operator input and training. It should <u>NOT</u> normally be used if the TSC and EOF to perform Dose Assessment activities.
	Menu B Enhanced Dose Projection	Section 7.4	TSC & EOF DA staff	<u>Primary</u> Menu for TSC/EOF Dose Assessment	This is the normally used menu to perform dose projection when release information is available and Field Team data is more conservative than or supports the routine projections.
	Menu C NUREG 1228 Event Tree	Section 7.7	EOF DA staff	Provides estimated offsite dose when <u>ALL</u> release monitor and in-plant data is unavailable and E-RET are <u>CANNOT</u> dispatched	This model is <u>NOT</u> appropriate for dose assessment activities unless <u>ALL</u> release monitors and in-plant monitors are <u>NOT</u> available <u>AND</u> field team cannot be dispatched. It uses grossly conservative estimates based on a reference plant and should only be used if no other options are available.
	Menu D Class 9 Accidents	Section 7.7	EOF DA staff	Provides estimated offsite dose when <u>ALL</u> release monitor and in-plant data is unavailable and E-RET are <u>CANNOT</u> dispatched	This model is <u>NOT</u> appropriate for dose assessment activities unless <u>ALL</u> release monitors and in-plant monitors are <u>NOT</u> available <u>AND</u> field teams cannot be dispatched. It uses grossly conservative estimates based on a reference plant and should only be used if no other options are available.
	Menu E-W Back Calculation	Section 7.6	TSC & EOF DA staff	Evaluation of Field Team Data	This is the normal menu to perform dose projection from Field Team data to validate the routine projections or if the release path is unmonitored.
	Menu F Total Population Dose	Section 7.7	Recovery Organization	Used to Evaluate the total dose to the public.	This model is <u>NOT</u> appropriate for early dose assessment activities. It estimates population dose for the entire release and will be used for evaluations and recovery.
	Menu X Advanced Calculation	Section 7.7	EOF DA Staff with support from EP Staff	Used when detailed Isotopic data is available, performs more detailed evaluations	This model is <u>NOT</u> appropriate for dose assessment activities early in an event. It uses screens and options not routinely used by the Dose Assessment Staff. The time and data required make it more appropriate for longer term evaluations and recovery use. Do <u>NOT</u> attempt to run this model without assistance from the Emergency Preparedness Staff.
Plant Hatch Gross Activity Release Rate	N/A	Section 7.5	State of Ga., TSC & EOF DA staff	<u>Primary</u> State model & for in-plant instrument source term estimates	This is the normal menu to perform dose projection from in-plant monitors and run comparison with the State of Ga. dose projections.

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ATTACHMENT <u>3</u> TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		Att. Pg. 1 of 7

DEFAULT ISOTOPIC MIX 00 BASED ON ANSI 18.1

REACTOR COOLANT UNFILTERED NO DECAY

ISOTOPE	Main Stack Release Fraction (20 min. holdup applied)	Reactor Building Vent Release Fraction (no holdup)
Kr-83m	2.49 E-2	7.25 E-3
Kr-85m	4.51 E-2	1.23 E-2
Kr-87	1.30 E-1	4.05 E-2
Kr-88	1.49 E-1	4.05 E-2
Kr-89	1.27 E-2	2.58 E-1
Xe-133	6.63 E-2	1.72 E-2
Xe-133m	2.31 E-3	6.02 E-4
Xe-135	1.76 E-1	4.67 E-2
Xe-135m	8.58 E-2	5.40 E-2
Xe-137	3.27 E-2	3.19 E-1
Xe-138	2.68 E-1	1.84 E-1
I-131	1.56 E-3	4.05 E-3
I-133	1.08 E-2	2.83 E-3

SNC PLANT E.I. HATCH		Pg. 20 of 26
DOCUMENT TITLE: OFFSITE DOSE ASSESSMENT	DOCUMENT NUMBER: 73EP-EIP-015-0S	Rev/Ver No: 5
ATTACHMENT <u>3</u>		Att. Pg. 2 of 7
TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		

ISOTOPIC MIX 01 BASED ON ANSI 18.1

REACTOR COOLANT FILTERED

ISOTOPE	Main Stack Release Fraction (20 min. holdup applied)	Reactor Building Vent Release Fraction (no holdup)
Kr-83m	2.51 E-2	7.39 E-3
Kr-85m	4.56 E-2	1.25 E-2
Kr-87	1.31 E-1	4.13 E-2
Kr-88	1.45 E-1	4.13 E-2
Kr-89	1.29 E-2	2.63 E-1
Xe-133	6.71 E-2	1.75 E-2
Xe-133m	2.35 E-2	6.14 E-4
Xe-135	1.78 E-1	4.76 E-2
Xe-135m	8.70 E-2	5.51 E-2
Xe-137	3.33 E-2	3.26 E-1
Xe-138	2.72 E-1	1.88 E-1
I-131	7.94 E-6	2.07 E-6
I-133	5.36 E-5	1.41 E-5

SNC PLANT E.I. HATCH		Pg. 21 of 26
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ATTACHMENT <u>3</u> TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		Att. Pg. 3 of 7

ISOTOPIC MIX 02 BASED ON ANSI 18.1

REACTOR COOLANT UNFILTERED

ISOTOPE	Main Stack Release Fraction (20 min. holdup applied)	Reactor Building Vent Release Fraction (no holdup)
Kr-83m	2.49 E-2	7.25 E-3
Kr-85m	4.51 E-2	1.23 E-2
Kr-87	1.30 E1	4.05 E-2
Kr-88	1.44 E-1	4.05 E-2
Kr-89	1.27 E-2	2.58 E-1
Xe-133	6.63 E-2	1.72 E-2
Xe-133m	2.31 E-2	6.02 E-4
Xe-135	1.76 E-1	4.67 E-2
Xe-135m	8.58 E-2	5.40 E-2
Xe-137	3.27 E-2	3.19 E-1
Xe-138	2.68 E-1	1.84 E-1
I-131	1.56 E-3	4.05 E-4
I-133	1.08 E-2	2.83 E-3

SNC PLANT E.I. HATCH		Pg. 22 of 26
DOCUMENT TITLE: OFFSITE DOSE ASSESSMENT	DOCUMENT NUMBER: 73EP-EIP-015-0S	Rev/Ver No: 5
ATTACHMENT <u>3</u> TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		Att. Pg. 4 of 7

ISOTOPIC MIX 03 BASED ON WASH 1400 ACCIDENT MIX AND NUREG-1228 RELEASE FRACTIONS

GAP RELEASE FILTEREDD

Kr-85	1.0706 E-3
Kr-85m	4.5882 E-2
Kr-87	8.9584 E-2
Kr-88	1.0333 E-1
I-131	5.4167 E-4
I-133	1.0833 E-3
Xe-131m	1.9118 E-3
Xe-133	3.2500 E-1
Xe-133m	1.1470 E-2
Xe-135	6.5000 E-2
Xe-138	3.2500 E-1
Cs-134	1.1949 E-4
Cs-136	4.7794 E-5
Cs-137	7.4878 E-5

SNC PLANT E.I. HATCH		Pg. 23 of 26
DOCUMENT TITLE: OFFSITE DOSE ASSESSMENT	DOCUMENT NUMBER: 73EP-EIP-015-0S	Rev/Ver No: 5
ATTACHMENT <u>3</u>		Att. Pg. 5 of 7
TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		

ISOTOPIC MIX 04 BASED ON WASH 1400 ACCIDENT MIX AND NUREG-1228 RELEASE FRACTIONS

GAP RELEASE UNFILTERED

Kr-85	5.4733 E-4
Kr-85m	2.3457 E-2
Kr-87	4.5937 E-2
Kr-88	6.6461 E-2
I-131	5.5384 E-2
I-133	1.1077 E-1
Xe-131m	9.7737 E-4
Xe-133	1.6615 E-1
Xe-133m	5.8642 E-3
Xe-135	3.3231 E-2
Xe-138	1.6615 E-1
Cs-134	1.2217 E-2
Cs-136	4.8869 E-3
Cs-137	7.6561 E-3

SNC PLANT E.I. HATCH		Pg. 24 of 26
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ATTACHMENT <u>3</u> TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		Att. Pg. 6 of 7

**IIISOTOPIC MIX 05 BASED ON WASH 1400 ACCIDENT MIX AND NUREG-1228 RELEASE FRACTIONS
FUEL MELT FILTERED**

Kr-85	1.0671 E-3
Kr-85m	4.5732 E-2
Kr-87	8.9558 E-2
Kr-88	1.2957 E-1
Sr-89	6.269 E-5
Sr-90	2.468 E-6
I-131	8.0983 E-4
I-133	1.6196 E-3
Xe-131m	1.9055 E-3
Xe-133	3.2393 E-1
Xe-133m	1.1433 E-2
Xe-135	6.4786 E-2
Xe-138	3.2393 E-1
Cs-134	7.1456 E-5
Cs-136	2.8582 E-5
Cs-137	4.4779 E-5
Ba-140	3.0488 E-4
Ce-144	8.1 E-8

SNC PLANT E.I. HATCH		Pg. 25 of 26
DOCUMENT TITLE: OFFSITE DOSE ASSESSMENT	DOCUMENT NUMBER: 73EP-EIP-015-0S	Rev/Ver No: 5
ATTACHMENT <u>3</u> TITLE: ISOTOPIC MIXES FOR ACCIDENT TYPES		Att. Pg. 7 of 7

ISOTOPIC MIX 06 BASED ON WASH 1400 ACCIDENT MIX AND NUREG-1228 RELEASE FRACTIONS

FUEL MELT UNFILTERED

Kr-85	4.1276 E-4
Kr-85m	1.7690 E-2
Kr-87	3.4625 E-2
Kr-88	5.0121 E-2
Sr-89	4.8499 E-3
Sr-90	1.9090 E-4
I-131	6.2651 E-2
I-133	1.2530 E-1
Xe-131m	7.3707 E-4
Xe-133	1.2350 E-1
Xe-133m	4.4224 E-3
Xe-135	2.5061 E-2
Xe-138	1.2530 E-1
Cs-134	5.5231 E-3
Cs-136	2.2112 E-3
Cs-137	3.4642 E-3
Ba-140	2.3586 E-2
Ce-144	6.2650 E-6
Np-239	1.2088 E-4

Category	time since shutdown (hr)	duration of release (hr)	elevation of release (meters)	energy of release (10 ⁻⁵ Btu/hr)	Fraction of core inventory released							
					Xe-Kr	Organic I	I	Cs/Pb	Te-Sb	Ba-Sr	Ru	La
BWR-1	2.0	0.5	25	130	1.0E-1	7.0E-3	40E-2	40.0E-2	70E-2	5.0E-2	5.0E-1	5.0E-3
BWR-2	30.0	3.0	0	30	1.0E-1	7.0 E-3	90E-2	50.0E-2	30.0E-2	10.0E-2	3.0E-2	4.0E-3
BWR-3	30.0	3.0	25	20	1.0E-1	7.0E-3	10E-2	10.0E-2	30.0E-2	1.0E-2	2.0E-2	4.0E-3
BWR-4	5.0	2.0	25	N/A	6.0E-1	7.0E-4	8.0E-4	5.0E-3	4.0E-3	6.0E-10	6.0E-4	1.0E-4
BWR-5	3.5	5.0	150	N/A	5.0E-4	2.0E-9	6.0E-11	4.0E-9	8.0E-12	8.0E-14	0	0

FORM TITLE:
MIDAS INPUT DATA ACQUISITION

Alternate Meteorological Instrument Designation for Dose Assessment Use

Main Stack Elevated Release (Meteorological Data Entry Form - 100 M data)

	100M Wind Speed ⁵ 15 Min. Avg. MPH ⁵		100M Wind Direction ⁵ 15 Min. Avg. ° From ⁵		100M-10M Differential Temp. 15 Avg. ΔT ° F ⁵		10M Ambient Temperature 15 Min. Avg. °F		Rainfall 15 Min. Avg.	
	Value	MPL #	Value	MPL #	Value	MPL #	Value	MPL #	Value	MPL #
Primary	100 M	Y33-R603	100 M	Y33-R603	100M -10M	Y33-R606	10 M	Y33-R607	10 M	Y33-R608
1 st Alternate	60 M	Y33-R602	60 M	Y33-R602	60M - 10M	Y33-R606	10 M ¹	Y33-R610	Estimate ³	
2 nd Alternate	45M ¹	Y33-R604	45 M ¹	Y33-R604	45M-10M ¹	Y33-R610	Estimate ²		N/A	
3 rd Alternate	10 M	Y33-R601	10 M	Y33-R601	σθ ⁴ 100M or 60M	Y33-R605	N/A		N/A	

Reactor Building Vent Ground Level Release (Meteorological Data Entry Form - 10 M data)

	10M Wind Speed ⁵ 15 Min. Avg. mph ⁵		10M Wind Direction ⁵ 15 Min. Avg. ° From ⁵		60M-10M Differential Temp. 15 Avg. ΔT ° F ⁵		10M Ambient Temperature 15 Min. Avg. °F		Rainfall 15 Min. Avg.	
	Value	MPL #	Value	MPL #	Value	MPL #	Value	MPL #	Value	MPL #
Primary	10 M	Y33-R601	10 M	Y33-R601	60M-10M	Y33-R606	10 M	Y33-R607	10 M	Y33-R608
1 st Alternate	45 M ¹	Y33-R604	45M ¹	Y33-R604	45M-10M ¹	Y33-R610	10 M ¹	Y33-R610	Estimate ³	
2 nd Alternate	60 M	Y33-R602	60 M	Y33-R602	100M-10M	Y33-R606	Estimate ²		N/A	
3 rd Alternate	100 M	Y33-R603	100 M	Y33-R603	σθ ⁴ 10M or 45M	Y33-R605 Y33-R609 ¹	N/A		N/A	

1. These readings are obtained from the Back-Up Meteorological Tower.
2. Since this value has minimal impact on the dispersion calculation an estimated ambient Temperature is acceptable.
3. Input these letters as estimates for rainfall based on a visual observation, L for Light, M for Medium Rain, or H for Heavy Rain. IF no information is available use 0 in./15 min. rainfall.
4. IF the temperature values are unavailable for the Delta T readings, use the Sigma Theta (σθ) (variation in wind direction (in degrees)) for the Stability Class - ≥ 22.5° = A, 22.4° - 17.5° = B, 17.4° - 12.5° = C, 12.4° - 7.5° = D, 7.4° - 3.8° = E, 3.7° - 2.1° = F, > 2.1° = G. Input the Stability Class "Letter" into MIDAS.
5. IF all instruments in this data field are inoperable, call the National Weather Service (see Emergency Call List Section XI Offsite Agencies Phone List) and ask for the information from the nearest available source.

FORM TITLE:

RELEASE RATE ESTIMATES & DOSE PROJECTIONS (BASED ON OTHER PLANT INSTRUMENTATION)

NOTE

IF the DWRRM is unavailable, use the Post LOCA monitor reading * 10^{-55} .

1. Record the following data:

DWRRM reading (Rem/Hour) (A) _____

Time since Reactor Trip (Hours) (B) _____

Core Release Factor (Refer to Table I) (C) _____

Total Curie (NG) Available for Release (Refer to Table I) (D) _____

2. Determine the following values:

Percent of Core Released

$[(A/C) * 1 E4 + .5] / 100$ (E) _____

NG (Curies in Drywell) Available for Release

$(E/100) * D$ (F) _____

Drywell Purge Rate (Refer to Table II)

$(DW \text{ Flow Rate}/5.5 E5) / 60 \text{ sec/min.}$ (G) _____

Estimated Noble Gas Release Rate (Ci/Sec)

$F * G$ (H) _____

Estimated Iodine Release Rate (Ci/Sec) (Refer To Table III)

$H * \text{Iodine Conversion Ratio}$ (I) _____

Estimated Particulate Release Rate (Ci/Sec) (Refer To Table III)

$H * \text{Particulate Conversion Ratio}$ (J) _____

NOTE

The Isotopic Mix which was used in the release rate conversion calculations must be used when performing dose projections.

3. Use "H, I and J" as input values in the "Plant Hatch Gross Activity Release Rate" model of MIDAS to obtain dose projections. Input the calculated estimated release rates in the appropriate release point area (Elevated or Ground Level Release) of the "Release Point Monitor Data" spreadsheet.
4. Use the meteorological data from TRN-0052 as required by 73EP-EIP-010S, Section 7.3.2 as input values in the PLANT HATCH GROSS ACTIVITY RELEASE RATE model of MIDAS to obtain dose projections.

FORM TITLE:

RELEASE RATE ESTIMATES & DOSE PROJECTIONS (BASED ON OTHER PLANT INSTRUMENTATION)

TABLE I

Refer to the table below to determine the Core Release Factor and the Total Curie (NG) Available for Release based on the time since reactor trip.

TABLE I		
Time Since Reactor Trip	Core Release Factor	Total Curie (NG) Available for Release
0 Hours	5.424 E 6	5.599 E 6
.25 Hours	3.292 E 6	2.713 E 6
.5 Hours	2.800 E 6	2.211 E 6
.75 Hours	2.505 E 6	1.943 E 6
1.0 Hours	2.290 E 6	1.762 E 6
1.25 Hours	2.120 E 6	1.626 E 6
1.5 Hours	1.978 E 6	1.516 E 6
1.75 Hours	1.856 E 6	1.422 E 6
2.0 Hours	1.749 E 6	1.339 E 6
2.25 Hours	1.654 E 6	1.263 E 6
2.5 Hours	1.567 E 6	1.193 E 6
2.75 Hours	1.490 E 6	1.129 E 6
3.0 Hours	1.420 E 6	1.070 E 6
3.25 Hours	1.356 E 6	1.016 E 6
3.5 Hours	1.297 E 6	9.640 E 5
3.75 Hours	1.243 E 6	9.170 E 5
4.0 Hours	1.194 E 6	8.720 E 5
4.25 Hours	1.148 E 6	8.300 E 5
4.5 Hours	1.106 E 6	7.910 E 5
4.75 Hours	1.066 E 6	7.550 E 5
5.0 Hours	1.030 E 6	7.210 E 5
5.25 Hours	9.950 E 5	6.890 E 5
5.5 Hours	9.630 E 5	6.580 E 5
5.75 Hours	9.330 E 5	6.300 E 5
6.0 Hours	9.050 E 5	6.030 E 5

FORM TITLE:

RELEASE RATE ESTIMATES & DOSE PROJECTIONS (BASED ON OTHER PLANT INSTRUMENTATION)

TABLE II

NOTE

The Design Leakage does not take into account any dilution from release into the Reactor Bldg. or from normal flow at the release point.

To determine the Drywell Purge Rate, use the Design Leakage plus any venting of the drywell that is taking place as a minimum flow rate. Table II indicates possible default flow rates based on containment conditions).

Drywell Purge Rate \cong (DW Flow Rate (CFM) \div 5.5 E 5 (CF)) \div 60 sec/min.

TABLE II

POSSIBLE DEFAULT FLOWS BASED ON CONTAINMENT CONDITION

Type	Description	Flow Rate
Design leakage	1.2 % per day	11.42 CFM
Large Breach	100 % per day	381.9 CFM
Catastrophic Failure	100 % per 4 hours	2291.7 CFM

TABLE III

To determine the estimated Iodine and Particulate release rate, select the appropriate Isotopic Mix for the current plant conditions (based on 73EP-EIP-015-0S, Attachment 3), then reference the table below to determine the corresponding Iodine conversion Ratio and Particulate Conversion Ratio. These values are then multiplied by the estimated NG Release Rate to determine the estimated Iodine and Particulate release rates.

Estimated Iodine Release Rate \cong NG Release Rate * Iodine conversion Ratio

Estimated Particulate Release Rate \cong NG Release Rate * Particulate conversion Ratio

TABLE III

ISOTOPIC CONVERSION RATIOS

Isotope Mix	Description	Iodine	Particulate
00	Default - Normal Reactor Coolant with SBTG Removal	1.6157 E -5	0
01	Normal Reactor Coolant with SBTG Removal	1.6157 E -5	0
02	Normal Reactor Coolant without SBTG Removal	3.2941 E -3	0
03	Gap Release (NUREG-1228) with SBTG Removal	1.6783 E -3	2.5010 E -4
04	Gap Release (NUREG-1228) without SBTG Removal	3.2658 E -1	2.5010 E -2
05	In-Vessel Melt (NUREG-1228) with SBTG Removal	2.4492 E -3	5.1914 E -4
06	In-Vessel Melt (NUREG-1228) without SBTG Removal	4.9219 E -1	1.0465 E -1