VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

March 27, 2002

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

Serial No. 02-179
SS&L/BAG R0
Docket No. 50-280
50-281
License No. DPR-32
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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 two Surry Power Station Emergency Plan Implementing Procedures. The revisions do not implement actions that 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,

Richard H. Blount, Site Vice President
Surry Power Station

Enclosure

Commitments contained in this letter: None.

cc: U. S. Nuclear Regulatory Commission, Region II (2 copies)
Sam Nunn Atlanta Federal Center
61 Forsyth Street S.W., Suite 23 T85
Atlanta, Georgia 30303-8931

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

A045

Serial No. 02-179
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-1.01, Rev. 42	10/06/00	EPIP-1.01, Rev. 43	03/14/02
EPIP-4.30, Rev. 08	01/25/01	EPIP-4.30, Rev. 09	03/21/02

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

VIRGINIA POWER
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-1.01	EMERGENCY MANAGER CONTROLLING PROCEDURE (With 2 Attachments)	43
		PAGE 1 of 7

PURPOSE

To initially assess a potential emergency condition and initiate corrective actions.

ENTRY CONDITIONS

Any one of the following:

1. Another station procedure directs initiation of this procedure.
2. A potential emergency condition is reported to the Shift Supervisor.

Approvals on File

Effective Date 03/14/02

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Declaration of the highest emergency class for which an Emergency Action Level is exceeded shall be made.

* *

NOTE: The ERFCS is potentially unreliable in the event of an earthquake. Therefore, ERFCS parameters should be evaluated for accuracy should an earthquake occur.

_____ 1 EVALUATE EMERGENCY ACTION LEVELS:

a) Determine event category using Attachment 1, Emergency Action Level Table Index

b) Review EAL Tab associated with event category

c) Use Control Room monitors, ERFCS, and outside reports to get indications of emergency conditions listed in the EAL Table

d) Verify EAL - CURRENTLY EXCEEDED

d) IF basis for EAL no longer exists when discovered AND no other reasons exist for an emergency declaration, THEN do the following:

- RETURN TO procedure in effect.
- GO TO VPAP-2802, NOTIFICATIONS AND REPORTS, to make one-hour, non-emergency reports for classification without declaration.

IF EAL was NOT exceeded, THEN RETURN TO procedure in effect.

(STEP 1 CONTINUED ON NEXT PAGE)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

1 EVALUATE EMERGENCY ACTION LEVELS: (Continued)

e) Record procedure initiation:

- By: _____

  Date: _____

  Time: _____

f) Initiate a chronological log of events

g) Declare position of Station Emergency Manager

NOTE: Assembly, accountability and/or initiation of facility staffing may not be desired during certain situations (e.g., security event, severe weather, anticipated grid disturbance) or may have already been completed. These activities should be implemented as quickly as achievable given the specific situation.

_____ 2 CHECK - CONDITIONS ALLOW FOR NORMAL IMPLEMENTATION OF EMERGENCY RESPONSE ACTIONS

IF deviation from normal emergency response actions warranted, THEN do the following:

a) Refer to Attachment 2, Considerations for Operations Response Under Abnormal Conditions.

b) Consider applicability of 50.54(x).

c) IF classification/assembly announcement deferred, THEN GO TO Step 4.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 3	NOTIFY PLANT STAFF OF ALERT OR HIGHER CLASSIFICATION:	
	a) Check classification - Alert OR HIGHER	a) GO TO Step 4.
	b) Check if emergency assembly and accountability - PREVIOUSLY CONDUCTED	b) Do the following: 1) Sound emergency alarm and make announcement on station Gai-Tronics system as follows: "(Emergency classification) has been declared due to _____". "All emergency response personnel report to your assigned stations. All other personnel report to your Emergency Assembly Area". 2) Repeat RNO Step 3.b.1. 3) GO TO Step 4.
	c) Sound emergency alarm and make announcement on station Gai-Tronics system as follows: "(Emergency classification) has been declared due to _____"	
	d) Repeat Step 3.c	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: All further instructions should be continued through unless otherwise directed to hold.

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_____ 4 INITIATE SUPPORTING PROCEDURES:

a) Direct Emergency Communicators to initiate the following:

1) EPIP-2.01, NOTIFICATION OF STATE AND LOCAL GOVERNMENTS

2) EPIP-2.02, NOTIFICATION OF NRC

b) Check if classification announcement made using Gai-Tronics system

b) Notify the following to initiate controlling procedures:

- HP Shift Supervisor: EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE
- Security Shift Supervisor: EPIP-5.09, SECURITY TEAM LEADER CONTROLLING PROCEDURE

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	CHECK TSC - ACTIVATED	IF TSC NOT activated, THEN do the following: a) Have STA report to the Control Room. b) Notify Operations Manager-On-Call (OMOC) or Superintendent Operations. c) Evaluate initiation of Operations Department directive for augmenting staff resources during Emergency Plan activation. d) Evaluate having Radiological Assessment Director report to the Control Room.
6	INITIATE EPIP FOR EMERGENCY CLASSIFICATION IN EFFECT: • **Notification of Unusual Event** - EPIP-1.02, RESPONSE TO NOTIFICATION OF UNUSUAL EVENT • **Alert** - EPIP-1.03, RESPONSE TO ALERT • **Site Area Emergency** - EPIP-1.04, RESPONSE TO SITE AREA EMERGENCY • **General Emergency** - EPIP-1.05, RESPONSE TO GENERAL EMERGENCY	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 7	NOTIFY OFFSITE AUTHORITIES OF EMERGENCY TERMINATION: a) State and local governments (made by LEOF or CEOF when activated) b) NRC	
_____ 8	NOTIFY STATION PERSONNEL ABOUT THE FOLLOWING: • Emergency termination • Facility de-activation • Selective release of personnel • Completion and collection of procedures • Recovery	
_____ 9	TERMINATE EPIP-1.01: • Give completed EPIPs, forms and other applicable records to the Emergency Procedures Coordinator in the TSC • Completed By: _____ Date: _____ Time: _____	• Give to STA <u>AND</u> Notify Records Management that used EPIPs require replacement.

-END-

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CAUTION:
- Declaration of the highest emergency class for which an EAL is exceeded shall be made.
- Emergency Action Levels shall be conservatively classified based on actual or anticipated plant conditions.

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CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1. Inability to reach required unit operating condition within T.S. time limits ABOVE CSD CONDITION	Intentional reduction in power, load, or temperature IAW T.S. Action Statement - HAS COMMENCED AND T.S. Action Statement time limit for condition change - CANNOT BE MET	NOTIFICATION OF UNUSUAL EVENT
2. Loss of Function needed for unit HSD condition ABOVE CSD CONDITION	a) Inability to attain the minimum required heat sink as indicated by loss of the following: • Main Feedwater System AND • Auxiliary Feedwater AND • Auxiliary Feedwater Crosstie OR b) Loss of High Head flowpath as indicated by loss of the following: • Normal Charging System AND • High Head SI System	SITE AREA EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
3.	Loss of cooling function needed for Cold Shutdown and Refueling Condition CSD & RSD	• Secondary System cooling capability - UNAVAILABLE AND • Loss of any of the following systems: • Service Water • Component Cooling • Residual Heat Removal AND • RCS temperature GREATER THAN 140° F	ALERT
4.	Failure of a safety or relief valve to close after pressure reduction ALL CONDITIONS	• RCS • RCS pressure - LESS THAN 2000 psig OR Overpressure Mitigation System - ENABLED AND • Any indication after lift or actuation that Pressurizer Safety or PORV - REMAINS OPEN AND • Flow - NON-ISOLABLE • MAIN STEAM Excessive flow through Steam Generator Safety or PORV as indicated by rapid RCS cooldown rate - GREATER THAN 50° F per hour	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
5.	Failure of the reactor to trip (ATWT) POWER OPS & HSD	• Reactor trip setpoint and coincidences - EXCEEDED AND • Automatic reactor trip from RPS - FAILED AND • Manual reactor trip from Control Room - FAILED	SITE AREA EMERGENCY
6.	Trip following ATWT that takes the reactor subcritical POWER OPS & HSD	• Reactor trip setpoint and coincidences - EXCEEDED AND • Automatic reactor trip from RPS - FAILED AND • Manual reactor trip - REQUIRED AND • Manual reactor trip from Control Room - SUCCESSFUL	ALERT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
7.	Loss of plant communications capability ALL CONDITIONS	• Station PBX phone system - FAILED AND • Station Gai-Tronics system - FAILED AND • Station UHF radio system - FAILED	NOTIFICATION OF UNUSUAL EVENT
8.	Inability to monitor a significant transient in progress ABOVE CSD CONDITION	• Most (>75%) or all visual annunciator alarms on panels "A" to "K" - NOT AVAILABLE AND • All computer monitoring capability (e.g., plant computer, ERFCS) - NOT AVAILABLE AND • Significant transient - IN PROGRESS (e.g., reactor trip, SI, turbine runback >25% thermal reactor power, thermal power oscillations >10%) AND • Inability to directly monitor any one of the following using Control Room indications: • Subcriticality • Core Cooling • Heat Sink • Vessel Integrity • Containment Integrity	SITE AREA EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
9.	Unplanned loss of safety system annunciators with compensatory indicators unavailable or a transient in progress ABOVE CSD CONDITION	• Unplanned loss of most (>75%) or all visual annunciator alarms on panels "A" to "K" for GREATER THAN 15 minutes AND • All computer monitoring capability (e.g., plant computer, ERFCS) - NOT AVAILABLE OR Significant transient - INITIATED OR IN PROGRESS (e.g., reactor trip, SI, turbine runback >25% thermal reactor power, thermal power oscillations >10%)	ALERT
10.	Unplanned loss of most or all safety system annunciators for greater than 15 minutes ABOVE CSD CONDITION	Unplanned loss of most (>75%) or all visual annunciator alarms on panels "A" to "K" for GREATER THAN 15 minutes	NOTIFICATION OF UNUSUAL EVENT
11.	Evacuation of Main Control Room with control NOT established within 15 minutes ALL CONDITIONS	Evacuation of the Control Room with stable shutdown control NOT established within 15 minutes	SITE AREA EMERGENCY
12.	Evacuation of Main Control Room required ALL CONDITIONS	Evacuation of the Control Room with stable shutdown control established within 15 minutes	ALERT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	RCS leak rate exceeds makeup capacity ABOVE CSD CONDITION	• Primary system leak (LOCA) - IN PROGRESS AND • Safety Injection - REQUIRED AND • RCS subcooling based on Core Exit Thermocouples - LESS THAN 30° F OR RCS inventory cannot be maintained based on pressurizer level or RVLIS indication	SITE AREA EMERGENCY
2.	RCS leak rate limit - EXCEEDED ABOVE CSD CONDITION	• Primary system leak determined to be - GREATER THAN 50 gpm AND • Pressurizer level can be - RESTORED AND MAINTAINED	ALERT
3.	Leak rate or leakage requiring plant shutdown IAW T.S. ABOVE CSD CONDITION	Intentional reduction in power, load, or temperature IAW T.S. 3.1.C leakage limit Action Statement - HAS COMMENCED	NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
4. Steam generator tube rupture with loss of offsite power ABOVE CSD CONDITION	• Steam generator tube rupture - IN PROGRESS AND • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE AND • Atmospheric steam release from ruptured Steam Generator - OCCURRING OR REQUIRED	SITE AREA EMERGENCY
5. Excessive Primary to Secondary leakage with loss of offsite power ABOVE CSD CONDITION	• Intentional reduction in power, load, or temperature IAW T.S. 3.1.C.6 leakage limit Action Statement - HAS COMMENCED AND • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE	ALERT
6. Gross Primary to Secondary leakage ABOVE CSD CONDITION	• Steam Generator tube rupture - IN PROGRESS AND • Safety Injection - REQUIRED	ALERT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
7.	Loss of 2 of 3 fission product barriers with potential loss of 3rd barrier ALL CONDITIONS	Any two of a), b) or c) exist and the third is imminent: a) Fuel clad integrity failure as indicated by any of the following: • RCS specific activity - GREATER THAN OR EQUAL TO 300 µCi/gm dose equivalent I-131 OR 5 or more core exit thermocouples - GREATER THAN 1200° F OR CHRRMS (Inside) Containment High Range Radiation Monitor: RM-RMS-127 or -227, RM-RMS-128 or -228: GREATER THAN 2×10^3 R/hr OR Outside Containment High Range Radiation Monitor: RM-RMS-161 or -261, GREATER THAN 6.3×10^2 mR/hr b) Loss of RCS integrity as indicated by any of the following: • PORV failed open OR Loss of reactor coolant c) Loss of containment integrity as indicated by any of the following: • Containment pressure GREATER THAN 60 psia and NOT decreasing OR Release path to environment - EXISTS	GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
8. Fuel failure with steam generator tube rupture ALL CONDITIONS	Any two of a), b) or c) exists and the third is imminent: a) Fuel clad integrity failure as indicated by any of the following: • RCS specific activity GREATER THAN OR EQUAL TO 300 µCi/gm dose equivalent I-131 OR 5 or more core exit thermocouples - GREATER THAN 1200° F OR High Range Letdown Radiation Monitor: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 7.0×10^6 cpm b) S/G tube rupture as indicated by both of the following: • Safety Injection - REQUIRED AND • Steam generator tube rupture - IN PROGRESS c) Loss of Secondary integrity associated with ruptured S/G pathway as indicated by: • Steam discharge to atmosphere OR Loss of secondary coolant outside containment - IN PROGRESS	GENERAL EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1. Core damage with possible loss of coolable geometry ABOVE CSD CONDITION	a) Fuel clad failure as indicated by any of the following: • RCS Specific activity GREATER THAN 60 µCi/gm dose equivalent I-131 OR High Range Letdown Radiation Monitor: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 1.4×10^6 cpm AND b) Loss of cooling as indicated by any of the following: • 5 confirmed core exit thermocouples - GREATER THAN 1200° F OR Core delta T - ZERO OR Core delta T - RAPIDLY DIVERGING	SITE AREA EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
2.	Severe Fuel Clad Damage ABOVE CSD CONDITION	• RCS specific activity GREATER THAN 300 µCi/gm dose equivalent I-131 OR High Range Letdown Radiation Monitor: Either of the following indications occur within 30 minutes and remain for at least 15 minutes: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 5.8×10^4 cpm	ALERT
3.	Fuel clad damage indication ABOVE CSD CONDITION	• Intentional reduction in power, load, or temperature IAW T.S. 3.1.D reactor coolant activity limit Action Statement - HAS COMMENCED OR High Range Letdown Radiation Monitor: Either of the following indications occur within 30 minutes and remain for at least 15 minutes: 1-CH-RM-118, 2-CH-RM-218: GREATER THAN 5.8×10^3 cpm	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
4.	Probable large radioactivity release initiated by LOCA with ECCS failure leading to core degradation ABOVE CSD CONDITION	• Loss of reactor or secondary coolant - IN PROGRESS AND • RCS specific activity - GREATER THAN 300 µCi/gm dose equivalent I-131 OR CHRRMS (Inside) Containment High Range Radiation Monitor: RM-RMS-127 or -227, RM-RMS-128 or -228: GREATER THAN 2 x 10^3 R/hr AND • High or Low Head ECCS flow - NOT being delivered to the core (if expected by plant conditions)	GENERAL EMERGENCY
5.	Probable large radioactivity release initiated by loss of heat sink leading to core degradation ABOVE CSD CONDITION	• Loss of Main Feedwater System and Condensate System AND • Loss of Auxiliary Feedwater System AND • RHR System - NOT OPERABLE	GENERAL EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
6.	Probable large radioactivity release initiated by failure of protection system to bring reactor subcritical and causing core degradation ABOVE CSD CONDITION	• Reactor nuclear power after trip remains - GREATER THAN 5% AND • RCS pressure GREATER THAN 2485 psig and NOT decreasing OR Containment pressure and temperature - RAPIDLY INCREASING	GENERAL EMERGENCY
7.	Probable large radioactivity release initiated by loss of AC and all feedwater ABOVE CSD CONDITION	• Loss of all onsite and offsite AC power AND • Turbine Driven Auxiliary Feedwater Pump - NOT OPERABLE AND • Restoration of either of the above NOT LIKELY within 2 hours	GENERAL EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
8.	Probable large radioactivity release initiated by LOCA with loss of ECCS and containment cooling ABOVE CSD CONDITION	• Loss of reactor or secondary coolant - IN PROGRESS AND • High or Low Head ECCS flow NOT being delivered to the core (if expected by plant conditions) AND • Containment RS sump temperature - GREATER THAN 190° F and NOT decreasing OR All Containment Spray and Recirculation Spray Systems - NOT OPERABLE	GENERAL EMERGENCY
9.	Major fuel damage accident with radioactive release to containment or fuel buildings ALL CONDITIONS	• Water level in reactor vessel during refueling - BELOW TOP OF CORE OR Water level in Spent Fuel Pit verified - BELOW TOP OF SPENT FUEL AND • Verified damage to irradiated fuel resulting in readings on Ventilation Vent Kaman Monitor: RM-VG-131 GREATER THAN 4.2×10^7 µCi/sec	SITE AREA EMERGENCY

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
10.	Fuel damage accident with release of radioactivity to containment or fuel buildings ALL CONDITIONS	• Verified accident involving damage to irradiated fuel AND • HP confirms fission product release from fuel OR Readings on Ventilation Vent Kaman Monitor: RM-VG-131 GREATER THAN 2.8 x 10^5 µCi/sec	ALERT
11.	Loss of cask/fuel containment barriers or accidental criticality ALL CONDITIONS	• Verified loss of all cask/fuel containment barriers AND • HP confirms fission product release	ALERT
12.	Spent Fuel Storage Facility accident ALL CONDITIONS	• Verified Spent Fuel Storage Cask seal leakage OR Spent Fuel Storage Cask dropped or mishandled	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Extremely high Containment radiation, pressure and temperature ABOVE CSD CONDITION	• Outside Containment High Range Radiation Monitor: RM-RMS-161 or -261, GREATER THAN 3.0×10^3 mR/hr OR CHRRMS (Inside) Containment High Range Radiation Monitor: RM-RMS-127 or -227, RM-RMS-128 or -228: GREATER THAN 9×10^3 R/hr AND • Containment pressure - GREATER THAN 45 psia and is NOT DECREASING OR Containment temperature - GREATER THAN 280° F	GENERAL EMERGENCY
2.	High Containment radiation, pressure and temperature ABOVE CSD CONDITION	• Outside Containment High Range Radiation Monitor: RM-RMS-161 or -261, GREATER THAN 6.3×10^2 mR/hr OR CHRRMS (Inside) Containment High Range Radiation Monitor: RM-RMS-127 or -227, RM-RMS-128 or -228: GREATER THAN 2×10^3 R/hr AND • Containment pressure - GREATER THAN 23 psia and NOT decreasing OR Containment temperature - GREATER THAN 200° F	SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
3. High Containment radiation, pressure and temperature ABOVE CSD CONDITION	• Outside Containment High Range Radiation Monitor: RM-RMS-161 or -261 GREATER THAN 24 mR/hr OR CHRMMS (Inside) Containment High Range Radiation Monitor: RM-RMS-127 or -227, RM-RMS-128 or -228: GREATER THAN 1.54 R/hr AND • Containment pressure - GREATER THAN 17.7 psia OR Containment temperature - GREATER THAN 150° F	ALERT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Release imminent or in progress and site boundary doses projected to exceed 1.0 Rem TEDE or 5.0 Rem Thyroid CDE ALL CONDITIONS	HP assessment indicates actual or projected doses at or beyond Site Boundary - GREATER THAN 1.0 Rem TEDE or 5.0 Rem Thyroid CDE	GENERAL EMERGENCY
2.	Release imminent or in progress and site boundary doses projected to exceed 100 mrem TEDE or 500 mrem Thyroid CDE ALL CONDITIONS	HP assessment indicates actual or projected doses at or beyond Site Boundary - GREATER THAN 100 mrem TEDE or 500 mrem Thyroid CDE	SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
3. High radiation or airborne contamination levels indicate a severe degradation in control of radioactive material ALL CONDITIONS	a) Valid unexpected readings on any of the following monitors have increased by a factor of 1000: • Control Room Area — RM-RMS-157 • Auxiliary Building Control Area — RM-RMS-154 • Auxiliary Building Drumming Area — RM-RMS-155 • Decontamination Building Area — RM-RMS-151 • Fuel Pit Bridge Area — RM-RMS-153 • New Fuel Storage Area — RM-RMS-152 • Laboratory Area — RM-RMS-158 • Sample Room Area — RM-RMS-156 OR b) Surry Radwaste Facility reports valid unexpected readings on any of the following monitors have increased by a factor of 1000: • Control Room — RRM-121 • Chemistry Laboratory — RRM-122 • Local Control Panel — RRM-129 • Bitumen Control Room — RRM-130	ALERT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
4. Effluent release GREATER THAN 10 times ODCM allowable limit ALL CONDITIONS	a) Any of the following monitors indicate valid readings above specified value for GREATER THAN 15 minutes: • Vent Vent Kaman RM-VG-131 GREATER THAN 2.84×10^5 µCi/sec • Process Vent Kaman RM-GW-130 GREATER THAN 4.59×10^7 µCi/sec • Discharge Tunnel RM-SW-120 or -220 GREATER THAN 3.3×10^5 cpm OR b) HP assessment (sample results or dose projections) indicates GREATER THAN 10 times ODCM allowable limit OR c) Surry Radwaste Facility Monitor GREATER THAN 10 times ODCM allowable limit as determined by HP: • RRM-101: Ventilation Stack Noble Gas monitor OR RRM-131: Liquid Effluent Monitor	ALERT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
5. Effluent release GREATER THAN ODCM allowable limit ALL CONDITIONS	a) Any of the following monitors indicate valid readings above specified value for GREATER THAN one hour: • Vent Vent Kaman RM-VG-131 GREATER THAN 2.84×10^4 µCi/sec • Process Vent Kaman RM-GW-130 GREATER THAN 4.59×10^6 µCi/sec • Discharge Tunnel RM-SW-120 or -220 GREATER THAN 3.3×10^4 cpm OR b) HP assessment (sample results or dose projections) indicate GREATER THAN 100% ODCM allowable limit OR c) Surry Radwaste Facility Monitor GREATER THAN 100% ODCM allowable limit as determined by HP: • RRM-101: Ventilation Stack Noble Gas monitor OR RRM-131: Liquid Effluent Monitor	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Major Secondary line break with Primary to Secondary leakage GREATER THAN 50 gpm and fuel damage indicated ABOVE CSD CONDITION	• Uncontrolled loss of secondary coolant - IN PROGRESS AND • RCS specific activity > 300 µCi/gm D.E. I-131 OR High Range Letdown Radiation Monitor on affected pathway 1-CH-RM-118, 2-CH-RM-218: > 7.0×10^6 cpm AND • Condenser Air Ejector Radiation Monitor on affected pathway 1-SV-RM-111, 2-SV-RM-211: > 1×10^7 cpm OR Vent Vent Kaman Monitor RM-VG-131 > 1.1×10^7 µCi/sec OR Steam Generator Blowdown Radiation Monitor on affected pathway 1-SS-RM-112 or -113, 2-SS-RM-212 or -213: GREATER THAN 1×10^7 cpm OR Main Steam Line High Range Radiation Monitor on affected pathway RM-RI-MS-124 or -224 RM-RI-MS-125 or -225 RM-RI-MS-126 or -226 GREATER THAN 1.94 mR/hr	SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
2. Major Secondary line break with Primary to Secondary leakage GREATER THAN 10 gpm ABOVE CSD CONDITION	a) Uncontrolled loss of secondary coolant - IN PROGRESS AND b) Condenser Air Ejector Monitor 1-SV-RM-111, 2-SV-RM-211: GREATER THAN 1×10^7 cpm OR Vent Vent Kaman Monitor RM-VG-131 GREATER THAN 2.84×10^5 µCi/sec OR Steam Generator Blowdown Radiation Monitor on affected pathway 1-SS-RM-112 or -113, 2-SS-RM-212 or -213: GREATER THAN 1×10^7 cpm	ALERT
3. Major Secondary line break ABOVE CSD CONDITION	Uncontrolled loss of secondary coolant - IN PROGRESS	NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
CAUTION: EAL A.2 is duplicated below for cross-reference/comparison to EAL H.1:		
Loss of Function needed for unit HSD condition ABOVE CSD CONDITION	a) Inability to attain the minimum required heat sink as indicated by loss of the following: • Main Feedwater System AND • Auxiliary Feedwater AND • Auxiliary Feedwater Crosstie OR b) Loss of High Head flowpath as indicated by loss of the following: • Normal Charging System AND • High Head SI System	SITE AREA EMERGENCY
1. Loss of offsite and onsite AC power for more than 15 minutes ALL CONDITIONS	The following conditions exist for GREATER THAN 15 minutes: • Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE AND • Station Service Buses A, B, & C - DE-ENERGIZED AND • Emergency Buses H & J - DE-ENERGIZED	SITE AREA EMERGENCY

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
CAUTION: EAL A.2 is duplicated below for cross-reference/comparison to EAL H.2:		
Loss of Function needed for unit HSD condition ABOVE CSD CONDITION	a) Inability to attain the minimum required heat sink as indicated by loss of the following: • Main Feedwater System AND • Auxiliary Feedwater AND • Auxiliary Feedwater Crosstie OR b) Loss of High Head flowpath as indicated by loss of the following: • Normal Charging System AND • High Head SI System	SITE AREA EMERGENCY
2. Loss of all offsite and onsite AC power ALL CONDITIONS	• Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) - NOT AVAILABLE AND • Station Service Buses A, B, & C - DE-ENERGIZED AND • Emergency Buses H & J - DE-ENERGIZED	ALERT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
3. Loss of offsite power or onsite AC power capability ALL CONDITIONS	• Offsite power to unit specific Transfer Buses (Unit 1: D & F; Unit 2: E & F) NOT AVAILABLE OR Unit Main Generator and both Emergency Diesel Generators - OUT OF SERVICE	NOTIFICATION OF UNUSUAL EVENT -
4. Loss of all onsite DC power for GREATER THAN 15 minutes ALL CONDITIONS	The following conditions exist for GREATER THAN 15 minutes: • All Station Battery voltmeters - ZERO (0) VOLTS AND • No light indication available to Reserve Station Service Breakers 15D1, 15E1 and 15F1	SITE AREA EMERGENCY
5. Loss of all onsite DC power ALL CONDITIONS	• All Station Battery voltmeters - ZERO (0) VOLTS AND • No light indication available to Reserve Station Service Breakers 15D1, 15E1, and 15F1	ALERT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Fire resulting in degradation of safety systems ABOVE CSD CONDITION	• Fire which causes major degradation of a safety system function required for protection of the public AND • Affected systems are caused NOT to be operable as defined by T.S. 1.0.D and T.S. 3.0.2	SITE AREA EMERGENCY
2.	Fire potentially affecting station safety systems ABOVE CSD CONDITION	Fire which has potential for causing a safety system NOT to be operable as defined by T.S. 1.0.D and and T.S. 3.0.2	ALERT
3.	Fire lasting GREATER THAN 10 minutes ALL CONDITIONS	Fire in the Protected Area or Switchyard which is not under control within 10 minutes after Fire Brigade - DISPATCHED	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Loss of Station physical control ALL CONDITIONS	• Shift Supervisor has been informed that the Security force has been neutralized by attack, resulting in loss of physical control of station OR Shift Supervisor has been informed of intrusion into one or more Vital Areas which are occupied or controlled by an aggressor	GENERAL EMERGENCY
2.	Imminent loss of physical Station control ALL CONDITIONS	Supervisor Security Shift has notified the Shift Supervisor of imminent intrusion into a Vital Area	SITE AREA EMERGENCY
3.	Ongoing Security compromise or bomb potentially affecting station safety systems ALL CONDITIONS	Supervisor Security Shift has notified the Shift Supervisor of a confirmed un-neutralized intrusion into the Protected Area or ISFSI OR Shift Supervisor notified of a verified bomb discovered on or near a safety related system	ALERT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
4. Security threat, unauthorized attempted entry, or attempted sabotage ALL CONDITIONS	Any of the following when determined to have potential for degrading the level of safety of the plant or ISFSI • Receipt of a credible site-specific threat from Security, NRC or FBI • Confirmed hostage situation • Civil disturbance • Discovery of a bomb device (other-than on or near a safety-related system which represents an on-going security compromise) • Confirmed attempted intrusion (Protected Area or ISFSI) • Attempted sabotage	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Aircraft damage to vital plant systems ABOVE CSD CONDITION	Aircraft crash adversely affects vital structures by impact or fire	SITE AREA EMERGENCY
2.	Aircraft crash on the facility ALL CONDITIONS	• Aircraft crash within the Protected Area or Switchyard	ALERT
3.	Aircraft crash or unusual aircraft activity ALL CONDITIONS	• Confirmed notification of aircraft crash within the site boundary OR Unusual aircraft activity in the vicinity of the site as determined by the Shift Supervisor or Supervisor Security Shift	NOTIFICATION OF UNUSUAL EVENT
4.	Severe explosive damage ABOVE CSD CONDITION	Explosion which results in severe degradation of any systems required for safe shutdown	SITE AREA EMERGENCY
5.	Explosion damage to facility ALL CONDITIONS	Unplanned explosion resulting in damage to plant structure or equipment that affects plant operations	ALERT
6.	Onsite explosion ALL CONDITIONS	Confirmed report of unplanned explosion within Protected Area or Switchyard	NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
7. Entry of toxic or flammable gases or liquids into plant vital areas other than the Control Room ABOVE CSD CONDITION	• Uncontrolled release of toxic or flammable agents into Vital Areas AND • Evacuation of Vital Area other than Control Room - REQUIRED OR Loss of a safety system function required for protection of the public	SITE AREA EMERGENCY
8. Entry of toxic or flammable gases or liquids into plant facility ALL CONDITIONS	Uncontrolled release of toxic or flammable agent which causes: • Evacuation of personnel from plant areas AND • Safety related equipment to be rendered inoperable	ALERT
9. Onsite or nearsite release of toxic or flammable liquids or gases ALL CONDITIONS	Unplanned release of toxic or flammable agents which may affect safety of station personnel or equipment	NOTIFICATION OF UNUSUAL EVENT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
10. Severe missile damage to safety systems ABOVE CSD CONDITION	Missile impact causing severe degradation of safety systems required for unit shutdown	SITE AREA EMERGENCY
11. Missile damage to safety related equipment or structures ABOVE CSD CONDITION	Notification of missile impact causing damage to safety related equipment or structures	ALERT
12. Turbine failure with penetration POWER	Failure of turbine/ generator rotating equipment resulting in casing penetration	ALERT
13. Turbine rotating component failure with no casing penetration POWER & STARTUP	Failure of turbine/ generator rotating component resulting in unit trip	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Earthquake GREATER THAN DBE levels ABOVE CSD CONDITION	• Earthquake which activates the Event Indicator on the Strong Motion Accelerograph AND • Safety related systems are significantly degraded by earthquake OR AP-37.00, SEISMIC EVENT, calculations indicate horizontal motion of 0.15g or GREATER	SITE AREA EMERGENCY
2.	Earthquake GREATER THAN OBE levels ALL CONDITIONS	• Confirmed earthquake which activates Event Indicator on the Strong Motion Accelerograph AND • Safety related equipment is rendered inoperable by earthquake OR AP-37.00, SEISMIC EVENT, calculations indicate horizontal motion of 0.07g or GREATER	ALERT
3.	Earthquake detected ALL CONDITIONS	Confirmed earthquake which activates the Event Indicator on the Strong Motion Accelerograph	NOTIFICATION OF UNUSUAL EVENT

CONDITIONS/APPLICABILITY	INDICATION	CLASSIFICATION
4. Tornado striking facility ALL CONDITIONS	Tornado visually detected striking structures within the Protected Area or Switchyard	ALERT
5. Tornado within Protected Area or Switchyard ALL CONDITIONS	Tornado visually detected within Protected Area or Switchyard	NOTIFICATION OF UNUSUAL EVENT
6. Sustained winds in excess of design levels experienced or projected ABOVE CSD CONDITION	Sustained winds 150 mph OR GREATER experienced or projected	SITE AREA EMERGENCY
7. Hurricane winds near design basis level experienced or projected ALL CONDITIONS	Hurricane winds 120 mph OR GREATER experienced or projected	ALERT
8. Hurricane force winds projected onsite within 12 hours ALL CONDITIONS	• "Inland High Wind Warning for Hurricane Force Winds" in effect for Surry County OR Sustained hurricane force winds (GREATER THAN 73 mph) projected onsite within 12 hours	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
9.	Flood or low water level above design levels ALL CONDITIONS	• Flood in the James River - GREATER THAN +27 feet MSL (station operating level) OR Water level in the James River - LESS THAN -9 feet MSL as indicated by loss of Emergency SW Pump suction	SITE AREA EMERGENCY
10.	Flood or low water level near design levels ALL CONDITIONS	• Flood in the James River - GREATER THAN +21 feet MSL (Emergency Service Water Pump House entrance is at +21 1/6 feet) but LESS THAN +27 feet MSL (Site Area Emergency criteria) OR Water level in Surry Power Station Intake Canal - LESS THAN +23 1/2 feet and decreasing	ALERT
11.	Flood or low water level ALL CONDITIONS	• Flood in the James River - GREATER THAN +12 feet MSL (CW pump motors and entrance to the CW pump pits are at +12 1/2 feet MSL) but LESS THAN +21 feet MSL (Alert criteria) OR Water level in Surry Power Station Intake Canal (CW-LI-101, -201) - LESS THAN +23 1/2 feet and NOT increasing	NOTIFICATION OF UNUSUAL EVENT

	CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
1.	Any major internal or external event which singly or in combination cause massive damage to station facilities or may warrant evacuation of the public ALL CONDITIONS	Shift Supervisor/ Station Emergency Manager judgement	GENERAL EMERGENCY
2.	Station conditions which may warrant notification of the public near the site ALL CONDITIONS	Shift Supervisor/ Station Emergency Manager judgement	SITE AREA EMERGENCY
3.	Station conditions which have the potential to degrade or are actually degrading the level of safety of the station ALL CONDITIONS	Shift Supervisor/ Station Emergency Manager judgement	ALERT

CONDITION/APPLICABILITY	INDICATION	CLASSIFICATION
4. Station conditions which warrant increased awareness of state and/ or local authorities ALL CONDITIONS	Shift supervisor judgment that any of the following exist: • Unit shutdown is other than a controlled shutdown OR Unit is in an uncontrolled condition during operation OR A condition exists which has the potential for escalation and, therefore, warrants notification	NOTIFICATION OF UNUSUAL EVENT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	CONSIDERATIONS FOR OPERATIONS RESPONSE UNDER ABNORMAL CONDITIONS	43
ATTACHMENT 2		PAGE 1 of 1

This attachment provides procedural guidance for controlling selected emergency response actions when their implementation would have adverse results.

Station Emergency Manager (SEM) approval is required before any required action is postponed, suspended or modified. The guidance below is not all-inclusive.

UNANTICIPATED HAZARD EXISTS (e.g., security event, tornado or toxic release):

IF implementation of emergency response actions could compromise Security Plan response strategies, THEN consider postponing or suspending emergency response actions until threat has been resolved, e.g., on-site announcement directing assembly and emergency response facility activation, pager activation and call-out per EPIP-3.05, AUGMENTATION OF EMERGENCY RESPONSE ORGANIZATION, dispatch of Security Team members to the LEOF per EPIP-3.04, ACTIVATION OF LOCAL EMERGENCY OPERATIONS FACILITY, and staging of road blocks per EPIP-5.04, ACCESS CONTROL.

IF assembling on-site personnel for accountability or activation of emergency response facilities could endanger plant personnel, THEN consider postponing emergency assembly until hazardous conditions are resolved. (Consider having Corporate Security notify corporate emergency response organization only using CPIP-3.4, INNSBROOK SECURITY SUPPORT, and notifying personnel in unaffected areas on-site selectively.)

IF notifying augmentation could create a safety hazard for personnel coming to the station, THEN consider postponing augmentation notification. (Consider having Corporate Security notify corporate emergency response organization only using CPIP-3.4, INNSBROOK SECURITY SUPPORT, or defering notifications until hazardous conditions are resolved.)

ANTICIPATED SITUATION (e.g., forecasted severe weather or grid disturbance):

IF all or part of the ERO has been staged in anticipation of a predicted event, THEN notify Security to omit performance of augmentation notification (as described in EPIP-3.05, AUGMENTATION OF EMERGENCY RESPONSE ORGANIZATION).

IF adequate controls have been established to continually account for personnel staged in anticipation of a predicted event, THEN notify Security to omit performance of initial accountability (as described in EPIP-5.03, PERSONNEL ACCOUNTABILITY).

IF a decision has been made to staff the Central EOF in lieu of the LEOF, THEN notify Security that performance of EPIP-3.04, ACTIVATION OF LOCAL EMERGENCY OPERATIONS FACILITY, is not required.

IF environmental conditions are hazardous, THEN consult with Security Team Leader about suspending procedural requirements for staging road blocks (IAW EPIP-5.04, ACCESS CONTROL).

VIRGINIA POWER
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.30	USE OF MIDAS CLASS A MODEL (With 2 Attachments)	9 PAGE 1 of 23

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.

Approvals on File

Effective Date 03/21/02

NOTE:
- MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:
  - 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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.

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- 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

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2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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)

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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 7.
	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	

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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 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)

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IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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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)

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4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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	
	i) Touch box for MET, RAD, X/Q, DOSE SUMMARY report	

(STEP 4 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

4 GET REPORTS: (Continued)

j) Touch CONFIRM

* *

CAUTION: The Quick Dose option uses available valid automatic inputs to calculate a dose projection without identifying invalid inputs to the user. Therefore, if current radiation monitor or flow readings for the release pathway are recognized as invalid, the Quick Dose result will exclude these parameters and may yield an invalid (nonconservative) estimate.

* *

k) Check current radiation monitor and flow readings appear for expected release paths

k) IF MET, RAD, X/Q, DOSE SUMMARY report indicates Quick Dose results are suspect, e.g., release path excluded from dose calculation, THEN do the following:

1) Record note on RADIOLOGICAL STATUS REPORT indicating it appears to be based on incomplete inputs and is not to be used.

2) Do one of the following:

- IF MIDAS dose projections to be continued using operator input, THEN GO TO Step 6.

OR

- IF hand-calculations to be used for evaluation of release consequences, THEN initiate EPIP-4.08, INITIAL OFFSITE RELEASE ASSESSMENT.

l) Touch CONTINUE

(STEP 4 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. TERMINAL INTERFACE CRITERIA

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. SCREEN PRINT CRITERIA

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. TERMINAL MALFUNCTION RESPONSE CRITERIA

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. TERMINAL LOCK-UP RESPONSE CRITERIA

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
4	GET REPORTS: (Continued)	
	m) Touch EXIT TO MORE REPORTS	
	n) Touch REPORTS	
	o) Check with RAD/RAC about need for the following specific reports (to support State assessments): • DOSE/DOSE RATE PLOTS • Additional SPECIAL REPORT • Additional RADIOLOGICAL STATUS REPORT	o) <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 16.
	p) Touch box for desired report	
	q) Touch CONFIRM	
	r) Check if REPORT PARAMETER SELECTION screen appears	r) GO TO Step 15.
	s) 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	
	t) GO TO Step 15	

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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 7.

b) Touch REAL TIME ENHANCED DOSE PROJECTIONS

c) Touch CONFIRM

(STEP 5 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

5 DO ENHANCED DOSE ASSESSMENT WITH DEFAULT DATA: (Continued)

d) WHEN DBA ACCIDENT TYPE SELECTION screen appears, THEN touch the selection box for the accident type as specified by RAD/RAC:

- MSLB (Main Steam Line Break)
- SGTR (Steam Generator Tube Rupture)
- FUEL HANDLING (in Fuel Building only)
- WGTR (Waste Gas Decay Tank Rupture)

- LOCA - PC (PRI COOL)
- LOCA - GAP
- LOCA - MELT
- LOCKED ROTOR

e) Touch CONFIRM

f) RETURN TO Step 3

_____ 6 RETURN TO ACCIDENT RUN MENU SELECTION SCREEN:

a) Touch CONTINUE

b) Touch EXIT TO MORE REPORTS

c) Touch MORE REPORTS

d) Touch EXIT twice to return to the ACCIDENT RUN MENU SELECTION screen

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Only use monitor values from 1-RM-VG-110 or 1-RM-GW-102 if 1-RM-VG-131-1 or 1-RM-GW-130-1 are unavailable. Values for 1-RM-VG-110 and 1-RM-GW-102 must be corrected due to vacuum in the detector chamber by the following equation:

Corrected CPM = Indicated CPM X [30 ÷ (30 - inches Hg)]

* *

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.

_____ 7	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 screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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.

_____ 8 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 screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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

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2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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.

_____ 9 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 10
Radiation monitor data is available from file	1) Touch MONITOR DATA FROM V & F FILE 2) Touch CONFIRM 3) GO TO Step 12
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 11
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 11
Design Basis Assident Default (DBA)	1) Touch DEFAULT DBA ACCIDENT 2) Touch CONFIRM 3) GO TO Step 12

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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

_____ 10 ENTER MONITOR DATA MANUALLY:

(STEP 10 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

10 ENTER MONITOR DATA MANUALLY: (Continued)

a) WHEN DBA ACCIDENT TYPE SELECTION screen appears, THEN touch the selection box for the accident type as specified by RAD/RAC:

- MSLB (Main Steam Line Break)
- SGTR (Steam Generator Tube Rupture)
- FUEL HANDLING (in Fuel Building only)
- WGTR (Waste Gas Decay Tank Rupture)

- LOCA - PC (PRI COOL)
- LOCA - GAP
- LOCA - MELT
- LOCKED ROTOR

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 10.c.1 through 10.c.2 until all monitor data is entered

(STEP 10 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

10 ENTER MONITOR DATA MANUALLY: (Continued)

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

e) GO TO Step 13

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

_____ 11 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 11.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 13

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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

_____ 12 ENTER ACCIDENT TYPE:

a) Verify DBA ACCIDENT TYPE SELECTION screen appears

a) IF accident type screen does NOT appear, THEN GO TO Step 13.

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

- MSLB (Main Steam Line Break)
- SGTR (Steam Generator Tube Rupture)
- FUEL HANDLING (in Fuel Building only)
- WGTR (Waste Gas Decay Tank Rupture)

- LOCA - PC (PRI COOL)
- LOCA - GAP
- LOCA - MELT
- LOCKED ROTOR

c) Touch CONFIRM

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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 D COPY/S COPY key will produce light text on black background (reverse image), which may improve resolution of maps/isopleths.

2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 13	ENTER RELEASE TIMING SELECTION:	
	a) Verify NO "abnormal run" occurred	a) IF recovering from an "abnormal run", THEN GO TO Step 14.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 13.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 13.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 13.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 screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 14	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 9 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 screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
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- 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. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

IF 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.

_____ 15 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 15.c.

1) Touch MAP FEATURES

2) Select (highlight) desired options on screen menu

3) Touch CONFIRM

(STEP 15 CONTINUED ON NEXT PAGE)

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- ACCIDENT RUN MENU SELECTION (CONFIRM, EXIT, RESET)
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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.)
- Release Point 2: Process Vent
- Release Point 3: Main Steam Safety Valves and AFWPT

1. **TERMINAL INTERFACE CRITERIA**

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

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. **SCREEN PRINT CRITERIA**

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3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
15	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 15.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 15.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	
_____ 16	CHECK IF MIDAS OPERATIONS CAN BE TERMINATED: • Event - TERMINATED • RAD/RAC directs termination of MIDAS operation	RETURN TO Step 5.

NOTE: • MIDAS screen selection boxes include: RESET, CONFIRM and EXIT. RESET clears data entered before initiating a run or returns to previous screen. CONFIRM is selected to continue model processing when all information on screen is correct. EXIT exits the modeling process. Selection touch screens are as follows:

- 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:

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1. **TERMINAL INTERFACE CRITERIA**

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

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

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2. **SCREEN PRINT CRITERIA**

WHEN individual screen print desired, THEN press "D COPY/S COPY" key while screen is displayed.

3. **TERMINAL MALFUNCTION RESPONSE CRITERIA**

IF terminal malfunctions, THEN have dose projections made from another terminal.

4. **TERMINAL LOCK-UP RESPONSE CRITERIA**

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 17 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

_____ 18 TERMINATE EPIP-4.30:

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

- By: _____

  Date: _____

  Time: _____

-END-

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.30	RESPONSE TO TERMINAL LOCK-UP	9
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 and continue procedure using manually entered monitor and meteorological data.

__ 9. Notify the MIDAS System Manager or Code Administrator, 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 100 hours post shutdown (= decay time).

4. **WASTE GAS DECAY TANK RUPTURE:**
   - Release duration assumed for 15 minutes.
   - Entire contents of tank released (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