VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

July 23, 1999

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Serial No. 99-379
SS&L/BAG R0
Docket No. 50-280
50-281
License No. DPR-32
DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
REVISIONS TO EMERGENCY PLAN IMPLEMENTING PROCEDURES

Pursuant to 10 CFR 50.54(q), enclosed are revisions to four Surry Power Station Emergency Plan Implementing Procedures. The revisions do not implement actions which decrease the effectiveness of our Emergency Plan. The Emergency Plan and Implementing Procedures continue to meet the standards of 10 CFR 50.47(b). Please update your manual by performing the actions described in the enclosed tabulation of changes.

Very truly yours,

E. S. Grecheck
Site Vice President

Enclosure

Commitments contained in this letter: None.

cc: U. S. Nuclear Regulatory Commission (2 copies)
Region II
Atlanta Federal Center
61 Forsyth Street S.W., Suite 23T85
Atlanta, Georgia 30303

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

A045

Serial No. 99-379
Surry EPIP Revisions

VIRGINIA ELECTRIC AND POWER COMPANY
REVISION TO SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

Enclosed are revisions to Surry Power Station Emergency Plan Implementing Procedures. Please take the following actions in order to keep your manual updated with the most recent revisions.

REMOVE AND DESTROY:	EFFECTIVE DATE:	INSERT:	EFFECTIVE DATE:
EPIP-4.02, Rev. 18	09/10/98	EPIP-4.02, Rev. 19	07/22/99
EPIP-4.16, Rev. 13	08/05/98	EPIP-4.16, Rev. 14	07/22/99
EPIP-4.21, Rev. 7	05/01/94	EPIP-4.21, Rev. 8	07/22/99
EPIP-4.30, Rev. 6	10/14/98	EPIP-4.30, Rev. 7	07/22/99

Emergency Plan Privacy and Proprietary Material have been removed.
Reference Generic Letter No. 81-27

SP-2-80 Superseded Per Rev 5 to EPIP's Dtd 7/23/99 #9907300031

Level 2 Controlled Distribution
Maintained by this Department
Do not remove this document for field work

VIRGINIA POWER
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.02	RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE (With 2 Attachments)	18 PAGE 1 of 20

PURPOSE

Establish a radiation protection program during an emergency (including the dispatch of monitoring teams).

ENTRY CONDITIONS

Any one of the following:

1. Emergency classification of an Alert, Site Area Emergency or General Emergency.
2. Activation by EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE.
3. Whenever deemed necessary by the Radiological Assessment Director.

APPROVAL RECOMMENDED	SNSOC DATE	APPROVAL	APPROVAL DATE	EFFECTIVE DATE
CHAIRMAN SNSOC	8/27/1998	STATION MANAGER	9/2/98	9/10/98

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 1	INITIATE PROCEDURE: • By: _____ Date: _____ Time: _____	
_____ 2	ESTABLISH RADIATION PROTECTION SUPERVISOR (RPS) OFFICE:	
	a) Evaluate HP area radiation levels: 1) Do surveys and sampling 2) Use friskers, personnel contamination monitors and count room analysis equipment for indications of abnormal readings	
	b) Verify HP area - HABITABLE	b) IF HP area NOT habitable, THEN do the following: 1) Establish RPS Office in a habitable area (consider OSC, ALARA Office, Alternate OSC or Emergency Switchgear Room). 2) Notify Exposure Control personnel. 3) GO TO Step 3.
	c) Establish RPS Office in Supervisor HP (Operations) Office	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 3	ESTABLISH COMMUNICATIONS:	
	a) Check TSC - ACTIVATED	a) GO TO Step 3.d.
	b) Notify RAD that RPS Office has been established	
	c) Coordinate establishment of Radiological Protection Communications Network between the following locations (as permitted by personnel availability): • TSC • RPS Office • Chemistry • OSC	
	d) Do radio checks:	
	1) Get portable HP radios, chargers and batteries	
	2) Use appropriate Announce/Talk Group(s)	
	3) Verify radio operability	3) Notify RAD of radio inoperability.
_____ 4	ESTABLISH ACCESS CONTROL:	
	a) Assign individual to control RCA access or to rope off RCA entrance	
	b) Limit RCA access to approved individuals	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 5	ESTABLISH EXPOSURE CONTROL: a) Have Exposure Control personnel initiate EPIP-4.27, EXPOSURE CONTROL EMERGENCY RESPONSE b) Notify Exposure Control personnel of HP area habitability	
_____ 6	EVALUATE HP READINESS: a) Identify available HP resources: • Have on-duty HP staff report to HP area • Have Exposure Control provide number and location of personnel on shift b) Notify RAD of HP readiness	
_____ 7	ASSIGN INPLANT/ONSITE TEAMS: a) Check personnel available for assignment as inplant and onsite team leaders b) Assign team leaders c) Assign inplant and onsite monitoring EPIP packages to team leaders d) Assign one team member for each inplant and onsite team	a) GO TO Step 8.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 8 GET STATUS UPDATE FROM RAD:

- Emergency classification
- Plant status
- Meteorological status
- HP assistance required
- Areas requiring monitoring (e.g., Chemistry Office, Security)

_____ 9 ASSIGN INDIVIDUAL TO MONITOR TEAM DISPATCH USING ATTACHMENT 1, MONITORING TEAM LOCATIONS

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- A minimum of 2 (two) Offsite Monitoring Teams must be dispatched, i.e., sent into the field, at a Site Area Emergency or General Emergency.
- Emergency conditions may require immediate implementation of radiological protection response actions. Attachments to this procedure and associated documentation may be completed after the fact should these conditions exist.

_____ 10 CHECK ANY OF THE FOLLOWING ACTIONS REQUIRED (BASED ON CONSULTATION WITH RAD OR DEGRADING RADIOLOGICAL CONDITIONS):

GO TO Step 22.

- EOP and Accident Mitigation Task support: GO TO Step 11
- Inplant monitoring - GO TO Step 12
- Onsite monitoring - GO TO Step 13
- Brief Inplant/Onsite Monitoring or Damage Control Teams - Initiate Attachment 2, TEAM BRIEFING
- Offsite monitoring - GO TO NOTE prior to Step 14
- Control Room/TSC/OSC/LEOF monitoring - GO TO Step 15
- Contaminated personnel - GO TO Step 16
- Evacuation Monitoring - GO TO Step 18
- Request for Post Accident Sampling - GO TO Step 19
- Respiratory Protection - GO TO Step 20
- Receipt of sample analysis data - GO TO Step 21

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: Tasks to prevent/reduce core damage or terminate a radiological release may be identified as Accident Mitigation Tasks and as such should be expedited by all practical means.

_____ 11 · PROVIDE SUPPORT FOR EMERGENCY OPERATING PROCEDURE (EOP) AND ACCIDENT MITIGATION TASK ACTIVITIES, AS NEEDED:

- Assure EOP and Accident Mitigation Task teams are expedited through HP
- Update RAD about HP support in progress

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 12	INITIATE INPLANT MONITORING:	
	a) Consult with RAD to determine location and type of surveys required	
	b) Ask for assessment of radiological hazards in area of surveys	
	c) Verify Inplant Monitoring Team Leader assigned	c) Assign Inplant Monitoring Team Leader.
	d) Do briefing with Team Leader:	
	1) Have Team Leader initiate EPIP-4.14, INPLANT MONITORING	
	2) Give Team Leader location and type of surveys required	
	3) Determine route of entry that should minimize exposure	
	4) Assign team number	
	5) Assign the following: • Portable radio • Radio talk group	5) IF radio NOT available, THEN have team use Gai-Tronics system for communications.
	e) Complete Attachment 2, TEAM BRIEFING	
	f) Dispatch team(s)	
	g) Notify RAD when survey information is received and when team returns	
	h) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 13	INITIATE ONSITE MONITORING:	
	a) Consult with RAD to determine location and type of surveys required	
	b) Ask for assessment of radiological hazards in area of surveys	
	c) Check if transportation required	c) GO TO Step 13.e.
	d) Assign vehicle (duplicate keys to vehicles are located in the Supv. HP Operations office key locker)	
	e) Verify Onsite Monitoring Team Leader assigned	e) Assign Onsite Monitoring Team Leader.
	f) Do briefing with Team Leader:	
	1) Have Team Leader initiate EPIP-4.15, ONSITE MONITORING	
	2) Give Team Leader location and type of surveys required	
	3) Assign team number	
	4) Assign the following: • Radio (portable or mobile) • Radio talk group	4) IF radio NOT available, THEN have team use Gai-Tronics system for communications.
	g) Complete Attachment 2, TEAM BRIEFING	
	h) Dispatch team(s)	
	i) Notify RAD when survey information is received and when team returns	
	j) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Emergency Kits #1 and #2 have 120 Volt air samplers and friskers with AC power cords. Vehicles assigned to teams with these kits have to be equipped with an inverter or equipment substitutions must be made prior to team departure from the HP area. Emergency Kit #3 has a 12 Volt battery clamp air sampler.

* *

NOTE: Emergency Kit #1 is located in the Environmental Monitoring vehicle. Emergency Kits #2 and #3 are located in the Maintenance Services Building. Instruments for these kits are stored separately in the HP Emergency Response Storage Area.

_____ 14 INITIATE OFFSITE MONITORING:

a) Determine from RAD:

- Need for offsite monitoring teams
- Number of offsite teams required
- Initial location of each team

b) Ask for assessment of possible radiological hazards in area of surveys

c) Assign 2 individuals to each Offsite Monitoring Team (at least 1 an HP Tech)

d) Assign vehicle (duplicate keys to vehicles are located in the Supv. HP Operations office key locker)

e) Use EPIP-4.16, OFFSITE MONITORING to brief Team Leader

f) RETURN TO Step 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: HP personnel should begin monitoring the LEOF within 60 minutes following declaration of an Alert or higher classification.

_____ 15 INITIATE CONTROL ROOM/TSC/OSC/LEOF MONITORING:

a) Establish monitoring of emergency response centers

b) Determine frequency of monitoring based on:

- Spread of contamination from service buildings
- Increase or decrease of effluent release
- Increase in emergency classification
- Change in plume direction

c) Assign EPIPs:

- EPIP-4.17, MONITORING OF EMERGENCY RESPONSE FACILITIES
- EPIP-4.18, MONITORING OF LEOF

d) Notify RAD as to the habitability of emergency response centers

e) RETURN TO Step 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 16	CHECK PERSONNEL - CONTAMINATED	RETURN TO Step 10.
	a) Check contaminated personnel - INJURED	a) GO TO Step 16.d.
	b) Check transport to offsite medical facility - REQUIRED	b) GO TO Step 16.d.
	c) GO TO Step 17	
	d) Use normal station procedures to decontaminate individual(s) and record results	
	e) Notify RAD of results	
	f) Identify location where individual(s) was contaminated	
	g) Evaluate set-up of access controls	
	h) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 17	HELP TRANSPORT CONTAMINATED INJURED PERSONNEL:	
	a) Do personnel surveys	
	b) Check if decontamination prior to transport practical	b) GO TO Step 17.d.
	c) Use normal station decontamination procedures	
	d) Notify RAD of need to transport contaminated personnel	
	e) Assign HP Tech to accompany injured individual:	
	1) Have HP Tech use normal HP procedure(s) for response to contaminated injured personnel	
	2) Give HP Tech portable survey instrument	
	f) Check if dosimetry needed by ambulance personnel	f) GO TO Step 17.h.
	g) Have HP Tech issue dosimetry	
	h) Notify RAD when ambulance departs	
	i) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 18	INITIATE EVACUATION MONITORING:	
	a) Check evacuation - ORDERED	a) IF evacuation planned but NOT ordered, THEN GO TO Step 18.c.
	b) GO TO Step 18.d	
	c) Do the following when notified of pending evacuation:	
	1) Consult with RAD regarding need of additional onsite surveys to support evacuation	
	2) Check surveys - REQUIRED	2) IF surveys NOT required, THEN GO TO Step 18.d.
	3) Dispatch Monitoring Teams to determine radiation and contamination levels	
	4) Notify RAD of survey results	
	d) Assign EPIP-4.21, EVACUATION AND REMOTE ASSEMBLY AREA MONITORING	
	e) Assign Evacuation and Remote Assembly Area monitoring kit located in Maintenance Services Building (Kit #4)	
	f) Help team get transportation or make arrangements for transportation with Security	
	g) Notify RAD when team is dispatched and when survey results are available	
	h) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 19 INITIATE POST ACCIDENT SAMPLING MONITORING:

a) Take inplant survey to determine dose rate at sample station

b) Notify RAD of survey results

c) Assign EPIPs:

- EPIP-4.22, POST ACCIDENT SAMPLING OF CONTAINMENT AIR
- EPIP-4.23, POST ACCIDENT SAMPLING OF REACTOR COOLANT
- EPIP-4.24, GASEOUS EFFLUENT SAMPLING DURING AN EMERGENCY
- EPIP-4.25, LIQUID EFFLUENT SAMPLING DURING AN EMERGENCY

d) Provide HP coverage during sampling and sample preparation

e) RETURN TO Step 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 20 EVALUATE RESPIRATORY PROTECTION REQUIREMENTS:

a) Evaluate the following:

- Airborne activity
- Presence of noxious gases or oxygen deficient air

b) Evaluate the need for recommending relocation of non-essential personnel from affected areas

c) Evaluate the need for initiating EPIP-4.05, RESPIRATORY PROTECTION

d) RETURN TO Step 10

_____ 21 NOTIFY RAD WHEN ANY OF THE FOLLOWING SAMPLE ANALYSIS RESULTS RECEIVED:

- Sample analysis data requested by RAD
- Abnormal or unexpected analysis data

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 22	IDENTIFY ADDITIONAL ACCESS CONTROL REQUIREMENTS: a) Check if abnormal radiological conditions exist: • Airborne contamination greater than 0.30 DAC • Deposition greater than 1000 dpm per 100 cm^2 • Area dose rate greater than 1000 mR/hr b) Consult with RAD about areas for which access is to be controlled c) Establish access control by: • Requiring HP notification prior to entry • Roping and posting affected areas d) Evaluate HP area radiation levels: 1) Do surveys and sampling 2) Use friskers, personnel contamination monitors and count room analysis equipment for indications of abnormal readings	a) IF NO abnormal radiological conditions, THEN do the following: 1) Use normal station access control procedures. 2) GO TO Step 23.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 23	EVALUATE STAFFING REQUIREMENTS:	
	a) Consult with RAD about projected duration of emergency	
	b) Check if relief schedule and/or increased staffing schedule required	b) GO TO Step 24.
	c) Prepare schedule	
	d) Give schedule to RAD for approval	
	e) Check schedule - APPROVED	e) GO TO Step 24.
	f) Perform callout of personnel	
	g) Notify RAD when callout complete	
_____ 24	CHECK RELIEF - AVAILABLE	IF NO relief available, THEN GO TO Step 26.
_____ 25	TRANSFER RESPONSIBILITIES TO RELIEF:	
	a) Notify successor about plant conditions and HP actions underway	
	b) Notify RAD of change of position	
	c) Stay with new RPS for approximately 30 minutes to facilitate turnover	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 26	CONTINUE ASSESSMENT:	
	a) Check if emergency condition still exists	a) GO TO Step 27.
	b) Verify initial TSC communications established	b) WHEN TSC activated, THEN establish communications with RAD.
	c) Do the following: 1) RETURN TO Step 8 2) Have survey(s) and sampling repeated as necessary to determine/monitor onsite radiological conditions	
_____ 27	SECURE FROM EMERGENCY:	
	a) Notify HP staff	
	b) Maintain access control	
	c) Consult with RAD about recovery actions	
	d) Restore procedures and equipment used during the emergency	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 28 TERMINATE EPIP-4.02:

- Give completed EPIP-4.02, forms and other applicable records to the RAD
- Completed by: _____

  Date: _____

  Time: _____

-END-

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.02	MONITORING TEAM LOCATIONS	18
ATTACHMENT 1		PAGE 1 of 1

TEAM NUMBER	MEMBERS	RADIO TALK GROUP	LOCATION	TIME

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.02	TEAM BRIEFING FORM	18
ATTACHMENT 2		PAGE 1 of 1

SECTION 1: (TO BE COMPLETED BY TEAM LEADER)

DATE_____ TIME DISPATCHED_____ TEAM DESIGNATION_____

TASK_____

_____

LOCATION_____

EXPECTED CONDITIONS_____

_____

DOSE RATES_____

CONTAMINATION LEVELS_____

SECTION 2: (TO BE COMPLETED BY INDIVIDUAL GIVING BRIEFING)

RADIO TALK GROUP: _____

TEAM PERSONNEL DATA

NAME	TLD	REMAINING DOSE	RESP. QUAL. Y/N

DOSE & STAY TIME_____

PROTECTIVE CLOTHING/RESPIRATORY PROTECTION

FULL PCs w/PLASTICS_____ w/o PLASTICS_____ PAPER SUIT ONLY_____

STREET CLOTHES_____ SCBA_____ PAPR_____ FULL FACE_____

COMMUNICATIONS EQUIPMENT_____ (DO NOT USE RADIO IN ESGR)

SPECIAL INSTRUCTIONS_____

_____

_____

SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.16	OFFSITE MONITORING (With 3 Attachments)	13
		PAGE 1 of 16

PURPOSE

To provide guidance for Offsite Monitoring Teams in obtaining equipment, tracking the plume, taking samples and transmitting data.

ENTRY CONDITIONS

Entry from EPIP-4.02, RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE.

APPROVAL RECOMMENDED	SNSOC DATE	APPROVAL	APPROVAL DATE	EFFECTIVE DATE
CHAIRMAN SNSOC	7/30/98	STATION MANAGER	7.31.98	8-5-98

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 1 INITIATE PROCEDURE:

- By: _____

  Date: _____

  Time: _____

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Emergency Kits #1 and #2 have 120 Volt air samplers and friskers with AC power cords. The vehicle assigned to the team with one of these kits has to be equipped with an inverter or equipment substitutions must be made prior to the team's departure from the HP area. Emergency Kit #3 has a 12 Volt battery clamp air sampler.

* *

NOTE:
- Offsite Monitoring Teams consist of 2 individuals, one being an HP Technician.
- Emergency Kit #1 is located in the Environmental Monitoring vehicle. Emergency Kits #2 and #3 are located in the Maintenance Services Building. Instruments are stored separately in the HP Emergency Response Storage area.

_____ 2 GET BRIEFING FROM RPS:

- Logistics:
  - Staging area
  - Monitoring equipment required
  - Monitoring locations
  - Samples or surveys required
  - Anticipated radiation levels
  - Where to report survey data (TSC or LEOF)
  - Arrangements for return of samples to station for analysis
- Radiation protection:
  - Protective clothing
  - Dosimetry
  - Respiratory protection
  - Potassium Iodide (KI)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Specific authorization is required before ingesting KI.

* *

_____ 3 SEND COMPLETED ATTACHMENT 3, RADIOPROTECTIVE DRUG DOSAGE, SIDE EFFECTS AND MEDICAL STATEMENT TO RAD

_____ 4 GET DOSIMETRY:

- DAD - ON

OR

- SRD - ZEROED

_____ 5 GET EQUIPMENT FROM HP EMERGENCY RESPONSE STORAGE:

a) Get instruments specified during briefing (e.g., portable monitoring device, air sampler)

b) Get respirators

c) Check equipment:

- Battery check
- Calibration sticker
- Response check

d) Record instrument data on Attachment 1, OFFSITE MONITORING DATA SHEET

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 6 RECORD TEAM DATA ON ATTACHMENT 1:

- Team identification number
- Team Leader and Member names

_____ 7 GET VEHICLE (duplicate keys to vehicles are located in Supv. HP Operations office key locker)

NOTE: Radio contact should be with the TSC until the LEOF (or CEOF) is activated.

_____ 8 INITIATE RADIO COMMUNICATIONS:

a) Depress mode key on radio until EP1 appears on the display

b) Establish radio contact with appropriate emergency center (TSC, LEOF or CEOF)

c) Ask for telephone number in case of radio failure

d) Notify emergency center radio operator of the following:

- Current location
- Designated monitoring location

NOTE: Two offsite monitoring emergency kits are stored in the Maintenance Services Building and one in the Environmental Monitoring vehicle.

_____ 9 GET EMERGENCY KIT

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- The Health Physics Monitoring Map identifies monitoring locations. Copies of the map are available in the Emergency Kit, HP Office, TSC and LEOF.
- Pre-selected Monitoring Point H-1.9 may not be accessible by vehicle.

_____ 10 GO TO DESIGNATED STAGING AREA OR MONITORING LOCATION (Refer to HP Monitoring Map for directions as needed)

NOTE: Dosimetry (SRDs/DADs) should be periodically checked while performing monitoring activities.

_____ 11 RECORD DOSIMETER READING IN MONITORING DATA SECTION OF ATTACHMENT 1

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: Completed samples should be placed in clean containers (e.g., plastic bags), kept for future laboratory analysis, and labeled with the following information (1) Team identification number, (2) Name, (3) Location, (4) Date, (5) Time, (6) Volume (if applicable).

_____ 12 CHECK ANY OF THE FOLLOWING SAMPLING ACTVITIES - REQUIRED:

- Track plume:
  GO TO Step 13
- Sample noble gas:
  GO TO Step 14
- Sample particulate and iodine:
  GO TO Step 15
- Determine air sample activity:
  GO TO Step 16
- Surface soil sample:
  GO TO Step 18
- Vegetation sample:
  GO TO Step 19
- Surface water sample:
  GO TO Step 20

IF directed to return to station, THEN GO TO Step 21.

IF NO immediate action required, THEN wait in low background area for further instructions (periodically check with command facility).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 13	FIND PLUME:	
	a) Get portable survey instrument from emergency kit	
	b) Open beta shield	
	c) Hold survey meter out of vehicle window	
	d) Go through plume in a crosswind direction	
	e) Check readings while traversing plume until maximum point (plume centerline) is located	e) IF NO readings above background are observed, THEN do the following: 1) Ask appropriate emergency center where to relocate. 2) RETURN TO Step 13.b.
	f) Record open window readings on Attachment 1	
	g) Close beta shield	
	h) Record closed shield readings on Attachment 1	
	i) Record dosimetry reading on Attachment 1	
	j) Notify emergency center of the following: • Dosimetry reading • Monitoring readings • Monitoring location	
	k) Check if additional monitoring is required	k) IF NO additional actions required, THEN go to a low background area outside the plume and wait for further instructions (periodically check with command facility).
	l) RETURN TO Step 11	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 14	TAKE NOBLE GAS SAMPLE:	
	a) Get 100 cc gas chamber from emergency kit	
	b) Go to plume centerline or sample location specified	
	c) Take off top of gas chamber	
	d) Wave gas chamber in air	
	e) Make sure petcocks are closed	
	f) Put top of chamber back on	
	g) Put chamber in labeled plastic bag	
	h) Record location on Attachment 1	
	i) Notify emergency center of status	
	j) Check if additional monitoring is required	j) IF NO additional actions required, THEN go to a low background area outside the plume and wait for further instructions (periodically check with command facility).
	k) RETURN TO Step 11	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Vehicle should be turned off if/when connecting or disconnecting air sampler cables. Do not touch engine or hoses as they may be hot.

* *

_____ 15 TAKE PARTICULATE AND IODINE SAMPLE:

a) Ask emergency facility to determine sample volume required

b) Get air sampler

c) Insert particulate filter and silver zeolite cartridge into sampler

d) Check if high humidity conditions exist — d) GO TO Step 15.g.

e) Keep sample away from moisture

f) Notify emergency center of weather conditions

g) Get air sample:

1) Turn on air sampler

2) Get volume specified by emergency facility (minimum 2.5 ft^3 air sample)

h) Remove iodine cartridge and particulate filter from sampler

i) Put iodine cartridge and particulate filter into separate, labeled plastic bags

j) Record sample parameters in Air Sample Data section of Attachment 1:

- Sample ID
- Date
- Time
- Location
- Volume

k) Check if determination of I-131 activity required — k) RETURN TO Step 11.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 16	DETERMINE AIR SAMPLE ACTIVITY:	
	a) Go to a low background area	
	b) Turn on frisker	b) IF frisker NOT operable, THEN GO TO Step 17.
	c) Get a background count rate (cpm)	
	d) Put on a clean pair of gloves	
	e) Take silver zeolite cartridge from plastic bag	
	f) Hold influent side of silver zeolite cartridge 1/4 inch from detector for at least 30 seconds to get a good count	
	g) Check gross counts - ON SCALE	g) Do the following: 1) Ask command facility which of the following actions is preferred: • Taking another sample of smaller volume • Measuring readings and converting results using an RO-2 meter. 2) IF another sample required, THEN RETURN TO Step 15. IF converting RO-2 readings, THEN GO TO Step 17.
	h) Calculate net count rate: GROSS (cpm) - BACKGROUND (cpm) = NET (cpm)	
	i) Obtain conversion factor for specific sample volume from Attachment 2	

(STEP 16 CONTINUED ON NEXT PAGE)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

16 DETERMINE AIR SAMPLE ACTIVITY: (Continued)

j) Calculate activity:

NET (cpm) x Conversion Factor = ACTIVITY (µCi/ml)

k) Calculate Thyroid CDE dose rate:

ACTIVITY (µCi/ml) x 1.57 E+9 = Thy CDE, mR/hr

l) Put sample in lebled plastic bag

m) Record results in Air Sample section of Attachment 1

n) RETURN TO Step 11

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 17 CONVERT RO-2 MEASUREMENTS TO CPM:

a) Take background reading (mR/hr)

b) Record results on Attachment 1

c) Hold influent side of silver zeolite cartridge about 1/4 inch from detector for at least 30 seconds to get a good reading

d) Determine gross mR/hr

e) Record results on Attachment 1

f) Calculate net mR/hr:

Gross mR/hr - Background mR/hr = Net mR/hr

g) Record results on Attachment 1

h) Change mR/hr to approximate CPM:

Net mR/hr x 10,000 = Net CPM

i) Record results on Attachment 1 (Use appropriate units)

j) RETURN TO Step 16.i

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 18	GET SURFACE SOIL SAMPLE:	
	a) Go to location specified by the emergency center	
	b) Find an area to sample for surface deposition that is flat and open (away from buildings, trees and vegetation)	
	c) Find an approximate 1 ft^2 area to take sample	
	d) Take top 1/4 to 1/2 inch layer of soil	
	e) Put soil sample in labeled plastic bag	
	f) Notify emergency center of status	
	g) Check if additional monitoring is required	g) IF NO additional actions required, THEN go to a low background area outside the plume and wait for further instructions (periodically check with command facility).
	h) RETURN TO Step 11	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 19	GET VEGETATION SAMPLE:	
	a) Locate vegetation to yield a sample representative of surface deposition (e.g., healthy grass, crops)	
	b) Collect about 4 pounds of vegetation	
	c) Put sample in a labeled container	
	d) Notify command facility of your location	
	e) Check if additional sampling - REQUIRED	e) IF additional sampling NOT required, THEN go to a low background area and wait for further instructions (periodically check with command facility).
	f) RETURN TO Step 11	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 20	GET SURFACE WATER SAMPLE:	
	a) Locate body of water to yield a sample representative of surface deposition (e.g., lake, pond, puddle)	
	b) Collect about 1 gallon of surface water in a labeled container (preferably plastic)	
	c) Notify command facility of your location	
	d) Check if additional sampling - REQUIRED	d) IF additional sampling NOT required, THEN go to a low background area and wait for further instructions (periodically check with command facility).
	e) RETURN TO Step 11	
_____ 21	TAKE SAMPLE(S) TO COUNT ROOM FOR ANALYSIS (or designated alternate facility as appropriate)	
_____ 22	TERMINATE EPIP-4.16:	
	• Give completed EPIP-4.16, forms and other applicable records to the Radiation Protection Supervisor	
	• Completed by: _____	
	Date: _____	
	Time: _____	

-END-

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.16	OFFSITE MONITORING DATA SHEET	13
ATTACHMENT 1		PAGE 1 of 2

TEAM IDENTIFICATION No.: _____

NAME(s): _____; _____

INSTRUMENT DATA:

INSTRUMENT	MODEL No.	SERIAL No.

MONITORING DATA:

LOCATION	DATE / TIME	DAD/SRD READING	WINDOW OPEN mR/hr	WINDOW CLOSED mR/hr

ADDITIONAL REMARKS: _____

_____

_____

AIR SAMPLE DATA: NEXT PAGE

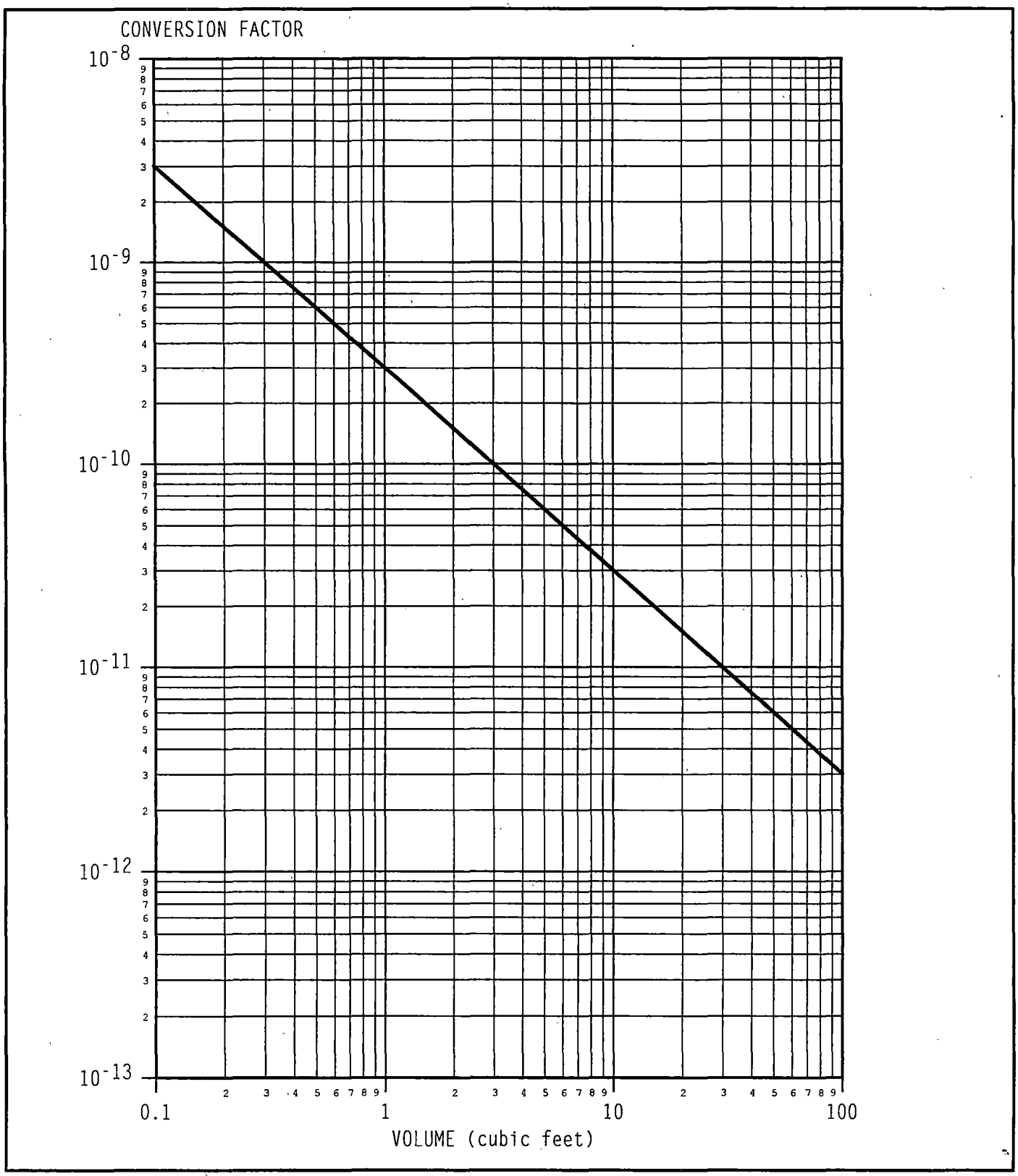
AIR SAMPLE DATA:

AIR SAMPLE ID.:		
DATE / TIME:	LOCATION:	
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft^3):		
ACTIVITY, µ Ci/ml = NET CPM x Conversion Factor (from Attachment 2)		
THYROID CDE, mR/hr = Activity, µ Ci/ml x 1.57E+9		

AIR SAMPLE ID.:		
DATE / TIME:	LOCATION:	
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft^3):		
ACTIVITY, µ Ci/ml = NET CPM x Conversion Factor (from Attachment 2)		
THYROID CDE, mR/hr = Activity, µ Ci/ml x 1.57E+9		

AIR SAMPLE ID.:		
DATE / TIME:	LOCATION:	
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft^3):		
ACTIVITY, µ Ci/ml = NET CPM x Conversion Factor (from Attachment 2)		
THYROID CDE, mR/hr = Activity, µ Ci/ml x 1.57E+9		

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.16	FRISKER CONVERSION FACTOR	13
ATTACHMENT 2		PAGE 1 of 1



NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.16	RADIOPROTECTIVE DRUG DOSAGE, SIDE EFFECTS AND MEDICAL STATEMENT	13
ATTACHMENT 3		PAGE 1 of 1

SECTION I: DOSAGE AND SIDE EFFECTS

****

CAUTION

Potassium Iodide should not be used by people allergic to Iodine. Keep out of reach of children. In case of overdose or allergic reaction, contact a physician or public health authority.

****

DIRECTIONS FOR ADULT USE: One (1) tablet once a day. DO NOT take tablet for more than 10 days.

SIDE EFFECTS:

Usually, side effects occur when people take higher doses for longer periods of time. Do not take more than the recommended dose and do not take dose for longer than the time that is recommended to you. Side effects are unlikely due to low doses over short periods of time. Possible side effects are skin rashes, swelling of salivary glands, and "iodism" (metallic taste, burning of mouth and throat, sore teeth and gums, symptoms of head cold, and sometimes stomach upset and diarrhea). A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, swelling of parts of the face and body, and severe shortness of breath, requiring immediate medical attention. Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR:

If side effects are severe or if you have an allergic reaction, stop taking potassium iodide and call a doctor.

SECTION II:

NOTE:
- Team Leader and Team Member document review of this form by checking the applicable boxes below, respectively.
- Check all that apply.
- Items 2 through 5 should be answered to the best of your knowledge.

	LEADER	MEMBER	
1.	[ ]	[ ]	I have read Section I, "DOSAGE AND SIDE EFFECTS".
2.	[ ]	[ ]	I do not have a known sensitivity to Iodine, nor do I have a medical condition that would make me reluctant to take Iodine tablets.
3.	[ ]	[ ]	I have a known sensitivity to Iodine.
4.	[ ]	[ ]	I have a medical condition that may negate my being able to take KI tablets, e.g., hyperthyroidism, hypothyriodism, etc.
5.	[ ]	[ ]	I am currently taking thyroid hormone tablets.
6.	[ ]	[ ]	I am a Declared Pregnant Worker under provisions of, or hereby state my intention to declare pregnancy in accordance with, VPAP-2101, Radiation Protection Program.

TEAM LEADER NAME: _____ (print); _____ (signature); DATE: _____

TEAM MEMBER NAME: _____ (print); _____ (signature); DATE: _____

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.21	EVACUATION AND REMOTE ASSEMBLY AREA MONITORING (With 1 Attachment)	7 PAGE 1 of 8

PURPOSE

To collect personnel dosimetry, monitor station personnel evacuating from the site, and provide instructions for decontamination.

ENTRY CONDITIONS

Any one of the following:

1. Activation by EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE.
2. Activation by EPIP-4.02, RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE.
3. Activation by EPIP-5.05, SITE EVACUATION.

ENTERED BY
MAY - 1 1995
BPM

APPROVAL RECOMMENDED	SNSOC DATE	APPROVAL	APPROVAL DATE	EFFECTIVE DATE
CHAIRMAN SNSOC	4-20-95	STATION MANAGER	4/21/95	5/1/95

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 1 INITIATE PROCEDURE:

- By: _____

Date: _____

Time: _____

_____ 2 GET BRIEFING FROM RPS:

a) Determine Remote Assembly Area (RAA) to be used

b) Review route to designated RAA:

- Primary RAA: Take Rt. 650 to intersection with Rt. 628; turn left onto Rt. 628; go 1.1 miles to second set of power lines

- Secondary RAA: Take Rt. 650 to Rt. 617; turn right; go to Rt. 10 and proceed west to Community Center (right side of Rt. 10 towards Richmond)

c) Review radiological conditions

d) Check if parking areas are to be surveyed prior to evacuation

e) Get phone number for back-up communications in case of radio failure: _____

f) Get radio talk group assignment: _____

g) Determine required monitoring equipment (e.g., portable monitoring device, frisker)

h) Determine dosimetry requirements

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 3	GET REQUIRED EQUIPMENT:	
	a) Get instruments from HP emergency response storage area: • Do battery check • Check calibration sticker • Do response check	
	b) Get dosimetry: • DAD - ON OR • SRD - ZEROED	
	c) Get copies of blank Personnel Contamination Reports (PCRs) and blank survey maps	
	d) Get vehicle with mobile radio	d) Do the following: 1) Get vehicle and portable radio. 2) Set portable radio to assigned talk group: a) Move three position toggle switch to B. b) Move mode selector knob to position 2, 3 or 4.
	e) Check radio - OPERABLE 1) Depress mode key until assigned talk group is displayed (N/A for portable) 2) Establish communications with RPS prior to leaving site	e) GO TO Step 3.f AND Make sure to contact station upon arrival at RAA using alternate means: • Security radio • Automatic Ringdown to TSC (Primary RAA only) • Commercial telephone
	f) Get Emergency Kit #4 from Maintenance Services Building	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 4	DO SURVEY OF PARKING AREA PRIOR TO EVACUATION IF PREVIOUSLY DIRECTED BY RPS: a) Monitor parking areas to determine contamination levels prior to evacuation b) Notify RPS of survey results	GO TO Step 5.
	NOTE: Attachment 1 shows location of Primary RAA and Secondary RAA.	
_____ 5	GO TO DESIGNATED RAA	
	NOTE: SRDs should be securely fastened to the accompanying TLD.	
_____ 6	CHECK IF RADIOLOGICAL RELEASE - OCCURRED	IF NO release occurred, THEN do the following: a) Get dosimetry from evacuees b) Have evacuees follow directions provided to the public (e.g., radio EBS messages), if any c) Release evacuees d) Return to station e) GO TO Step 15.
_____ 7	HAVE EVACUEES REMAIN IN VEHICLES UNTIL SURVEYS ARE COMPLETED	
_____ 8	GET DOSIMETRY FROM EVACUEES	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
9	MONITOR VEHICLES AND EVACUEES:	
	a) Check vehicle(s) - CONTAMINATED	a) GO TO Step 9.c.
	b) Isolate vehicle(s)	
	c) Check evacuee(s) - CONTAMINATED	c) GO TO Step 10.
	d) Record data on Personnel Contamination Reports	
10	DO FOLLOW-UP ACTIONS FOR CONTAMINATED VEHICLES(S) OR EVACUEE(S):	IF NO contamination on vehicles or evacuees, THEN do the following:
	a) Notify RPS of survey results	1) Have evacuees follow directions provided to the public (e.g., radio EBS messages), if any
	b) Ask RPS for disposition instructions:	2) Release evacuees
	• Send vehicle or individual back to plant	3) Notify RPS of survey results
	OR	4) Ask RPS for follow-up instructions
	• Try to decontaminate at RAA: GO TO Step 11	5) GO TO Step 13.
	OR	
	• Send vehicle or evacuee to Surry County Evacuation Assembly Center for decontamination: GO TO NOTE prior to Step 12	
	OR	
	• Return to station: GO TO Step 13	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
____ 11	DECONTAMINATE AT RAA:	
	a) Check if contamination found on clothing	a) GO TO Step 11.e.
	b) Remove contaminated clothing	
	c) Put contaminated clothing in poly bag	
	d) Replace clothing with paper or plastic clothing	
	e) Check if localized contamination exists	e) IF decontamination successful, THEN do the following: 1) Have evacuees follow directions provided to the public (e.g., radio EBS messages), if any 2) Release evacuees 3) RETURN TO Step 10.a.
	f) Try to decontaminate using mechanic's soap	
	g) Clean area with drying towels (diapers)	
	h) RETURN TO Step 10	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: Attachment 1 shows the location of Surry County's Primary and Alternate Evacuation Assembly Centers.

_____ 12 DECONTAMINATE AT SURRY COUNTY EVACUATION ASSEMBLY CENTER:

a) Ask RPS for assistance to transport evacuee(s) to Surry County Evacuation Assembly Center

b) Go with evacuee(s) to Evacuation Assembly Center

c) Try to decontaminate evacuee

d) RETURN TO Step 10

_____ 13 MONITOR DECONTAMINATION AREA

_____ 14 CLEAN ANY AREAS FOUND TO BE CONTAMINATED

_____ 15 COMPLETE SURVEYS

AND

MAKE SURE THE FOLLOWING DATA HAS BEEN RECORDED ON EACH FORM:

- Date
- Time
- Instrument used and serial number

_____ 16 GET ALL BAGS CONTAINING CONTAMINATED MATERIAL

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 17 RETURN TO STATION

_____ 18 TAKE DOSIMETRY TO EXPOSURE CONTROL

_____ 19 TERMINATE EPIP-4.21:

- Give completed EPIP-4.21, forms and other records to the Radiation Protection Supervisor
- Completed By: _____

  Date: _____

  Time: _____

-END-

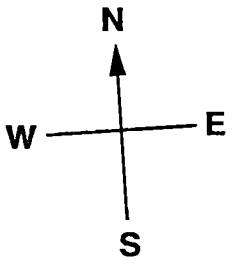
NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.21	LOCATION OF REMOTE ASSEMBLY AREAS	7
ATTACHMENT 1		PAGE 1 of 1

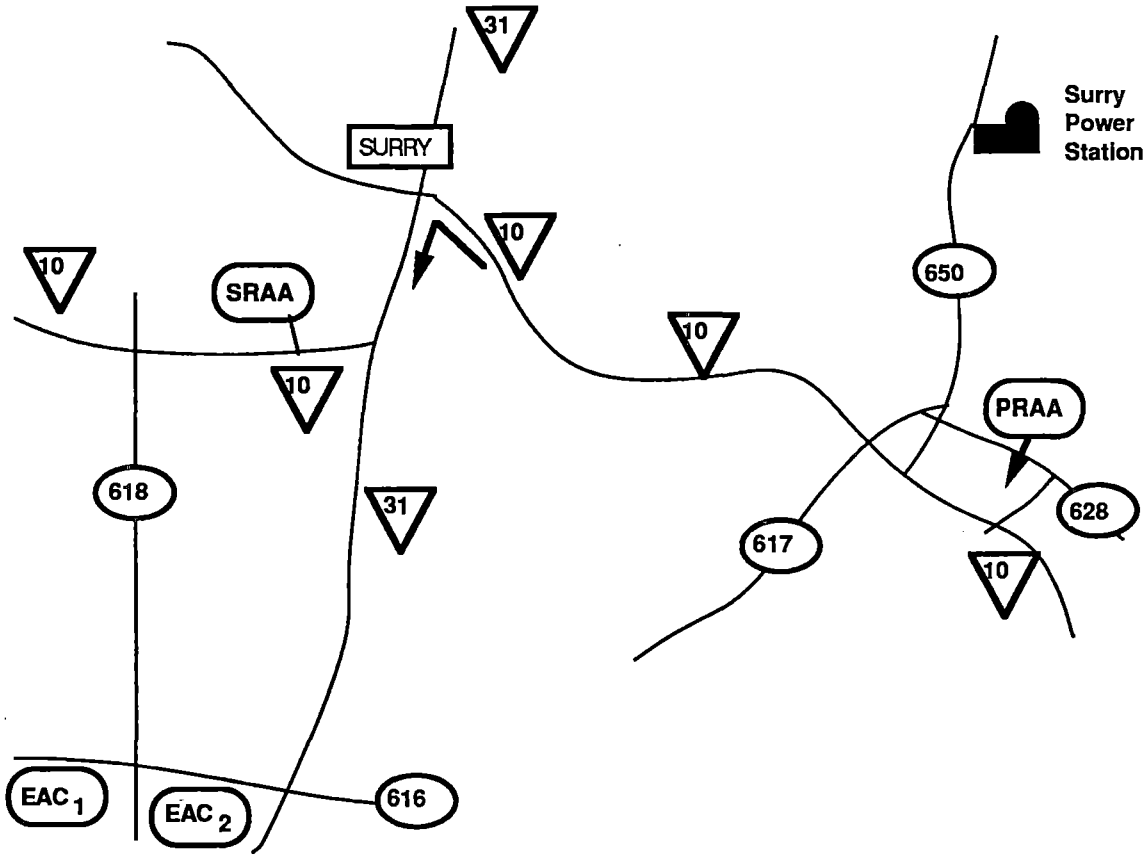
PRAA: Primary Remote Assembly Area
(Under power lines, 1.1 miles east of intersection at Rt. 650 and Rt. 628)

SRAA: Secondary Remote Assembly Area
(Surry Parks and Recreation Community Center)

EAC_1: Evacuation Assembly Center,
Surry County High School

EAC_2: Evacuation Assembly Center,
Surry County Elementary School





NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.30	USE OF MIDAS CLASS A MODEL (With 2 Attachments)	6 PAGE 1 of 21

PURPOSE

To provide instructions for execution of the MIDAS Class A Model.

ENTRY CONDITIONS

Any one of the following:

1. Entry from EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE.
2. Entry from EPIP-4.03, DOSE ASSESSMENT TEAM CONTROLLING PROCEDURE.
3. Direction by the Radiological Assessment Director or Radiological Assessment Coordinator.

APPROVAL RECOMMENDED	SNSOC DATE	APPROVAL	APPROVAL DATE	EFFECTIVE DATE
CHAIRMAN SNSOC	10/8/98	STATION MANAGER	10.9.98	10-14-98

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- Dose assessments should be performed within 15 minutes after a radiological release. MIDAS may underestimate the effects of a release which begins or ends during the current 15-minute period.
- An abnormal run is one in which a red bar containing messages that meteorological or radiation monitor data is missing appears on the screen.
- Pressing the DIALOG key causes the terminal to display three lines of text and allows the operator to read system messages during a run.
- Attachment 2, Design Basis Accident Technical Overview, provides assumptions and default values used in the MIDAS code and EPIPs.

_____ 1 INITIATE PROCEDURE:

a) By:_____
Date:_____
Time:_____

b) Press START/STOP button (the top button near the lower right front of terminal)

c) Ensure STOP/START button stays in the engaged position

d) Press LOCK key on the keyboard

e) Verify LOCK and TEK indicating lights - ON

e) Do the following:

1) Notify RAD/RAC MIDAS terminal malfunctioning.

2) Initiate Attachment 1.

f) Verify MIDAS in one of the following locations being used:

- Surry HP Office
- Surry TSC
- Surry LEOF

f) IF in CEOF, THEN ensure "Black Box" ABC switch positioned to "B" for Surry.

g) Verify - INITIAL MIDAS RUN

g) GO TO Step 5.

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 2	DO INITIAL ASSESSMENT:	
	a) Press RETURN	
	b) Verify USERNAME displayed	b) IF "Local>" appears, THEN type C SMIDAS and RETURN TO Step 2.a. IF message "Local-715 or Local-013" appears, THEN do the following: 1) Press CTRL K keys. 2) WHEN "Local>" appears, THEN type C NMIDAS. 3) Wait for USERNAME to appear. 4) IF USERNAME appears, THEN do the following: a) GO TO Step 2.c. b) Continue using manually entered monitor and met data. IF USERNAME does NOT appear, THEN do dose assessment using manual EPIPs.
	c) Type MIDAS	
	d) Press RETURN	
	e) Verify MIDAS in one of the following locations being used: • Surry HP Office • Surry TSC • Surry LEOF	e) IF in CEOF, THEN do the following: 1) Type SU (Surry Site ID). 2) Press RETURN.

(STEP 2 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
2	DO INITIAL ASSESSMENT: (Continued)	
	f) WHEN the following prompt appears ENTER: [S1] SURRY 1 [S2] SURRY 2 [R1] SURRY 1 TREND [R2] SURRY 2 TREND [EX] EXIT THEN type appropriate unit (S1 or S2)	
	g) Press RETURN	
	h) WHEN the following prompt appears [XX] FUNCTION OR TASK CODE [XXX] FUNCTION AND TASK CODE [FM] FUNCTION MENU [CTRL-Z] EXIT THEN type TS (touch screen)	
	i) Press RETURN	
	j) Verify MIDAS connected to Surry VAX	j) IF MIDAS is connected to North Anna VAX (i.e., connection made using C NMIDAS), THEN GO TO Step 6.
	k) Check if quick assessment desired	k) GO TO Step 5.
	l) Touch REAL TIME QUICK DOSE PROJECTIONS on the ACCIDENT RUN MENU SELECTION screen	
	m) Touch CONFIRM	

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

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IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

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NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- Meteorological (MET) parameters with good values are backlit in gray with their value under the parameter name.
- Rate of rainfall (inches per 15 minutes) may be obtained from the Virginia Power Weather Center (Innsbrook, 8-730-3025). Zero (0) may be entered if data is not available. However, using zero during periods of rainfall may yield unrepresentative results.
- The Stability Class letter designator (A-G) should be used in lieu of a Delta T numerical value. This is preferred because numerical values must be entered in °F, but station monitoring systems display the parameter in °C.
- EPIP-4.10, Determination of X/Q, contains instructions for getting meteorological information, e.g. inches rainfall, when on-site measurements unavailable.

_____ 3 ENTER METEOROLOGICAL DATA:

a) Check gray boxes - APPEAR — a) GO TO Step 3.f.

b) Touch RAIN box

c) Put in rate of rainfall (inches per 15 minutes)

d) Touch CONFIRM

e) GO TO Step 3.j

f) Do one of the following:

- Use LAST MET and touch each box to activate parameter

OR

- Touch box for each MET parameter to be entered and put in value using the NUM pad

g) Verify the entered value appears under the parameter name — g) Enter parameter value again.

(STEP 3 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

3 ENTER METEOROLOGICAL DATA: (Continued)

h) Ensure values for each of the following parameters are entered (touch the appropriate box and enter the value using the NUM pad as needed):

- Delta temperature [enter letter of Stability Class (A-G) in Delta T field]:

DELTA T (°C)	SIGMA THETA (°)	STABILITY CLASS
≤ -0.67	≥ 22.5	A (most unstable)
-0.66 to -0.60	22.4 to 17.5	B
-0.59 to -0.53	17.4 to 12.5	C
-0.52 to -0.18	12.4 to 7.5	D
-0.17 to +0.53	7.4 to 3.8	E
+0.54 to +1.41	3.7 to 2.1	F
> +1.41	< 2.1	G (most stable)

- Upper and lower wind speed (mph)
- Lower wind direction (degrees)
- Ambient temperature (°F)
- Rain (inches per 15 minutes)

i) Touch CONFIRM after all MET parameters are correctly entered

(STEP 3 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
	3 ENTER METEOROLOGICAL DATA: (Continued)	
	j) Verify run proceeds into calculation mode	j) IF Red Warning message appears (i.e., rad monitor data invalid), THEN do the following: 1) Touch EXIT. 2) RETURN TO Step 2.j.
_____	4 GET REPORTS:	
	a) Check if SPECIAL REPORT appears following calculation routine	a) IF DATA RESULT SCREEN appears, THEN touch CONTINUE multiple times to step through data results and calculation routine until the SPECIAL REPORT appears.
	b) Make a print of SPECIAL REPORT (touch "D COPY/S COPY")	
	c) Touch CONTINUE	
	d) WHEN page 1 of the RADIOLOGICAL STATUS REPORT appears, THEN press "D COPY/S COPY"	
	e) Touch CONTINUE	
	f) WHEN page 2 of the RADIOLOGICAL STATUS REPORT appears, THEN press "D COPY/S COPY"	
	g) Touch MORE REPORTS	
	h) Wait for MORE REPORTS SELECTION screen to appear	

(STEP 4 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4	GET REPORTS: (Continued)	
	i) Check with RAD/RAC about need for the following specific reports (to support State assessments): • MET, RAD, X/Q, DOSE SUMMARY • DOSE/DOSE RATE PLOTS • Additional SPECIAL REPORT • Additional RADIOLOGICAL STATUS REPORT	i) <u>WHEN</u> NO additional reports are needed, <u>THEN</u> do the following: 1) Touch EXIT twice to return to the ACCIDENT RUN MENU SELECTION SCREEN. 2) GO TO Step 15.
	j) Touch box for desired report	
	k) Touch CONFIRM	
	l) Check if REPORT PARAMETER SELECTION screen appears	l) GO TO Step 14.
	m) Set projection time on REPORT PARAMETER SELECTION SCREEN: 1) Touch PROJ. TIME box to scroll to duration specified by RAD/RAC (Use 2-hour default duration if no duration specified) 2) Touch CONFIRM	
	n) GO TO Step 14	

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: CHRRMS (Unit 1: RMS-127/128, Unit 2: RMS-227/228) readings may be used to select MIDAS LOCA accident type.

HOURS AFTER LOCA	CONTAINMENT HIGH RANGE RADIATION MONITOR READING (R/hr)		
0	≥1.3E+4	≥4.5E+2	≥1.54
1	≥5.0E+3	≥1.8E+2	≥1.3
2	≥3.7E+3	≥1.4E+2	≥1.2
4	≥2.8E+3	≥8.6E+1	≥1.0
MIDAS ACCIDENT TYPE SELECTION	LOCA MELT	LOCA GAP	LOCA PC

_____ 5 DO ENHANCED DOSE ASSESSMENT WITH DEFAULT DATA:

a) Verify MIDAS system default data to be used (i.e., real time meteorological and radiation monitor data, and default accident isotope mix)

a) GO TO Step 6.

b) Touch REAL TIME ENHANCED DOSE PROJECTIONS

c) Touch CONFIRM

d) WHEN the DBA ACCIDENT TYPE SELECTION menu appears, THEN touch the selection box for the accident type designated by the RAD/RAC

e) Touch CONFIRM

f) RETURN TO Step 3

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- Each input screen will appear with preselected values backlit in white. Changes are made by pressing the appropriate box and using the touch screen keypad in the upper right quadrant on the screen. Keypad entries are entered by touching EN on the keypad. Times between midnight and 0100 must be entered as 2400 through 2459 using the previous date.
- Use of bad radiation monitor or source term data (equal to zero) during a previous run will require selection of a new (different) release option.

_____ 6	USE REAL TIME ALL SCREEN DOSE PROJECTIONS TO DO ENHANCED DOSE ASSESSMENT WITH OPTIONAL OPERATOR INPUT DATA:	
	a) Verify user input is desired for Release Date/Time, Release Option, Monitor Data or Sample Data	a) RETURN TO Step 5.
	b) Touch REAL TIME ALL SCREEN DOSE PROJECTIONS	
	c) Touch CONFIRM	
	d) WHEN MISCELLANEOUS PARAMETERS screen appears, THEN verify default choices are to be used	d) Adjust choices on the MISCELLANEOUS PARAMETERS screen per RAD/RAC instructions OR Touch MANUAL if manual input of weather data is desired.
	e) Touch CONFIRM	

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- Run type is preset to PROJECTED (FORECAST) DOSE.
- PROJECTION TIME (HOURS) is preset to 1, 2, 4 and 8.

_____ 7 INPUT DATE AND TIME INFORMATION:

a) WHEN RUN MODE AND INTEGRATION TIME SELECTION screen appears, THEN verify current date/time to be used

a) IF current date/time NOT to be used, THEN do the following:

1) Touch START DATE OF INTEGRATION and then use the touch screen NUM pad to enter date in the format: MO/DY/YR HR:MN. (MIDAS will provide "/" marks between the pairs of digits for month, day and year, and a colon between the pairs of digits for hours and minutes.)

2) Touch EN when entry is complete.

b) Touch CONFIRM

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

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2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE: If rad data was bad or the source term data was equal to zero in a previous run, a new release option must be selected different from the one previously selected.

_____ 8 SELECT RELEASE (SOURCE TERM) OPTION:

a) Use RELEASE OPTION SELECTION screen

b) Select one of the following release options:

RELEASE OPTIONS	SELECTION AND TRANSITION STEPS
Radiation monitor data is available for manual entry and/or predictive dose assessment is desired based on a potential release	1) Touch MANUAL ENTRY OF EACH MONITOR READING 2) Touch CONFIRM 3) GO TO Step 9
Radiation monitor data is available from file	1) Touch MONITOR DATA FROM V & F FILE 2) Touch CONFIRM 3) GO TO Step 11
Isotopic release rates are available for manual entry and/or predictive dose assessment is desired based on a potential release	1) Touch MANUAL ENTRY OF ISOTOPE RELEASE RATE 2) Touch CONFIRM 3) GO TO Step 10
Isotopic concentrations and flow rates of each release path are known, and/or predictive dose assessment is desired based on a potential release	1) Touch MANUAL ENTRY OF ISOTOPE CONCENTRATION 2) Touch CONFIRM 3) GO TO Step 10
Design Basis Assident Default (DBA)	1) Touch DEFAULT DBA ACCIDENT 2) Touch CONFIRM 3) GO TO Step 11

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- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION:
- Double counting will occur if more than one monitor in each release pathway is entered.
- Default flow rates will automatically be used if flow rates are not entered and may result in overconservative dose projections.

* *

NOTE:
- Monitor readings may be obtained from ERFCS Group Review screens if RMS data is not available to MIDAS.
- Monitor readings from RM-VG-123 (Vent Vent High Range) or RM-GW-122 (Process Vent High Range) may be obtained from Operations if Kaman monitors (RM-VG-131 or RM-GW-130) or Victoreen monitors (RM-VG-110 or RM-GW-102) are offscale or out of service.
- CHRRMS (Unit 1: RMS-127/128, Unit 2: RMS-227/228) readings may be used to select MIDAS LOCA accident type.

HOURS AFTER LOCA	CONTAINMENT HIGH RANGE RADIATION MONITOR READING (R/hr)		
0	≥1.3E+4	≥4.5E+2	≥1.54
1	≥5.0E+3	≥1.8E+2	≥1.3
2	≥3.7E+3	≥1.4E+2	≥1.2
4	≥2.8E+3	≥8.6E+1	≥1.0
MIDAS ACCIDENT TYPE SELECTION	LOCA MELT	LOCA GAP	LOCA PC

_____ 9 ENTER MONITOR DATA MANUALLY:

a) WHEN the DBA ACCIDENT TYPE SELECTION screen appears, THEN select accident type specified by the RAD/RAC

(STEP 9 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

9 ENTER MONITOR DATA MANUALLY: (Continued)

b) Touch CONFIRM

c) WHEN RADIATION MONITOR READINGS screen appears, THEN do the following:

1) Touch the box for each monitor to be entered (one at a time)

2) Enter radiation and flow values for each monitor using EN on the NUM pad (Enter monitor and flow rate values by making two entries on the NUM pad separated by a comma; e.g., 1E6,25000 for cpm,flow rate)

3) WHEN entry for one monitor is complete, THEN repeat Step 9.c.1 through 9.c.2 until all monitor data is entered

d) WHEN all entries have been made, THEN touch CONFIRM

e) GO TO Step 12

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- An input is required for each active release point.
- Zero is an acceptable input for radiation level or flow.

_____ 10 ENTER STATION INVENTORY OR SAMPLE DATA:

a) Check if isotopic release RATE is to be used

a) IF isotopic CONCENTRATION is to be entered, THEN do the following:

1) Select each isotope.

2) Enter concentration using the NUM pad.

3) Enter flow rate in bottom box of center column.

4) GO TO Step 10.c

b) Select each isotope

AND

Enter release rates (for each selection) using the NUM pad

c) Touch CONFIRM after all data has been correctly entered

c) IF a data entry error was made, THEN re-enter the correct data using the NUM pad and touch CONFIRM when complete.

d) GO TO Step 12

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

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2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- The UNKNOWN MIX option may not appear on all DBA ACCIDENT TYPE SELECTION screens.
- CHRRMS (Unit 1: RMS-127/128, Unit 2: RMS-227/228) readings may be used to select MIDAS LOCA accident type.

HOURS AFTER LOCA	CONTAINMENT HIGH RANGE RADIATION MONITOR READING (R/hr)		
0	≥1.3E+4	≥4.5E+2	≥1.54
1	≥5.0E+3	≥1.8E+2	≥1.3
2	≥3.7E+3	≥1.4E+2	≥1.2
4	≥2.8E+3	≥8.6E+1	≥1.0
MIDAS ACCIDENT TYPE SELECTION	LOCA MELT	LOCA GAP	LOCA PC

_____ 11 ENTER ACCIDENT TYPE:

a) Verify DBA ACCIDENT TYPE SELECTION screen appears

a) IF accident type screen does NOT appear, THEN GO TO Step 12.

b) Select accident type as specified by RAD/RAC:

- MSLB (Main Steam Line Break)
- SGTR (Steam Generator Tube Rupture)
- FUEL HANDLING
- WGTR (Waste Gas Decay Tank Rupture)
- LOCA - PC (PRI COOL)
- LOCA - GAP
- LOCA - MELT
- LOCKED ROTOR

c) Touch CONFIRM

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

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2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 12	ENTER RELEASE TIMING SELECTION:	
	a) Verify NO "abnormal run" occurred	a) IF recovering from an "abnormal run", THEN GO TO Step 13.e.
	b) Check if trip occurred GREATER THAN 15 minutes ago	b) IF time of trip is unknown or within the past 15 minutes, THEN GO TO Step 12.d.
	c) Touch TRIP DATE box on the RELEASE TIMING SELECTION screen and enter date and time of trip using the NUM pad	
	d) Check if time of start of release since trip is known	d) GO TO Step 12.g.
	e) Touch RELEASE START MINS SINCE TRIP box	
	f) Enter number of minutes using the NUM pad	
	g) Check if 120 minute release duration is to be used	g) IF release duration is known, THEN do the following: 1) Touch DURATION box. 2) Enter number of minutes using the NUM pad. 3) GO TO Step 12.i.
	h) Touch DURATION box and enter 120 minutes using the NUM pad	
	i) Touch CONFIRM	
	j) Verify run is proceeding into calculation mode and data result screen appears	j) IF meteorological data is not available and the manual entry screen appears, THEN RETURN TO Step 3. IF error warning messages appear, THEN touch EXIT and RETURN TO Step 2.j.
	k) RETURN TO Step 4	

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
- MISCELLANEOUS PARAMETERS (CONFIRM, RESET)
- RUN TYPE AND TIME SELECTION (CONFIRM, RESET)
- RELEASE OPTION SELECTION (CONFIRM, RESET)
- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 13	RESTART PROCEDURE FOR ABNORMAL RUN:	
	a) Touch REAL TIME ALL SCREENS DOSE PROJECTIONS box on ACCIDENT RUN MENU SELECTION screen	
	b) Touch CONFIRM	
	c) WHEN the next screen requesting run type and time selection information appears, THEN touch CONFIRM without making any changes	
	d) Refer to Step 8 to select a new release option	
	e) Wait for RELEASE TIMING SELECTION screen to appear	
	f) Touch CONFIRM without making any changes	
	g) Verify that the run proceeds into the calculation mode	g) IF meteorological data NOT available and the manual entry WEATHER SELECTION screen appears, THEN RETURN TO Step 3.
	h) RETURN TO Step 4	

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
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- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

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b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

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2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE:
- Displays may be graphic or tabular, depending on what was selected in the MORE REPORTS menu. Map features allow the user to put on or take off map overlays using function keys.
- Instructions at the bottom of all graphic and tabular plume menus provide directions on how to move within them.
- Graphic displays of plumes should not be used to determine emergency classifications. Instead, use the printed Special Report information.
- Point of Interest allows the user to select specific points to determine X/Q, dose or dose rate values through the location of the terminal cursor. The cursor is moved using the "joy disk" to any location and then the space bar is toggled to display values.

_____ 14 EVALUATE DISPLAYS:

a) Set map scale:

1) Do one of the following:

- Use default distance (miles)

OR

- Touch MAP SCALE box and enter miles of interest using NUM pad

2) Touch CONFIRM

b) Check use of MAP FEATURES - DESIRED:

b) IF use of map features is NOT desired, THEN GO TO Step 14.c.

1) Touch MAP FEATURES

2) Select (highlight) desired options on screen menu

3) Touch CONFIRM

(STEP 14 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

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- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
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1. IF the touch screen feature is activated, THEN use the touch screen to make entries

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a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

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4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	EVALUATE DISPLAYS: (Continued)	
	c) Check enlargement of selected area of display - DESIRED:	c) IF use of SELECT AREA feature is NOT desired, THEN GO TO Step 14.d.
	1) Touch SELECT AREA	
	2) Touch screen at two points bounding the desired area	
	3) Touch RESTORE when use of this function is complete	
	d) Check use of POINT OF INTEREST feature - DESIRED:	d) IF POINT OF INTEREST feature is NOT desired, THEN GO TO Step 14.e.
	1) Touch POINT OF INTEREST, move cursor to desired location using "joy disk", and toggle the space bar (Place mouse cross-hairs at desired point and click)	
	2) WHEN POINT OF INTEREST function complete, THEN move cursor to bottom right-hand corner of the plot and press the space bar (Place mouse cross-hairs at bottom right corner of plot and click)	
	e) Touch CONTINUE	
	f) Touch MORE REPORTS	
	g) RETURN TO Step 4.h	
_____ 15	CHECK IF MIDAS OPERATIONS CAN BE TERMINATED: • Event - TERMINATED • RAD/RAC directs termination of MIDAS operation	RETURN TO Step 5.

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

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- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
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3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 16 DISENGAGE SYSTEM:

a) Touch EXIT twice on the ACCIDENT RUN MENU SELECTION screen

b) Press "CTRL" and "Z" keys simultaneously

c) WHEN "Local>" appears, THEN type LO

d) Press RETURN

e) Ensure "LOGGED OFF" message appears on screen

f) Press START/STOP button (the top button near the lower right front of terminal)

g) Ensure START/STOP button - DISENGAGED

_____ 17 TERMINATE EPIP-4.30:

- Give completed EPIP-4.30, forms and other applicable records to the Radiological Assessment Director/Coordinator

- By: _____

  Date: _____

  Time: _____

-END-

NOTE: • MIDAS screens have selection boxes that may include RESET, CONFIRM and EXIT. The RESET box is used to clear any data that was entered before initiating a run, or to return to a previous screen. When all information on the screen is correct, the CONFIRM box is selected to continue model processing. The EXIT box exits the modeling process. Selection touch screens include:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
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- DBA ACCIDENT TYPE SELECTION (CONFIRM, RESET)
- RELEASE TIMING SELECTION (CONFIRM, RESET)
- WEATHER SELECTION (CONFIRM, RESET)
- MORE REPORTS SELECTION (CONFIRM, EXIT)

• Surry release points are assigned as follows:

- Release Point 1: Containment and Vent Vent (The expressed flow (EX VEL) for Release Point 1 is "0.00E+00" based on no containment release.)
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1. IF the touch screen feature is activated, THEN use the touch screen to make entries

OR

IF a "mouse" is connected to the terminal, THEN do the following when instructed to touch the screen during performance of this procedure:

a) Do not touch the screen when prompted to do so by the procedure.

b) Use the "mouse" to position cross-hairs at desired location on screen.

c) Click the "mouse" after cross-hairs are properly positioned.

NOTE: Copying may take over two minutes. Using the CONTROL key with the D COPY/S COPY key will produce light text on a black background (reverse image), which may improve the resolution of maps/isopleths.

2. WHEN a print of an individual screen is desired, THEN press the "D COPY/S COPY" key while the screen is displayed.

3. IF a particular terminal malfunctions, THEN dose projections can be made from any one of the other terminals.

4. IF a terminal lock-up occurs, THEN refer to Attachment 1 for response actions.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.30	RESPONSE TO TERMINAL LOCK-UP	6
ATTACHMENT 1		PAGE 1 of 1

Perform the following actions, in sequence, to recover from terminal or system lock-up. The user may return to the procedure upon recovery (i.e. it is not necessary to complete the entire sequence if operation is restored).

__ 1. Enter the letter "E" AND press RETURN.
IF system accepts commands, THEN RETURN TO procedure.

__ 2. Enter "CTRL Y".
IF system accepts commands, THEN RETURN TO procedure.

__ 3. Press "RESET" on terminal.
IF system accepts commands, THEN RETURN TO procedure.

__ 4. Enter "CTRL Y".
IF system accepts commands, THEN RETURN TO procedure.

__ 5. Turn terminal power OFF and back ON again.
IF system accepts commands, THEN RETURN TO procedure.

__ 6. Enter "CTRL Y".
IF system accepts commands, THEN RETURN TO procedure.

NOTE: The HP and CEOF terminals are normally connected to Server "A".
TSC and LEOF terminals are normally connected to Server "B".

__ 7. Reset the MIDAS terminal servers as follows:
a) Have all users exit MIDAS.
b) Have the power cord for the affected terminal unplugged from the MIDAS terminal server (located in TSC Computer Room MIDAS Cabinet).
c) Plug the power cord back in to the MIDAS terminal server.
d) Wait for approximately 2 minutes while the server loads files from MIDAS and restarts operation. MIDAS will be out of service on at least two terminals during this time.
e) IF system accepts commands, THEN RETURN TO procedure.

__ 8. Connect to backup (alternate) MIDAS system:
a) Reset terminal by turning terminal power OFF and then back ON again.
b) Press CTRL K keys.
c) WHEN the "Local>" prompt appears, THEN type "C NMIDAS". Make sure to put a space between "C" and "NMIDAS".
d) Return to procedure Step 2.a)1 and continue procedure using manually entered monitor and meteorological data.

__ 9. Notify the MIDAS System Manager or Code Authority and the RAD or RAC.

1. MAIN STEAM LINE BREAK:
   - Release duration: 1 hour, with all activity released in first 1/2 hour.
   - Release from faulted line: 2.15E+5 lb-mass/hr.
   - Release from unaffected steam lines: 0 - 2 hours = 38,924 lb-mass/hr per line; 2 - 8 hours = 41,296 lb-mass/hr per line.
   - Primary and secondary side activity: Technical Specification limits at onset of event.
   - Primary to secondary leak rate: Technical Specification limit, 500 gpd in affected generator, and 1440 gpd (1 gpm) total for all 3 steam generators.
   - Iodine partition factors: Faulted S/G = 1; Intact S/Gs = 0.10.
   - Condenser is assumed unavailable and the following release points apply: Broken steam line, intact steam line relief valves, and AFWPT.
   - Activity released from broken steam line is distributed among the other 3 remaining release paths: 2 intact reliefs and AFWPT.
   - Concurrent Iodine spike is 4 hours in duration.
   - 10% of total activity is released via AFWPT. Steam flow to AFWPT: 40.5 lbs/hr per horsepower. Rated power = 710 horsepower. AFWPT total steam flow = 28,755 lbs/hr.

2. STEAM GENERATOR TUBE RUPTURE:
   - Release duration: 1 hour.
   - Tubes in the affected steam generator are uncovered at 5 minutes from event initiation, and remain uncovered for 10 minutes.
   - Iodine Partition Factor: 1.0 in affected steam generator; 0.01 in unaffected generators.
   - The affected steam generator is assumed isolated within 30 minutes.
   - Primary and secondary side activity: Technical Specification limits at onset of event.
   - Primary to secondary leak rate: Technical Specification limit, 500 gpd in affected generator, and 1440 gpd (1 gpm) total for all 3 steam generators.
   - Primary coolant release to affected steam generator: 108,381 lbs (0 - 30 minutes).
   - Steam release from affected steam generator: 107,395 lbs from 0 - 30 minutes, or 2.15E+5 lb-mass/hr.
   - Steam release from intact steam generators: 0 - 2 hours = 38,924 lb-mass/hr per generator; 2 - 8 hours = 41,296 lb-mass/hr per generator.
   - Condenser is assumed unavailable and the following release points apply: faulted generator relief valves, intact steam line relief valves, AFWPT. If condenser is available, release points are as follows: steam line relief valves (3), AFWPT, Vent Vent 1, and Air Ejector. The Unit 1 Air Ejector vents through Vent Vent 1. The Unit 2 Air Ejector vents via an independent stack.
   - All activity released is distributed among the 3 main steam reliefs and AFWPT.
   - Concurrent Iodine spike is 4 hours in duration.
   - 10% of total activity is released via AFWPT. Steam flow to AFWPT: 40.5 lbs/hr per horsepower. Rated power = 710 horsepower. AFWPT total steam flow = 28,755 lbs/hr.

3. FUEL HANDLING ACCIDENT (in Fuel Building):
   - Release duration assumed for 1 hour.
   - Fuel Pool effective Iodine partition factor of 100.
   - Release is through the charcoal filtration system. The filters through which the fuel building is exhausted are assumed to be 95% efficient for all species of Iodine.
   - Fuel is not moved until 150 hours post shutdown (= decay time).

4. WASTE GAS DECAY TANK RUPTURE:
   - Release duration assumed for 15 minutes.
   - Entire contents of tank released at 100% Technical Specification limit (25,000 Ci D.E. Xe-133).
   - 1/2 of release occurs via Process Vent.
   - 1/2 of release occurs via Vent Vent.

5. LOSS OF COOLANT ACCIDENT - MELT:
   - Release duration: 2 hours.
   - Release paths: Containment (Containment leakage) and Vent Vent 2 (ECCS leakage).
   - Containment airborne source term: 100% core Noble Gases, 25% core Iodines.
   - Spray removal: 10 hr^{-1} for elemental Iodine.
   - Containment leak rate: 0.1% per day, 0 to 1 hour (1.3 cfm).
   - ECCS leakage: 0 gpm, 0 to 5 min.; 964 cc/hour 5 min. to 20 min.; 4800 cc/hr 20 min to 30 days.
   - Iodine released in building atmosphere from ECCS leakage: 10%.
   - Filter efficiency for safeguards exhaust: 90% elemental Iodine.

6. LOSS OF COOLANT ACCIDENT - PC:
   - RCS concentration assumed at Technical Specification limits.
   - Safeguards filter efficiency: 90% Elemental Iodine.
   - Release duration: 2 hours.

7. LOSS OF COOLANT ACCIDENT - GAP:
   - 3% core Noble Gases and 2% core Iodines assumed in gap.
   - Safeguards filter efficiency: 90% Elemental Iodine.
   - Release duration: 2 hours.

8. LOCKED ROTOR:
   - Fuel cladding failure is assumed at 5%.
   - Total release duration: 8 hours.
   - Iodine Partition Factor of 100 is assumed for the condenser.
   - Steam flow to AFWPT = 40.5 lbs/hr per horsepower. Rated power = 710 horsepower. AFWPT steam flow = 28,755 lbs/hr.
   - Release duration: 2 hours.

9. MISCELLANEOUS GENERAL ASSUMPTIONS:
   - Vent Vent: Auxiliary Building, Air Ejector(s), Safeguards (filtered), Fuel Building (filtered), Containment Purge (filtered), Waste Gas Decay Tank area.
   - Process Vent: Waste Gas Decay Tanks, Containment Vacuum.
   - Containment leakage: MIDAS uses the higher of the two CHRRMS monitors to calculate the release.
   - Air Ejector Monitors: MIDAS adds the Air Ejector release to the associated vent vent release.
   - Main Steam and AFWPT: MIDAS adds the flows from each "open" and "status unknown" valve to calculate the total flow for a particular steam line. MIDAS sums the releases from all three steam lines and AFWPT to calculate the total release.
   - For Vent Vents and Process Vents, MIDAS uses the highest radiation monitor indication on the affected pathway to calculate dose projections.
   - For "Quick Dose" defaults: Unidentified mix, ground level, all release points active, and noble gas and iodine.
   - SPS MIDAS FLOW RATES:

PATHWAY	FLOW RATES
VENT VENT STACK 2:	Flow as indicated by FT-VS-116 (for VG-110, VG-131) ERFCS unknown/bad data: 0 scfm MIDAS default: 1.72 E+5 scfm
PROCESS VENT:	Flow indicated by FT-GW-100 (for GW-130, GW-102) ERFCS unknown/bad data: 0 scfm MIDAS default flow: 300 scfm
AIR EJECTOR:	TV-SV-103 (-203) open: 25 scfm TV-SV-103 (-203) closed: 0 scfm TV-SV-103 (-203) ERFCS unknown/bad data: 25 scfm MIDAS default: 25 scfm
CONTAINMENT:	Containment pressure < 14.7 psia: 0 scfm Containment pressure > 14.7 psia: 1.3 scfm ERFCS unknown/bad data: 0 scfm MIDAS default: 1.30 scfm
MAIN STEAM: The flow for all valves associated with a specific line are summed to determine the release rate associated with the radiation monitor for that pathway.	
SAFETY VALVES:	Valve open or ERFCS unknown/bad data: 838,739 lb-mass/hr Valve closed: 0
ATMOSPHERIC RELIEFS:	Valve open or ERFCS unknown/bad data: 370,618 lb-mass/hr Valve closed: 0
MIDAS DEFAULT TOTAL:	3.73 E+6 lbs-mass/hr per steam line
AFWPT:	Flow indicated by FT-MS-100 (-200) ERFCS unknown/bad data: 0 MIDAS default: 3.7 E+5 lb-mass/hr