

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 3, 2003

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

Serial No. 02-773
NAPS/MPW
Docket Nos. 50-338/339
License Nos. NPF-4/7

Gentlemen:

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

Pursuant to 10 CFR 50.54(q), enclosed are recent revisions to the North Anna Power Station Emergency Plan Implementing Procedures. These 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 Attachment 1, Tabulation of Changes.

Very truly yours,



D. A. Heacock
Site Vice President

Commitments Stated or Implied: None.

Enclosures

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

Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

A045

**ATTACHMENT 1
TABULATION OF CHANGES**

**VIRGINIA ELECTRIC AND POWER COMPANY
REVISIONS TO NORTH ANNA POWER STATION
EMERGENCY PLAN AND IMPLEMENTING PROCEDURES**

Enclosed are recent revisions to the North Anna Power Station Emergency Plan Implementing Procedures (EIPs). Please take the following actions in order to keep your manual updated.

REMOVE AND DESTROY	DATED	INSERT	EFFECTIVE DATE
EPIP - 1.01, Rev. 36	05/15/02	EPIP - 1.01, Rev. 37	12/18/02
EPIP - 4.02, Rev. 12	08/02/00	EPIP - 4.02, Rev. 13	12/18/02
EPIP - 4.16, Rev. 14	02/28/00	EPIP - 4.16, Rev. 15	12/18/02
EPIP - 4.17, Rev. 15	06/19/02	EPIP - 4.17, Rev. 16	12/18/02
EPIP - 4.18, Rev. 12	06/19/02	EPIP - 4.18, Rev. 13	12/18/02
EPIP - 4.34, Rev. 2	02/28/00	EPIP - 4.34, Rev. 3	12/18/02

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

NORTH ANNA POWER STATION
 LIST OF NAPS EMERGENCY PLAN IMPLEMENTATION PROCEDURES
 CHECK DHIS FOR LATEST DOCUMENT INFORMATION

DOCUMENT NUMBER	REV	APPROVAL **DATE**	EFFECT** **DATE**	DOCUMENT TITLE
EPIP-1.01	037	12/13/02	12/18/02	EMERGENCY MANAGER CONTROLLING PROCEDURE
EPIP-1.02	011	09/07/99	10/01/99	RESPONSE TO NOTIFICATION OF UNUSUAL EVENT
EPIP-1.03	014	09/07/99	10/01/99	RESPONSE TO ALERT
EPIP-1.04	014	09/07/99	10/01/99	RESPONSE TO SITE AREA EMERGENCY
EPIP-1.05	016	09/07/99	10/01/99	RESPONSE TO GENERAL EMERGENCY
EPIP-1.06	004	09/05/01	09/05/01	PROTECTIVE ACTION RECOMMENDATIONS
EPIP-2.01	025	08/13/02	08/28/02	NOTIFICATION OF STATE AND LOCAL GOVERNMENTS
EPIP-2.02	015	08/13/02	08/28/02	NOTIFICATION OF NRC
EPIP-3.02	020	08/13/02	08/28/02	ACTIVATION OF TECHNICAL SUPPORT CENTER
EPIP-3.03	012	12/20/93	01/01/94	ACTIVATION OF OPERATIONAL SUPPORT CENTER
EPIP-3.04	015	07/14/98	07/20/98	ACTIVATION OF LOCAL EMERGENCY OPERATIONS FACILITY
EPIP-3.05	001	09/07/99	10/01/99	AUGMENTATION OF EMERGENCY RESPONSE ORGANIZATION
EPIP-4.01	018	04/05/02	04/09/02	RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE
EPIP-4.02	013	12/13/02	12/18/02	RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE
EPIP-4.03	011	12/20/93	01/01/94	DOSE ASSESSMENT TEAM CONTROLLING PROCEDURE
EPIP-4.04	009	11/21/94	11/28/94	EMERGENCY PERSONNEL RADIATION EXPOSURE
EPIP-4.05	009	01/28/00	02/04/00	RESPIRATORY PROTECTION AND KI ASSESSMENT
EPIP-4.06	009	12/21/95	12/28/95	PERSONNEL MONITORING AND DECONTAMINATION
EPIP-4.07	014	09/29/00	10/06/00	PROTECTIVE MEASURES
EPIP-4.08	014	05/10/02	06/19/02	INITIAL OFFSITE RELEASE ASSESSMENT
EPIP-4.09	013	05/10/02	06/19/02	SOURCE TERM ASSESSMENT
EPIP-4.10	011	08/13/02	08/28/02	DETERMINATION OF X/Q
EPIP-4.13	009	09/29/00	10/06/00	OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA

NORTH ANNA POWER STATION
 LIST OF NAPS EMERGENCY PLAN IMPLEMENTATION PROCEDURES
 CHECK DMIS FOR LATEST DOCUMENT INFORMATION

DOCUMENT NUMBER	REV	APPROVAL **DATE**	EFFECT** **DATE**	DOCUMENT TITLE
EPIP-4.14	007	12/20/93	01/01/94	INPLANT MONITORING
EPIP-4.15	011	02/18/00	02/28/00	ONSITE MONITORING
EPIP-4.16	015	12/13/02	12/18/02	OFFSITE MONITORING
EPIP-4.17	016	12/13/02	12/18/02	MONITORING OF EMERGENCY RESPONSE FACILITIES
EPIP-4.18	013	12/13/02	12/18/02	MONITORING OF LEOF
EPIP-4.21	008	12/20/93	01/01/94	EVACUATION AND REMOTE ASSEMBLY AREA MONITORING
EPIP-4.22	014	04/05/02	04/09/02	POST ACCIDENT SAMPLING OF CONTAINMENT AIR
EPIP-4.23	014	04/05/02	04/09/02	POST ACCIDENT SAMPLING OF REACTOR COOLANT
EPIP-4.24	012	08/02/02	08/15/02	GASEOUS EFFLUENT SAMPLING DURING AN EMERGENCY
EPIP-4.25	008	07/23/93	07/23/93	LIQUID EFFLUENT SAMPLING DURING AN EMERGENCY
EPIP-4.26	011	07/26/01	09/13/01	HIGH LEVEL ACTIVITY SAMPLE ANALYSIS
EPIP-4.28	007	01/09/97	01/14/97	TSC/LEOF RADIATION MONITORING SYSTEM
EPIP-4.30	005	04/05/02	04/09/02	USE OF MIDAS CLASS A MODEL
EPIP-4.31	003	06/20/94	06/20/94	USE OF MIDAS CLASS B MODEL
EPIP-4.33	003	11/28/00	11/30/00	HEALTH PHYSICS NETWORK COMMUNICATIONS
EPIP-4.34	003	12/13/02	12/18/02	FIELD TEAM RADIO OPERATOR INSTRUCTIONS
EPIP-5.01	011	12/11/96	12/17/96	TRANSPORTATION OF CONTAMINATED INJURED PERSONNEL
EPIP-5.03	016	02/18/00	02/28/00	PERSONNEL ACCOUNTABILITY
EPIP-5.04	009	08/02/02	08/15/02	ACCESS CONTROL
EPIP-5.05	013	06/25/96	07/02/96	SITE EVACUATION
EPIP-5.07	011	07/25/00	08/02/00	ADMINISTRATION OF RADIOPROTECTIVE DRUGS
EPIP-5.08	007	11/28/00	11/30/00	DAMAGE CONTROL GUIDELINE
EPIP-5.09	004	08/02/02	08/15/02	SECURITY TEAM LEADER CONTROLLING PROCEDURE

DATE: 002-12-18
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NORTH ANNA POWER STATION
LIST OF NAPS EMERGENCY PLAN IMPLEMENTATION PROCEDURES
CHECK DMIS FOR LATEST DOCUMENT INFORMATION

DOCUMENT NUMBER	REV	APPROVAL **DATE**	EFFECT** **DATE**	DOCUMENT TITLE
----- EPIP-6.01	007	05/12/99	05/17/99	----- RE-ENTRY/RECOVERY GUIDELINE

VIRGINIA POWER
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-1.01	PROCEDURE TITLE EMERGENCY MANAGER CONTROLLING PROCEDURE (With 3 Attachments)	REVISION 37
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PURPOSE

To assess potential emergency conditions and initiate corrective actions.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated To A Controlled Source
As Required to Perform Work

ENTRY CONDITIONS

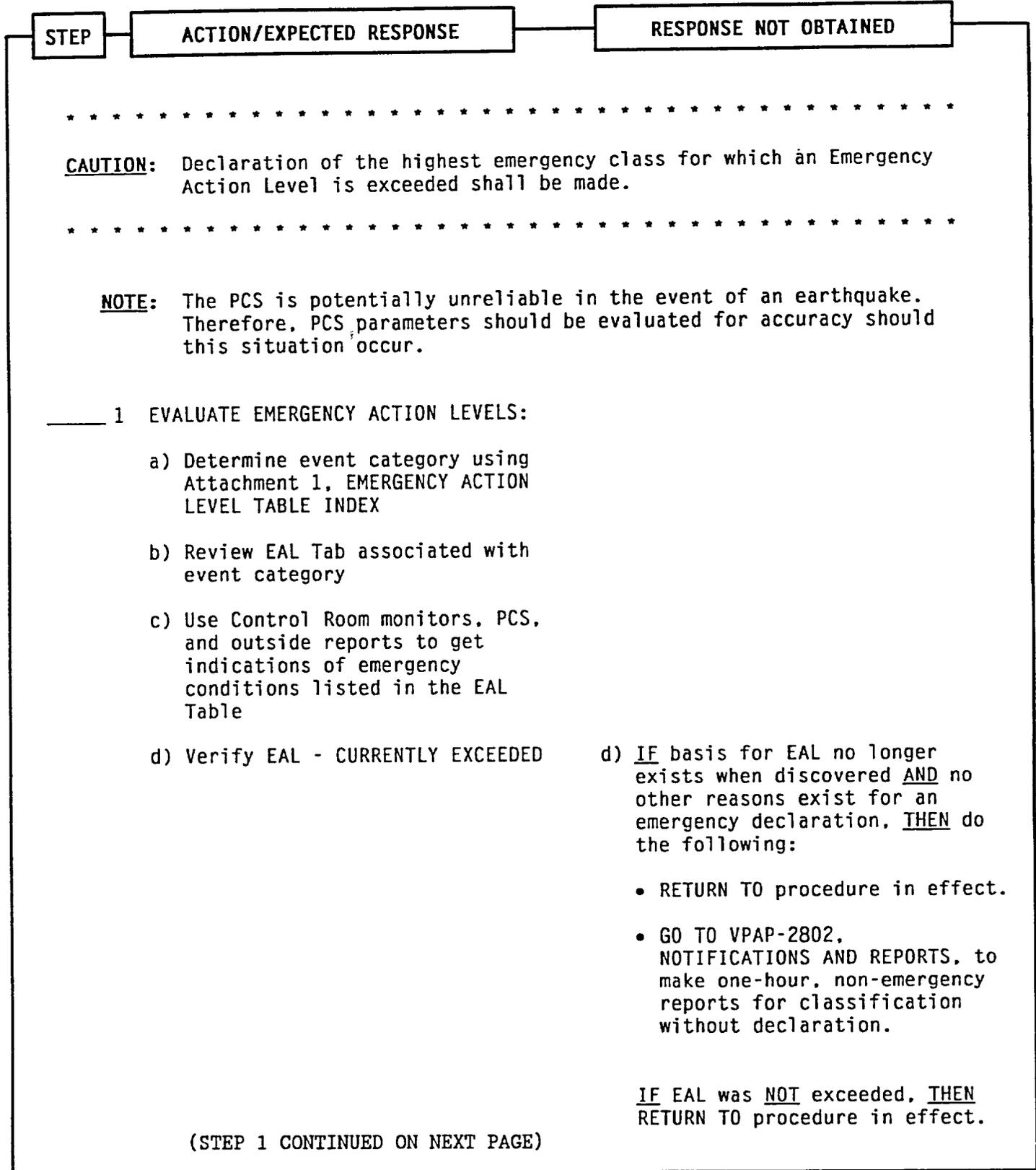
Any of the following:

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 12/18/2002

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NUMBER EPIP-1.01	PROCEDURE TITLE EMERGENCY MANAGER CONTROLLING PROCEDURE	REVISION 37
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
1	EVALUATE EMERGENCY ACTION LEVELS: (Continued)	
	e) Record procedure initiation:	
	<ul style="list-style-type: none"> • By: _____ Date: _____ Time: _____ 	
	f) Initiate a chronological log of events	
	g) Declare position of Station Emergency Manager	
	<p>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.</p>	
_____ 2	CHECK - CONDITIONS ALLOW FOR NORMAL IMPLEMENTATION OF EMERGENCY RESPONSE ACTIONS	<p><u>IF</u> deviation from normal emergency response actions warranted, <u>THEN</u> do the following:</p>
		a) Refer to Attachment 3, Considerations for Operations Response Under Abnormal Conditions.
		b) Consider applicability of 50.54(x).
		c) <u>IF</u> classification/assembly announcement deferred, <u>THEN</u> GO TO Step 4.

NUMBER EPIP-1.01	PROCEDURE TITLE EMERGENCY MANAGER CONTROLLING PROCEDURE	REVISION 37
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
3	<p>NOTIFY PLANT STAFF OF ALERT OR HIGHER CLASSIFICATION:</p> <p>a) Check classification - ALERT OR HIGHER</p> <p>b) Check if emergency assembly and accountability - PREVIOUSLY CONDUCTED</p> <p>c) Have Control Room sound EMERGENCY alarm and make announcement on station Gai-Tronics system as follows: “(Emergency classification) has been declared as the result of _____” (event)</p> <p>d) Repeat Step 3.c</p>	<p>a) GO TO Step 4.</p> <p>b) Do the following:</p> <p>1) Have Control Room sound EMERGENCY alarm and make announcement on station Gai-Tronics system as follows: “(Emergency classification) has been declared as the result of _____” (event) “All Emergency Response personnel report to your assigned stations” “All contractor personnel not responding to the emergency and all visitors report to the Security Building” “All other personnel report to your Emergency Assembly Areas”</p> <p>2) Repeat RNO Step 3.b.1.</p> <p>3) GO TO Step 4.</p>

NUMBER EPIP-1.01	PROCEDURE TITLE EMERGENCY MANAGER CONTROLLING PROCEDURE	REVISION 37
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
***** CAUTION: Continue through this and all further instructions unless otherwise directed to hold. *****		
4	INITIATE SUPPORTING PROCEDURES:	
	a) Direct Emergency Communicators to initiate the following procedures:	
	1) EPIP-2.01, NOTIFICATION OF STATE AND LOCAL GOVERNMENTS	
	2) EPIP-2.02, NOTIFICATION OF NRC	
	b) Direct HP to initiate EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE	
	c) Establish communications with Security Team Leader:	
	1) Provide Security with current emergency classification	
	2) Notify Security which Operations Shift is designated for coverage	
	3) Direct Security to initiate EPIP-5.09, SECURITY TEAM LEADER CONTROLLING PROCEDURE	

NUMBER EPIP-1.01	PROCEDURE TITLE EMERGENCY MANAGER CONTROLLING PROCEDURE	REVISION 37 <hr/> PAGE 6 of 7
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 5	CHECK TSC - ACTIVATED	<p><u>IF</u> TSC <u>NOT</u> activated, <u>THEN</u> do the following:</p> <ul style="list-style-type: none"> a) Have STA report to the Control Room. b) Notify Superintendent Operations or Operations Manager On Call. c) Consider having Radiological Assessment Director report to the Control Room. d) <u>WHEN</u> relief SEM arrives, <u>THEN</u> perform turnover using EPIP-1.01, Attachment 2, Turnover Checklist.
_____ 6	<p>IMPLEMENT EPIP FOR EMERGENCY CLASSIFICATION IN EFFECT:</p> <ul style="list-style-type: none"> • Notification of Unusual Event - GO TO EPIP-1.02, RESPONSE TO NOTIFICATION OF UNUSUAL EVENT • Alert - GO TO EPIP-1.03, RESPONSE TO ALERT • Site Area Emergency - GO TO EPIP-1.04, RESPONSE TO SITE AREA EMERGENCY • General Emergency - GO TO EPIP-1.05, RESPONSE TO GENERAL EMERGENCY 	

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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:	
	<ul style="list-style-type: none"> • Emergency termination • Facility de-activation • Selective release of personnel • Completion and collection of procedures • Recovery 	
9	TERMINATE EPIP-1.01:	
	<ul style="list-style-type: none"> • Give completed EIPs, forms and other applicable records to Nuclear Emergency Preparedness (TSC Emergency Procedures Coordinator if TSC activated) 	
	Completed By: _____	
	Date: _____	
	Time: _____	
	-END-	

NUMBER	ATTACHMENT TITLE	REVISION
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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.

<u>EVENT CATEGORY:</u>	<u>TAB</u>
1. Safety, Shutdown, or Assessment System Event.....	A
2. Reactor Coolant System Event.....	B
3. Fuel Failure or Fuel Handling Accident.....	C
4. Containment Event.....	D
5. Radioactivity Event.....	E
6. DELETED	
7. Loss of Secondary Coolant.....	G
8. Electrical Failure.....	H
9. Fire.....	I
10. Security Event.....	J
11. Hazard to Station Operation.....	K
12. Natural Events.....	L
13. Miscellaneous Abnormal Events.....	M

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>			
<p>CAUTION: EAL C.2 is duplicated below for cross-reference/comparison to EAL A.1:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;"> <p>C.2. Probable large radioactivity release initiated by loss of heat sink leading to core degradation</p> <p>MODES 1, 2, 3 & 4</p> </td> <td style="width: 33%; vertical-align: top;"> <p>Loss of Main Feedwater System, Condensate System and Auxiliary Feedwater System</p> </td> <td style="width: 33%; vertical-align: top;"> <p>GENERAL EMERGENCY</p> </td> </tr> </table>			<p>C.2. Probable large radioactivity release initiated by loss of heat sink leading to core degradation</p> <p>MODES 1, 2, 3 & 4</p>	<p>Loss of Main Feedwater System, Condensate System and Auxiliary Feedwater System</p>	<p>GENERAL EMERGENCY</p>
<p>C.2. Probable large radioactivity release initiated by loss of heat sink leading to core degradation</p> <p>MODES 1, 2, 3 & 4</p>	<p>Loss of Main Feedwater System, Condensate System and Auxiliary Feedwater System</p>	<p>GENERAL EMERGENCY</p>			
<p>1. Loss of function needed for unit HSD condition</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> • Total loss of the Charging/SI System <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • Total loss of the Main Feedwater and Auxiliary Feedwater systems 	<p>SITE AREA EMERGENCY</p>			
<p>2. Failure of the Reactor Protection System to initiate and complete a required trip while at power</p> <p>MODES 1 & 2</p>	<ul style="list-style-type: none"> • Reactor trip setpoint and coincidences - EXCEEDED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Automatic trip from RPS - FAILED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Manual trip from Control Room - FAILED 	<p>SITE AREA EMERGENCY</p>			

NUMBER	ATTACHMENT TITLE	REVISION
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>3. Inability to monitor a significant transient in progress</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> • Most (>75%) or all annunciator alarms on panels "A" to "K" - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • All computer monitoring capability (e.g., PCS) - NOT AVAILABLE <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Significant transient - IN PROGRESS (e.g., reactor trip, SI actuation, turbine runback >25% thermal reactor power, thermal power oscillations >10%) <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Inability to directly monitor any one of the following using Control Room indications: <ul style="list-style-type: none"> • Subcriticality • Core Cooling • Heat Sink • Vessel Integrity • Containment Integrity 	<p>SITE AREA EMERGENCY</p>
<p>4. Evacuation of Main Control Room with control not established within 15 minutes</p> <p>ALL MODES</p>	<p>Evacuation of the Control Room with local shutdown control not established within 15 minutes</p>	<p>SITE AREA EMERGENCY</p>

NUMBER	ATTACHMENT TITLE	REVISION
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>5. Total loss of function needed for unit CSD condition</p> <p>MODES 5 & 6</p>	<ul style="list-style-type: none"> • Secondary system cooling capability - UNAVAILABLE <li style="text-align: center;"><u>AND</u> • Loss of any of the following systems: <ul style="list-style-type: none"> • Service Water • Component Cooling • RHR <li style="text-align: center;"><u>AND</u> • RCS temperature GREATER THAN 140 °F 	ALERT
<p>6. Failure of the Reactor Protection System to complete a trip which takes the Reactor Subcritical</p> <p>MODES 1 & 2</p>	<ul style="list-style-type: none"> • Reactor trip setpoint and coincidences - EXCEEDED <li style="text-align: center;"><u>AND</u> • Automatic trip from RPS - FAILED <li style="text-align: center;"><u>AND</u> • Manual trip - REQUIRED <li style="text-align: center;"><u>AND</u> • Manual trip from Control Room - SUCCESSFUL 	ALERT

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>7. Unplanned loss of safety system annunciators with compensatory indicators unavailable or a transient in progress</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> • Unplanned loss of most (>75%) or all annunciator alarms on panels "A" to "K" for GREATER THAN 15 minutes <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • All computer monitoring capability (e.g., PCS) - NOT AVAILABLE <p style="text-align: center;"><u>OR</u></p> <p>Significant transient - INITIATED OR IN PROGRESS (e.g., reactor trip, SI, turbine runback > 25% thermal reactor power, thermal power oscillations > 10%)</p>	<p>ALERT</p>
<p>8. Evacuation of Main Control Room required</p> <p>ALL MODES</p>	<p>Evacuation of the Control Room with shutdown control established within 15 minutes</p>	<p>ALERT</p>
<p>9. Inability to reach required mode within technical specification limits</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> • Intentional reduction in power, load or temperature IAW T.S. Action Statement - HAS COMMENCED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • T.S. Action Statement time limit for mode change - CANNOT BE MET 	<p>NOTIFICATION OF UNUSUAL EVENT</p>

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB A)	REVISION 37
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>10. Failure of a safety or relief valve to close after pressure reduction, which may affect the health and safety of the public</p> <p>MODES 1, 2, 3, 4 & 5</p>	<ul style="list-style-type: none"> • <u>RCS</u> • RCS pressure - LESS THAN 2000 psig <li style="text-align: center;">OR • NDT Protection System - IN SERVICE <li style="text-align: center;">AND • Any indication after lift or actuation that Pressurizer Safety or PORV - REMAINS OPEN <li style="text-align: center;">AND • Flow - UNISOLABLE • <u>Main Steam</u> • Excessive Steam Generator Safety, PORV or Decay Heat Release flow as indicated by rapid RCS cooldown rate <li style="text-align: center;">AND • Main Steam pressure greater than 100 psi below setpoint of affected valve 	<p>NOTIFICATION OF UNUSUAL EVENT</p>
<p>11. Unplanned loss of most or all safety system annunciators for greater than 15 minutes</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> • Unplanned loss of most (>75%) or all annunciators on panels "A" to "K" for GREATER THAN 15 minutes 	<p>NOTIFICATION OF UNUSUAL EVENT</p>

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB A)	REVISION 37
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
12. Loss of communications capability ALL MODES	<ul style="list-style-type: none"> • Station PBX phone system - FAILED <li style="text-align: center;"><u>AND</u> • Station Gai-tronics system - FAILED <li style="text-align: center;"><u>AND</u> • Station UHF radio system - FAILED 	NOTIFICATION OF UNUSUAL EVENT

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>1. Loss of 2 of 3 fission product barriers with potential loss of 3rd barrier</p> <p>ALL MODES</p>	<p>Any two of a), b) or c) exist and the third is imminent:</p> <p>a) Fuel clad integrity failure as indicated by any of the following:</p> <ul style="list-style-type: none"> • RCS specific activity greater than or equal to 300.0 $\mu\text{Ci/gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>5 or more core exit thermocouples greater than 1200 °F</p> <p style="text-align: center;"><u>OR</u></p> <p>Containment High Range Radiation Monitor</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>RM-RMS-165, -166 or RM-RMS-265, -266 GREATER THAN 1.88x10² R/hr</p> </div> <p>b) Loss of RCS integrity as indicated by any of the following:</p> <ul style="list-style-type: none"> • RCS pressure greater than 2735 psig <p style="text-align: center;"><u>OR</u></p> <p>Loss of Reactor Coolant in progress</p> <p>c) Loss of containment integrity as indicated by any of the following:</p> <ul style="list-style-type: none"> • Containment pressure greater than 60 psia and not decreasing <p style="text-align: center;"><u>OR</u></p> <p>Release path to environment -EXISTS</p>	<p>GENERAL EMERGENCY</p>

NUMBER	ATTACHMENT TITLE	REVISION
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>2. Fuel failure with steam generator tube rupture</p> <p>ALL MODES</p>	<p>Any two of a), b) or c) exist and the third is imminent:</p> <p>a) Fuel clad integrity failure as indicated by any of the following:</p> <ul style="list-style-type: none"> • RCS specific activity greater than 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>5 or more core exit thermocouples GREATER THAN 1200 °F</p> <p style="text-align: center;"><u>OR</u></p> <p>High Range Letdown radiation monitor</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;"> <p>1-CH-RI-128 or 2-CH-RI-228 GREATER THAN 5.9×10^4 mR/hr</p> </div> <p>b) Steam Generator tube rupture as indicated by both of the following:</p> <ul style="list-style-type: none"> • SI coincidence - SATISFIED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Steam Generator tube rupture - IN PROGRESS <p>c) Loss of secondary integrity associated with ruptured steam generator pathway as indicated by any of the following:</p> <ul style="list-style-type: none"> • Steam Generator PORV - OPEN <p style="text-align: center;"><u>OR</u></p> <p>Main Steam Code Safety Valve - OPEN</p> <p style="text-align: center;"><u>OR</u></p> <p>Loss of secondary coolant outside containment - IN PROGRESS</p>	<p>GENERAL EMERGENCY</p>

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
3. RCS leak rate limit - EXCEEDED MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Loss of Reactor Coolant in progress and inventory balance indicates leakage GREATER THAN 300 gpm <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Pressurizer level cannot be maintained with two (2) or more Charging/SI pumps in operation 	SITE AREA EMERGENCY
4. Gross primary to secondary leakage with loss of offsite power MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Steam Generator Tube Rupture - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Safety Injection - REQUIRED <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Vent Vent A MGPI Monitor <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> RM-VG-179 GREATER THAN $1.25 \times 10^8 \mu\text{Ci/sec}$ </div> <p style="text-align: center;"><u>OR</u></p> <p>Steam Generator Blowdown monitor on affected pathway</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> RM-SS-122, -222 RM-SS-123, -223 RM-SS-124, -224 GREATER THAN 1×10^6 cpm </div> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • A subsequent loss of offsite power indicated by zero volts on voltmeters for 4160V buses D, E, & F 	SITE AREA EMERGENCY

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
5. RCS leak rate limit - EXCEEDED MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Pressurizer level cannot be maintained greater than 20% with one (1) Charging/SI pump in operation <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS inventory balance indicates leakage - greater than 50 gpm 	ALERT
6. Gross primary to secondary leakage MODES 1, 2, 3, & 4	Steam Generator Tube Rupture - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> Safety Injection - REQUIRED	ALERT
7. Excessive primary to secondary leakage with loss of offsite power MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Intentional reduction in power, load or temperature IAW T.S. 3.4.13 primary-to-secondary leakage LCO Action Statement <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Vent Vent A MGPI Monitor <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-179 GREATER THAN $1.73 \times 10^6 \mu\text{Ci/sec}$ </div> <p style="text-align: center;"><u>OR</u></p> Steam Generator Blowdown monitor on affected pathway <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-SS-122, -222 RM-SS-123, -223 RM-SS-124, -224 GREATER THAN 1×10^5 cpm </div> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • A subsequent loss of offsite power indicated by zero volts on voltmeters for 4160V buses D, E, & F 	ALERT

NUMBER	ATTACHMENT TITLE	REVISION
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ATTACHMENT 1	(TAB B) REACTOR COOLANT SYSTEM EVENT	PAGE 12 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
8. RCS operational leakage requiring plant shutdown IAW T.S. 3.4.13 MODES 1, 2, 3, & 4	Intentional reduction in power load or temperature IAW T.S. 3.4.13 leakage limit action statement - HAS COMMENCED	NOTIFICATION OF UNUSUAL EVENT

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>			
1. Probable large radioactivity release initiated by LOCA with ECCS failure leading to core degradation ALL MODES	<ul style="list-style-type: none"> Loss of reactor coolant in progress <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> RCS specific activity - greater than 300 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> Containment High Range Radiation Monitor <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> RM-RMS-165, -166 or RM-RMS-265, -266 GREATER THAN 1.88×10^2 R/hr </div> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> High or low head ECCS flow not being delivered to the core (if expected by plant conditions) 	GENERAL EMERGENCY			
<p>CAUTION: EAL A.1 is duplicated below for cross-reference/comparison to EAL C.2:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%; vertical-align: top;"> A.1. Loss of function needed for unit HSD condition MODES 1, 2, 3 & 4 </td> <td style="width: 45%; vertical-align: top;"> <ul style="list-style-type: none"> Total loss of the Charging/SI System <p style="text-align: center;"><u>OR</u></p> Total loss of the Main Feedwater and Auxiliary Feedwater systems </td> <td style="width: 20%; vertical-align: top; text-align: center;"> SITE AREA EMERGENCY </td> </tr> </table>			A.1. Loss of function needed for unit HSD condition MODES 1, 2, 3 & 4	<ul style="list-style-type: none"> Total loss of the Charging/SI System <p style="text-align: center;"><u>OR</u></p> Total loss of the Main Feedwater and Auxiliary Feedwater systems	SITE AREA EMERGENCY
A.1. Loss of function needed for unit HSD condition MODES 1, 2, 3 & 4	<ul style="list-style-type: none"> Total loss of the Charging/SI System <p style="text-align: center;"><u>OR</u></p> Total loss of the Main Feedwater and Auxiliary Feedwater systems	SITE AREA EMERGENCY			
2. Probable large radioactivity release initiated by loss of heat sink leading to core degradation MODES 1, 2, 3 & 4	Loss of Main Feedwater System, Condensate System and Auxiliary Feedwater System	GENERAL EMERGENCY			

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>3. Probable large radioactivity release initiated by failure of protection system to bring Rx subcritical and causing core degradation</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> • Rx nuclear power after a trip - greater than 5% <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • RCS pressure greater than or equal to 2485 psig <p style="text-align: center;"><u>OR</u></p> <p>Containment pressure and temperature rapidly increasing</p>	<p>GENERAL EMERGENCY</p>
<p>4. Probable large radioactivity release initiated by loss of AC power and all feedwater</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> • Loss of all onsite and offsite AC power <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Turbine Driven Auxiliary Feedwater Pump not operable <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Restoration of either of the above not likely within 2 hours 	<p>GENERAL EMERGENCY</p>

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ATTACHMENT 1	FUEL FAILURE OR FUEL HANDLING ACCIDENT	PAGE 15 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>5. Probable large radioactivity release initiated by LOCA with loss of ECCS and containment cooling</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> • Loss of reactor coolant in progress <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • High or low head ECCS flow not being delivered to the core (if expected by plant conditions) <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Containment RS sump temperature greater than 190°F and NOT decreasing <p style="text-align: center;"><u>OR</u></p> <p>All Quench Spray and Recirculation Spray systems - NOT OPERABLE</p>	<p>GENERAL EMERGENCY</p>

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB C)	37
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>6. Core damage with possible loss of coolable geometry</p> <p>MODES 1, 2, 3, & 4</p>	<p>a) Fuel clad failure as indicated by any of the following:</p> <ul style="list-style-type: none"> • RCS Specific activity greater than 60 $\mu\text{Ci}/\text{gram}$ dose equivalent I-131 <p style="text-align: center;"><u>OR</u></p> <p>High Range Letdown radiation monitor</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>1-CH-RI-128 or 2-CH-RI-228 GREATER THAN 1.2×10^4 mR/hr</p> </div> <p style="text-align: center;"><u>AND</u></p> <p>b) Loss of cooling as indicated by any of the following:</p> <ul style="list-style-type: none"> • 5 confirmed core exit thermocouples greater than 1200 °F <p style="text-align: center;"><u>OR</u></p> <p>Core delta T - zero</p> <p style="text-align: center;"><u>OR</u></p> <p>Core delta T - rapidly diverging</p>	<p>SITE AREA EMERGENCY</p>

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>7. Major fuel damage accident with radioactivity release to containment or fuel buildings</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> • Water level in Rx vessel during refueling below the top of core <p style="text-align: center;"><u>OR</u></p> <p>Water level in spent fuel pool below top of spent fuel</p> <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Verified damage to irradiated fuel resulting in readings on Vent Vent "B" MGPI monitor <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>RM-VG-180 GREATER THAN 2.69 x 10⁸ µCi/sec</p> </div>	<p>SITE AREA EMERGENCY</p>
<p>8. Severe Fuel Clad Damage</p> <p>MODES 1, 2, 3, & 4</p>	<ul style="list-style-type: none"> • High Range Letdown radiation monitor <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>1-CH-RI-128 or 2-CH-RI-228 Increases to GREATER THAN Hi Hi Alarm setpoint (representing 1% fuel failure) within 30 minutes and remains for at least 15 minutes</p> </div> <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • RCS specific activity - greater than 300 µCi/gram dose equivalent I-131 	<p>ALERT</p>

NUMBER	ATTACHMENT TITLE	REVISION
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ATTACHMENT 1	(TAB C) FUEL FAILURE OR FUEL HANDLING ACCIDENT	PAGE 18 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
9. Fuel damage accident with release of radioactivity to containment or fuel buildings ALL MODES	<ul style="list-style-type: none"> • Verified accident involving damage to irradiated fuel <li style="text-align: center;"><u>AND</u> • Health Physics confirms fission product release from fuel <li style="text-align: center;"><u>OR</u> Vent Vent "B" MGPI monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;"> RM-VG-180 GREATER THAN $1.99 \times 10^6 \mu\text{Ci/sec}$ </div>	ALERT
10. Potential for fuel damage to occur during refueling MODE 6	Continuing uncontrolled decrease of water level in Reactor Refueling Cavity or Spent Fuel Pool	ALERT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB C)	REVISION 37
ATTACHMENT 1	FUEL FAILURE OR FUEL HANDLING ACCIDENT	PAGE 19 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
11. Fuel clad damage indication MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> Intentional reduction in power, load or temperature IAW reactor coolant activity T.S. Action Statement - HAS COMMENCED <p style="text-align: center;"><u>OR</u></p> High Range Letdown radiation monitor <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> 1-CH-RI-128 or 2-CH-RI-228 Increases to GREATER THAN Hi Alarm setpoint (representing 0.1% fuel failure) within 30 minutes and remains for for at least 15 minutes </div>	NOTIFICATION OF UNUSUAL EVENT
12. Independent Spent Fuel Storage Installation (ISFSI) event ALL MODES	<ul style="list-style-type: none"> Verified Sealed Surface Storage Cask (SSSC) seal leakage <p style="text-align: center;"><u>OR</u></p> Sealed Surface Storage Cask (SSSC) dropped or mishandled	NOTIFICATION OF UNUSUAL EVENT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB D) CONTAINMENT EVENT	REVISION 37
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Extremely high containment radiation, pressure and temperature MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> Containment High Range radiation monitor <div data-bbox="766 457 1107 592" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> RM-RMS-165, -166 or RM-RMS-265, -266 GREATER THAN 3.76×10^2 R/hr </div> <p style="text-align: center;"><u>AND</u></p> Containment pressure greater than 45 psia and not decreasing <p style="text-align: center;"><u>OR</u></p> Containment temperature greater than 280°F 	GENERAL EMERGENCY
2. High-high containment radiation, pressure, and temperature MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> Containment High Range radiation monitor <div data-bbox="766 1018 1107 1152" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> RM-RMS-165, -166 or RM-RMS-265, -266 GREATER THAN 1.88×10^2 R/hr </div> <p style="text-align: center;"><u>AND</u></p> Containment pressure - greater than 27.75 psia and not decreasing <p style="text-align: center;"><u>OR</u></p> Containment temperature - greater than 200 °F 	SITE AREA EMERGENCY

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
3. High Containment radiation, pressure and temperature MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Containment High Range radiation monitor <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> RM-RMS-165, -166 or RM-RMS-265, -266 GREATER THAN 81.5 R/hr </div> <p style="text-align: center;"><u>AND</u></p> • Containment pressure - greater than 17 psia <p style="text-align: center;"><u>OR</u></p> Containment temperature - greater than 150°F 	ALERT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB 'E)	REVISION 37
ATTACHMENT 1	RADIOACTIVITY EVENT	PAGE 22 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Release imminent or in progress and site boundary doses projected to exceed 1.0 Rem TEDE or 5.0 Rem Thyroid CDE ALL MODES	<ul style="list-style-type: none"> 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 0.1 Rem TEDE or 0.5 Rem Thyroid CDE ALL MODES	<ul style="list-style-type: none"> HP assessment indicates actual or projected dose at or beyond Site Boundary exceeds 0.1 Rem TEDE or 0.5 Rem Thyroid CDE 	SITE AREA EMERGENCY

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ATTACHMENT	RADIOACTIVITY EVENT	PAGE
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>3. Effluent release greater than 10 times ODCM allowable limit</p> <p>ALL MODES</p>	<p>a) Any of the following monitors indicate valid readings above the specified values for greater than 15 minutes</p> <ul style="list-style-type: none"> • Clarifier Effluent <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-LW-111 GREATER THAN 4.8×10^5 cpm </div> • Discharge Canal <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-SW-130 or -230 GREATER THAN 5×10^4 cpm </div> • Vent Vent A MGPI <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-179 GREATER THAN 1.73×10^6 μCi/sec </div> • Vent Vent B MGPI <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-180 GREATER THAN 1.99×10^6 μCi/sec </div> • Process Vent MGPI <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-GW-178 GREATER THAN 1.35×10^7 μCi/sec </div> <p style="text-align: center;"><u>OR</u></p> <p>b) HP assessment (sample results or dose projections) indicate greater than 10 times ODCM allowable limit</p>	<p>ALERT</p>

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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>4. High radiation or airborne contamination levels indicate a severe degradation in control of radioactive material</p> <p>ALL MODES</p>	<p>Valid readings on any of the following monitors have increased by a factor of 1000 and remain for at least 15 minutes:</p> <ul style="list-style-type: none"> • Ventilation Vent Multi-sample gaseous or particulate monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RM-VG-106 or -105</div> • Control Room Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-157</div> • Aux. Bldg. Control Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-154</div> • Decon. Bldg. Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-151</div> • Fuel Pool Bridge Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-153</div> • New fuel storage Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-152</div> • Laboratory Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-158</div> • Sample Room Area <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">RMS-156</div> 	<p>ALERT</p>

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB E) RADIOACTIVITY EVENT	REVISION 37
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<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
5. Effluent release greater than ODCM allowable limit ALL MODES	a) Any of the following monitors indicate valid readings above the specified value for more than 1 hour: <ul style="list-style-type: none"> • Clarifier Effluent <div data-bbox="734 590 1183 674" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-LW-111 GREATER THAN 4.8×10^4 cpm </div> • Discharge Canal <div data-bbox="734 722 1183 806" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-SW-130 or -230 GREATER THAN 5×10^3 cpm </div> • Vent Vent A MGPI <div data-bbox="734 854 1183 938" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-179 GREATER THAN 1.73×10^5 μCi/sec </div> • Vent Vent B MGPI <div data-bbox="734 987 1183 1071" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-180 GREATER THAN 1.99×10^5 μCi/sec </div> • Process Vent MGPI <div data-bbox="734 1119 1183 1203" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-GW-178 GREATER THAN 1.35×10^6 μCi/sec </div> <p style="text-align: center;"><u>OR</u></p> b) HP assessment (sample results or dose projections) indicates greater than ODCM allowable limit	NOTIFICATION OF UNUSUAL EVENT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB G)	37
ATTACHMENT 1	LOSS OF SECONDARY COOLANT	PAGE 26 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Major secondary line break with significant primary to secondary leakage and fuel damage indicated MODES 1, 2, 3, & 4	Conditions a) and b) exist with c): a) Uncontrolled loss of secondary coolant - IN PROGRESS <u>AND</u> b) RCS specific activity exceeds limits of T.S. Figure 3.4.16-1 <u>OR</u> High Range Letdown radiation monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;"> 1-CH-RI-128 or 2-CH-RI-228 GREATER THAN Hi Alarm setpoint </div> <u>AND</u> c) Vent Vent A MGPI Monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;"> RM-VG-179 GREATER THAN $6.21 \times 10^7 \mu\text{Ci/sec}$ </div> <u>OR</u> Affected pathway Steam Generator Blowdown monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;"> RM-SS-122, -123, -124, -222, -223, -224 GREATER THAN 1×10^6 cpm </div> <u>OR</u> Affected pathway Main Steam Line High Range monitor <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;"> RM-MS-170, -171, -172, -270, -271, -272 GREATER THAN 12.2 mR/hr </div>	SITE AREA EMERGENCY

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB G) LOSS OF SECONDARY COOLANT	REVISION 37
ATTACHMENT 1		PAGE 27 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
2. Major secondary line break with significant primary to secondary leakage MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> Uncontrolled loss of secondary coolant - IN PROGRESS <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> Vent Vent A MGPI Monitor <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-VG-179 GREATER THAN 1.76×10^6 μCi/sec </div> <p style="text-align: center;"><u>OR</u></p> Steam Generator Blowdown monitor on affected pathway <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-SS-122, -123, -124 RM-SS-222, -223, -224 GREATER THAN 1×10^5 cpm </div> <p style="text-align: center;"><u>OR</u></p> Main Steam Line High Range monitor on affected pathway <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> RM-MS-170, -171, -172 RM-MS-270, -271, -272 GREATER THAN 0.14 mR/hr </div>	ALERT
3. Major secondary line break MODES 1, 2, 3, & 4	Uncontrolled loss of secondary coolant - IN PROGRESS	NOTIFICATION OF UNUSUAL EVENT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB H) ELECTRICAL FAILURE	REVISION 37
ATTACHMENT 1		PAGE 28 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Loss of offsite and onsite AC power for more than 15 minutes ALL MODES	The following conditions exist for greater than 15 minutes: <ul style="list-style-type: none"> • Ammeters for 4160V Reserve Station Service Buses D, E, & F all indicate - zero (0) amps <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Ammeters for 4160V Station Service Buses A, B, & C all indicate - zero (0) amps <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Ammeters for 4160V Emergency Buses H & J both indicate - zero (0) amps 	SITE AREA EMERGENCY
2. Loss of all onsite DC power for greater than 15 minutes ALL MODES	The following conditions exist for greater than 15 minutes: <ul style="list-style-type: none"> • All station battery voltmeters indicate zero (0) volts <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • No light indication available to Reserve Station Service breakers 15D1, 15E1 and 15F1 	SITE AREA EMERGENCY

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB H)	37
ATTACHMENT	ELECTRICAL FAILURE	PAGE
1		29 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
<p>CAUTION: EAL A.1 is duplicated below for cross-reference/comparison to EAL H.3:</p>		
<p>A.1. Loss of function needed for unit HSD condition</p> <p>MODES 1, 2, 3 & 4</p>	<ul style="list-style-type: none"> Total loss of the Charging/SI System <p><u>OR</u></p> <ul style="list-style-type: none"> Total loss of the Main Feedwater and Auxiliary Feedwater Systems 	<p>SITE AREA EMERGENCY</p>
<p>3. Loss of all offsite and onsite AC power</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> Ammeters for 4160V Reserve Station Service Buses D, E, & F all indicate - zero (0) amps <p><u>AND</u></p> <ul style="list-style-type: none"> Ammeters for 4160V Station Service Buses A, B, & C all indicate - zero (0) amps <p><u>AND</u></p> <ul style="list-style-type: none"> Ammeters for 4160V Emergency Buses H and J both indicate - zero (0) amps 	<p>ALERT</p>
<p>4. Loss of all onsite DC power</p> <p>ALL MODES</p>	<ul style="list-style-type: none"> All station battery voltmeters indicate - zero (0) volts <p><u>AND</u></p> <ul style="list-style-type: none"> No light indication available to Reserve Station Service Breakers 15D1, 15E1 and 15F1 	<p>ALERT</p>

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE	37
ATTACHMENT	(TAB H)	PAGE
1	ELECTRICAL FAILURE	30 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
5. Loss of offsite power or onsite AC power capability	<ul style="list-style-type: none"> Unit main generator and both emergency diesel generators out of service 	NOTIFICATION OF UNUSUAL EVENT
ALL MODES	<u>OR</u>	
	Loss of all 34.5 KV reserve station service buses	

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB I)	37
ATTACHMENT	FIRE	PAGE
1		31 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Fire resulting in degradation of safety systems MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Fire which causes major degradation of a safety system function required for protection of the public <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Affected systems are caused to be <u>NOT</u> operable as defined by Tech. Specs. 	SITE AREA EMERGENCY
2. Fire potentially affecting station safety systems MODES 1, 2, 3, & 4	Fire which has potential for causing a safety system not to be operable as defined by Tech. Specs.	ALERT
3. Fire lasting greater than 10 minutes in Protected Area or Service Water Pump/Valve House ALL MODES	Fire within the Protected Area or Service Water Pump/Valve House which is not under control within 10 minutes after Fire Brigade - DISPATCHED	NOTIFICATION OF UNUSUAL EVENT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE	37
ATTACHMENT	(TAB J)	PAGE
1	SECURITY EVENT	32 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Loss of physical Station control ALL MODES	<ul style="list-style-type: none"> • Shift Supervisor has been informed that the security force has been neutralized by attack, resulting in loss of physical control of station <p style="text-align: center;"><u>OR</u></p> 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 MODES	Security Shift Supervisor has notified the Operations Shift Supervisor of imminent intrusion into a Vital Area	SITE AREA EMERGENCY
3. Ongoing Security compromise ALL MODES	Security Shift Supervisor has notified the Operations Shift Supervisor of a confirmed unneutralized intrusion into the Protected Area or ISFSI	ALERT
4. Security threat, unauthorized attempted entry, or attempted sabotage ALL MODES	Any of the following when determined to have potential for degrading the level of safety of the plant or ISFSI <ul style="list-style-type: none"> • 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

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB K)	37
ATTACHMENT	HAZARD TO STATION OPERATION	PAGE
1		33 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Aircraft damage to vital plant systems MODES 1, 2, 3, & 4	Aircraft crash which affects vital structures by impact or fire	SITE AREA EMERGENCY
2. Severe explosive damage MODES 1, 2, 3, & 4	Explosion which results in severe degradation of any of the following systems required for safe shutdown: <ul style="list-style-type: none"> • CVCS System <li style="text-align: center;"><u>OR</u> ECCS System <li style="text-align: center;"><u>OR</u> Main/Auxiliary Feedwater System 	SITE AREA EMERGENCY
3. Entry of toxic or flammable gases into plant vital areas other than the Control Room MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Uncontrolled release of toxic or flammable agents greater than life threatening or explosive limits in Vital Areas <li style="text-align: center;"><u>AND</u> • Evacuation of Vital Area other than Control Room - REQUIRED <li style="text-align: center;"><u>OR</u> Significant degradation of plant safety systems resulting in loss of a safety system function required for protection of the public 	SITE AREA EMERGENCY

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB K)	37
ATTACHMENT	HAZARD TO STATION OPERATION	PAGE
1		34 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
4. Severe missile damage to safety systems MODES 1, 2, 3, & 4	Missile impact causing severe degradation of safety systems required for unit shutdown	SITE AREA EMERGENCY
5. Aircraft crash on the facility ALL MODES	Aircraft crash within the Protected Area or Switchyard	ALERT
6. Explosion damage to facility ALL MODES	Unplanned explosion resulting in damage to plant structure or equipment that affects plant operations	ALERT
7. Entry of toxic or flammable gases or liquids into plant facility ALL MODES	Notification of uncontrolled release of toxic or flammable agent which causes: <ul style="list-style-type: none"> • Evacuation of personnel from plant areas <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Safety related equipment is rendered inoperable 	ALERT
8. Turbine failure or missile impact MODES 1 & 2	Failure of turbine/generator rotating equipment resulting in casing penetration	ALERT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB K)	37
ATTACHMENT	HAZARD TO STATION OPERATION	PAGE
1		35 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
9. Missile damage to safety related equipment or structures MODES 1, 2, 3, & 4	Notification of missile impact causing damage to safety related equipment or structures	ALERT
10. Aircraft crash or unusual aircraft activity ALL MODES	<ul style="list-style-type: none"> Confirmed notification of aircraft crash within the site boundary <p style="text-align: center;"><u>OR</u></p> Unusual aircraft activity in the vicinity of the site as determined by the Operations Shift Supervisor or the Security Shift Supervisor	NOTIFICATION OF UNUSUAL EVENT
11. Train derailment within Protected Area ALL MODES	Confirmed report of train derailment within Protected Area	NOTIFICATION OF UNUSUAL EVENT
12. Explosion within Protected Area ALL MODES	Confirmed report of unplanned explosion within Protected Area	NOTIFICATION OF UNUSUAL EVENT
13. Onsite or nearsite release of toxic or flammable liquids or gases ALL MODES	Notification of unplanned release of toxic or flammable agents which may affect safety of station personnel or equipment	NOTIFICATION OF UNUSUAL EVENT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB K)	REVISION 37
ATTACHMENT 1	HAZARD TO STATION OPERATION	PAGE 36 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
14. Turbine rotating component failure with no casing penetration MODES 1 & 2	Failure of turbine/generator rotating equipment resulting in immediate unit shutdown	NOTIFICATION OF UNUSUAL EVENT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB L) NATURAL EVENTS	REVISION 37
ATTACHMENT 1		PAGE 37 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Earthquake greater than or equal to DBE levels MODES 1, 2, 3, & 4	<ul style="list-style-type: none"> • Confirmed earthquake which activates the Event Indicator on the Strong Motion Accelerograph <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Alarms on the Peak Shock Annunciator indicate a horizontal motion of greater than or equal to 0.12 g or a vertical motion of greater than or equal to 0.08g 	SITE AREA EMERGENCY
2. Sustained winds in excess of design levels experienced or projected MODES 1, 2, 3, & 4	Sustained winds 150 mph OR GREATER experienced or projected	SITE AREA EMERGENCY
3. Flood or low water level above design levels MODES 1, 2, 3, & 4	Either condition a) or b) exists a) Flood in the Lake Anna Reservoir with indicated level - greater than 264 feet MSL <p style="text-align: center;"><u>OR</u></p> b) Low water level in the Lake Anna Reservoir with indicated level - less than 244 feet MSL <p style="text-align: center;"><u>AND</u></p> Inability to satisfy action requirements of TR 3.7.4 for North Anna Reservoir	SITE AREA EMERGENCY

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB L)	REVISION 37
ATTACHMENT 1	NATURAL EVENTS	PAGE 38 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
4. Earthquake greater than or equal to OBE levels ALL MODES	<ul style="list-style-type: none"> • Confirmed earthquake which activates Event Indicator on the Strong Motion Accelerograph <p style="text-align: center;"><u>AND</u></p> <ul style="list-style-type: none"> • Alarms on the Peak Shock Annunciator indicate a horizontal motion of greater than or equal to 0.06 g or a vertical motion of greater than or equal to 0.04g 	ALERT
5. Tornado striking facility ALL MODES	Tornado visually detected striking structures within the Protected Area or Switchyard	ALERT
6. Hurricane winds near design basis level experienced or projected ALL MODES	Hurricane winds 120 mph OR GREATER experienced or projected	ALERT
7. Flood or low water level near design levels ALL MODES	<ul style="list-style-type: none"> • Flood in the Lake Anna Reservoir with indicated level - greater than 263 feet MSL <p style="text-align: center;"><u>OR</u></p> <p>Low water level in the Lake Anna Reservoir with indicated level - less than 244 feet MSL</p>	ALERT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE (TAB L) NATURAL EVENTS	37
ATTACHMENT 1		PAGE 39 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
8. Earthquake detected ALL MODES	Confirmed earthquake which activates the Event Indicator on the Strong Motion Accelerograph	NOTIFICATION OF UNUSUAL EVENT
9. Tornado within Protected Area or Switchyard ALL MODES	Tornado visually detected within Protected Area or Switchyard	NOTIFICATION OF UNUSUAL EVENT
10. Hurricane force winds projected onsite within 12 hours ALL MODES	<ul style="list-style-type: none"> Confirmation by Weather Center that hurricane force winds (greater than 73 mph) projected onsite within 12 hours 	NOTIFICATION OF UNUSUAL EVENT
11. 50 year flood or low water level ALL MODES	<ul style="list-style-type: none"> Flood in the Lake Anna Reservoir with indicated level - greater than 254 feet MSL <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> Low water level in the Lake Anna Reservoir with indicated level less than 246 feet MSL 	NOTIFICATION OF UNUSUAL EVENT

NUMBER EPIP-1.01	ATTACHMENT TITLE EMERGENCY ACTION LEVEL TABLE (TAB M)	REVISION 37
ATTACHMENT 1	MISCELLANEOUS ABNORMAL EVENTS	PAGE 40 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
1. Any major internal or external events which singly or in combination cause massive damage to station facilities or may warrant evacuation of the public ALL MODES	Shift Supervisor/Station Emergency Manager judgement	GENERAL EMERGENCY
2. Station conditions which may warrant notification of the public near the site ALL MODES	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 MODES	Shift Supervisor/Station Emergency Manager judgement	ALERT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	EMERGENCY ACTION LEVEL TABLE	37
ATTACHMENT 1	(TAB M) MISCELLANEOUS ABNORMAL EVENTS	PAGE 41 of 41

<u>CONDITION/APPLICABILITY</u>	<u>INDICATION</u>	<u>CLASSIFICATION</u>
4. Station conditions which warrant increased awareness of state and/or local authorities ALL MODES	Shift Supervisor judgement that any of the following exist: <ul style="list-style-type: none"> • Unit shutdown is other than a controlled shutdown <p style="text-align: center;"><u>OR</u></p> Unit is in an uncontrolled condition during operation <p style="text-align: center;"><u>OR</u></p> A condition exists which has the potential for escalation and therefore warrants notification	NOTIFICATION OF UNUSUAL EVENT

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	TURNOVER CHECKLIST	37
ATTACHMENT 2		PAGE 1 of 1

Conduct a turnover between the onshift and relief SEM in accordance with the following checklist. Use placekeeping aid at left of item, "____", to track completion.

- ___ 1. Determine the status of primary responder notification.
- ___ 2. Determine the status of "Report of Emergency to State and Local Governments," EPIP-2.01, Attachment 2. Get completed copies if available.
- ___ 3. Determine status of the "Report of Radiological Conditions to the State," EPIP-2.01, Attachment 3. Get completed copy if available.
- ___ 4. Determine status of Emergency Notification System (ENS) communications and completion status of NRC Event Notification Worksheet (EPIP-2.02 Attachment 1).
- ___ 5. Review classification and initial PAR status.
- ___ 6. Review present plant conditions and status. Get copy of Critical Safety Functions form.
- ___ 7. Review status of station firewatches and re-establish if conditions allow.
- ___ 8. Determine readiness of TSC for activation.
- ___ 9. After all information is obtained, transfer location to TSC. (Consider direct transfer of State & local notifications to LEOF/CEOF.)
- ___ 10. Call the Control Room and assess any changes that may have occurred during transition to the TSC.
- ___ 11. When sufficient personnel are available, the relief SEM is to assume the following responsibilities from the onshift Station Emergency Manager:
 - a. Reclassification.
 - b. Protective Action Recommendations until LEOF activated.
 - c. Notifications (i.e., state, local, & NRC). Upon LEOF activation, transfer notification responsibilities except for the NRC ENS.
 - d. Site evacuation authorization.
 - e. Emergency exposure authorization.
 - f. Command/control of onsite response.
- ___ 12. Formally relieve the Interim SEM and assume control in the TSC. Announce name and facility activation status to facility.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-1.01	CONSIDERATIONS FOR OPERATIONS RESPONSE UNDER ABNORMAL CONDITIONS	37
ATTACHMENT 3		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 deferring 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
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE (With No Attachments)	REVISION 13
		PAGE 1 of 13

PURPOSE

To assist Radiological Assessment Director in establishing the radiation protection program during an emergency.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated To A Controlled Source
As Required to Perform Work

ENTRY CONDITIONS

Any one of the following:

1. ALERT or higher emergency classification has been declared.
2. Activation by EPIP-4.01, RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE.
3. As deemed necessary by the Radiological Assessment Director.

Approvals on File

Effective Date 12/18/2002

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 2 of 13

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: A sequence of events (e.g., data transmission, team dispatch) should be recorded as accurately as time allows. Event times and your initials should be included.

___ 1 INITIATE PROCEDURE:

- By: _____
- Date: _____
- Time: _____

___ 2 ESTABLISH RADIATION PROTECTION SUPERVISOR OFFICE:

a) Evaluate HP area radiation levels:

- 1) Do surveys and sampling
- 2) Use frisker, personnel contamination monitors and Count Room analysis equipment to check for abnormal indications

b) Verify HP area - HABITABLE:

b) IF HP area NOT habitable, THEN do the following:

- 1) Establish RPS office in a habitable area (e.g., OSC, Emergency Switchgear Room).
- 2) Notify Exposure Control of new work area.
- 3) GO TO Step 2.d.

c) Establish RPS Office in HP Shift Supervisor area

d) Establish continuous monitoring (e.g., ratemeter, DAD)

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 3 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 3	<p>ESTABLISH COMMUNICATIONS WITH TSC:</p> <p>a) Establish telephonic communication (e.g., RAD, Dose Assessment)</p> <p>b) Establish radio communications:</p> <p>1) Set radio call group to "EPA"</p> <p>2) Verify capability to contact TSC using radio</p>	<p>2) Notify RAD of radio inoperability.</p>
<p><u>NOTE:</u> The Emergency Plan has an augmentation goal of 14 HP personnel for Alert or higher classification.</p>		
_____ 4	<p>NOTIFY RAD OF NUMBER OF HP PERSONNEL AVAILABLE</p>	
_____ 5	<p>ASK RAD FOR BRIEFING:</p> <ul style="list-style-type: none"> • Emergency Classification • Plant Status • Assistance required 	

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 4 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	<p>ESTABLISH EXPOSURE CONTROL:</p> <ul style="list-style-type: none"> a) Ensure an individual is available to staff the Exposure Control station b) Verify Exposure Control area - HABITABLE c) Have Exposure Control do the following: <ul style="list-style-type: none"> 1) Ensure a supply of TLDs is available for issue 2) Maintain exposure records 3) Assign dosimetry in accordance with normal HP procedures 	b) Evaluate relocation to OSC.

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 5 of 13



- NOTE:**
- The following step lists response actions coordinated by the RPS. These actions are not listed in order of priority.
 - A minimum of 2 (two) Offsite Monitoring Teams must be dispatched (i.e., sent into the field) upon a Site Area Emergency or higher emergency class.

7 REVIEW HP RESPONSE ACTIONS AND INITIATE RESPONSES ON A PRIORITY BASIS:

<u>IF</u> HP response action(s) needed,	<u>THEN</u> do the following:
Inplant Monitoring	GO TO Step 8.
Onsite Monitoring	GO TO Step 9.
Offsite Monitoring	GO TO Step 10.
Control Room/TSC/OSC/LEOF Monitoring	GO TO Step 11.
Personnel injury/contamination	GO TO Step 12.
Evacuation Monitoring	GO TO Step 13.
Post Accident Sample Monitoring	GO TO Step 14.
Access Control Limits - EXCEEDED: • Airborne contamination exceeds 0.30 DAC • Contamination \geq 100 dpm per 100 cm ² • Survey indicates \geq 1000 mR/hr	Establish access control(s): • HP notification prior to entry. • Use of RWPs. • Roping/posting affected areas.
Sample analysis results - AVAILABLE	Give results to RAD.
HP area habitability problem - IDENTIFIED	RETURN TO Step 2.
Relief shift or additional staff - NEEDED	GO TO Step 15.
Turnover duties to relief	GO TO Step 16.
Emergency - TERMINATED	GO TO Step 17.

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 6 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
8	<p>INITIATE INPLANT MONITORING:</p> <ul style="list-style-type: none"> a) Ask RAD for the following: <ul style="list-style-type: none"> • Required monitoring locations (consider ERFs, Security and Chemistry) • Type of surveys required b) Evaluate possible radiological hazards in survey area(s) c) Assign Inplant Monitoring Team Leader and Member (only one must be an HP Technician) d) Initiate EPIP-4.14, INPLANT MONITORING e) Notify Inplant Monitoring Team Leader of the location and surveys required f) Ensure protective gear and monitoring equipment is provided, as necessary: <ul style="list-style-type: none"> • Respirators • Protective Clothing • Dosimetry • Monitoring Equipment • Air Sampling Equipment g) Identify routes of entry that may reduce exposure h) Assign portable radios and Radio Call Group (Radio use restricted in Radio Frequency Interference (RFI) areas. Gai-Tronics may also be used.) i) Send out team(s) j) Notify RAD of survey information, when received k) RETURN TO Step 7 	

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 7 of 13

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Onsite monitoring teams should be dispatched upon an Alert classification, or as specified by Radiological Assessment Director.

9 INITIATE ONSITE MONITORING:

- a) Ask RAD for the following:
 - Monitor location
 - Surveys required
 - Radiological Hazards
- b) Coordinate transportation (if required):
 - Health Physics truck
 - Site Vice President's Vehicle
 - Station Manager's Vehicle
- c) Assign On-site Monitoring Team Leader and Member (only one must be an HP Technician)
- d) Initiate EPIP-4.15, ONSITE MONITORING
- e) Notify Onsite Team leader of location and surveys required
- f) Ensure protective gear and monitoring equipment is provided, as necessary:
 - Respirators
 - Protective Clothing
 - Dosimetry
 - Monitoring Equipment
 - Air Sampling Equipment
- g) Assign Radio Call Group
- h) Send out monitoring team(s)
- i) Establish radio contact with monitoring team(s)
- j) Notify RAD of survey information, when received
- k) RETURN TO Step 7

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 8 of 13

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Two Offsite Monitoring Kits, one Onsite Monitoring Kit and one Remote Assembly Area Monitoring Kit are located in the Exposure Control Facility.

10 INITIATE OFFSITE MONITORING:

- a) Ask RAD for the following:
 - 1) Offsite monitoring locations
 - 2) Number of offsite teams
 - 3) Assessment of offsite radiological hazards
 - 4) Assessment of need to issue radioprotective drugs to monitoring teams
- b) Assign Offsite Monitoring Team Leader and Member (only 1 need be an HP Technician)
- c) Initiate EPIP-4.16, OFFSITE MONITORING
- d) Assist in obtaining vehicle:
 - Health Physics truck
 - Site Vice President's Vehicle
 - Station Manager's Vehicle
- e) Assign emergency kit/equipment:
 - Battery powered air sampler
 - RM-14 with H.P. 210 probe
 - Record number of Emergency Kits issued
- f) Give team briefing (include initial reporting location)
- g) Review protective gear required:
 - Respirator and/or radioprotective drugs
 - Protective clothing
 - Dosimetry
- h) Assign Radio Call Group
- i) Send out Monitoring Team(s)
- j) RETURN TO Step 7

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 9 of 13

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Monitoring of emergency response facilities (ERFs) should begin within 60 minutes following an ALERT classification.

11 INITIATE CONTROL ROOM/TSC/OSC/LEOF MONITORING:

- a) Evaluate the following when determining monitoring frequency:
 - Spread of contamination from service buildings
 - Status of effluent release
 - Increase in emergency classification
 - Change in plume direction
- b) Assign the following EPIP(s):
 - EPIP-4.17, MONITORING OF EMERGENCY RESPONSE FACILITIES
 - EPIP-4.18, MONITORING OF LEOF
 - EPIP-4.28, TSC/LEOF RADIATION MONITORING SYSTEM
- c) Notify RAD about ERF habitability and survey results
- d) RETURN TO Step 7

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 10 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 12	<p>CHECK PERSONNEL - CONTAMINATED:</p> <ul style="list-style-type: none"> a) Check personnel - INJURED b) Initiate normal station HP procedure for responding to contaminated injured personnel c) Assign EPIP-4.06, PERSONNEL MONITORING AND DECONTAMINATION d) Update RAD on status e) RETURN TO Step 7 <p><u>NOTE:</u> EPIP-4.21, EVACUATION AND REMOTE ASSEMBLY AREA MONITORING, contains instructions for surveying parking areas to determine contamination levels prior to evacuation if a radiological release occurred and time is available.</p>	<p>RETURN TO Step 7.</p> <ul style="list-style-type: none"> a) GO TO Step 12.c.
_____ 13	<p>INITIATE EVACUATION MONITORING:</p> <ul style="list-style-type: none"> a) Initiate EPIP-4.21, EVACUATION AND REMOTE ASSEMBLY AREA MONITORING b) Notify RAD when team is dispatched c) RETURN TO Step 7 	

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 11 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
14	<p>INITIATE POST ACCIDENT SAMPLING:</p> <ul style="list-style-type: none"> a) Verify post accident containment and/or reactor coolant sample - REQUIRED (verify with RAD) b) Assign in-plant survey to determine dose rate at sample station c) Notify RAD of survey results d) Initiate RWP (if required) e) Initiate the following (as necessary): <ul style="list-style-type: none"> • EPIP-4.22, POST ACCIDENT SAMPLING OF CONTAINMENT AIR • EPIP-4.23, POST ACCIDENT SAMPLING OF REACTOR COOLANT • EPIP-4.24, GASEOUS EFFLUENT SAMPLING DURING AN EMERGENCY • EPIP-4.25, LIQUID EFFLUENT SAMPLING DURING AN EMERGENCY f) Ensure HP coverage available during sampling and sample preparation g) RETURN TO Step 7 	

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13
		PAGE 12 of 13

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
15	<p>EVALUATE NEED FOR ADDITIONAL PERSONNEL:</p> <ul style="list-style-type: none"> a) Ask RAD about projected duration of emergency b) Check relief shift and/or additional personnel - NEEDED c) Prepare relief schedule and/or increased staffing schedule d) Give schedule to RAD for approval e) Initiate callout of scheduled personnel (if needed) f) Notify RAD when callout complete g) RETURN TO Step 7 	b) RETURN TO Step 7.
16	<p>CHECK TURNOVER - REQUIRED (due to arrival of a more senior HP representative or relief):</p> <ul style="list-style-type: none"> a) Provide successor briefing on plant conditions and HP actions underway b) Notify RAD of position change c) Stay with relief for approximately 30 minutes d) RETURN TO Step 7 	

NUMBER EPIP-4.02	PROCEDURE TITLE RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE	REVISION 13 <hr/> PAGE 13 of 13
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

_____ 17 TERMINATE EMERGENCY RESPONSE:

- a) Notify HP staff when emergency is terminated
- b) Review recovery actions with RAD
- c) Maintain access control as required
- d) Initiate replacement of procedures and equipment used during the emergency

_____ 18 TERMINATE EPIP-4.02:

- a) Give completed EPIP-4.02, all other applicable EIPs, forms and records to the Radiological Assessment Director
- b) Completed By: _____
- Date: _____
- Time: _____

-END-

VIRGINIA POWER
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING (With 1 Attachment)	REVISION 15
		PAGE 1 of 14

PURPOSE

Provide guidance to offsite monitoring teams for acquiring equipment, tracking effluent releases, performing sampling and transmitting data.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated To A Controlled Source
As Required to Perform Work

ENTRY CONDITIONS

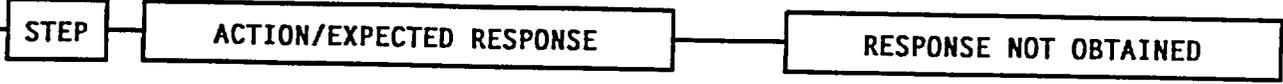
Activation by another EPIP.

Approvals on File

Effective Date

12/18/2002

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 <hr/> PAGE 2 of 14
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___ 1 INITIATE PROCEDURE:

- By: _____
- Date: _____
- Time: _____

NOTE: Offsite Monitoring Teams consist of two individuals. Only one need be an HP Technician.

___ 2 ASSIGN INDIVIDUALS TO TEAM

___ 3 GET BRIEFING FROM RPS:

- Required monitoring location(s)
- Sampling and surveys required
- Anticipated radiation levels
- Protective clothing, dosimetry and/or respirator gear required

- Location to report survey data (TSC, LEOF or CEOF)
- Arrangements for return of samples to station for analysis
- Assignment of radio call group for radio communications
- Meteorological conditions

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 <hr/> PAGE 3 of 14
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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____ 4 OBTAIN TRANSPORTATION:

a) Get vehicle:

- Use HP vehicle (primary method of transportation)
- Use Station Management vehicle
- Ask RPS or RAD for assistance in obtaining alternate vehicle

b) Verify vehicle has at least 1/4 tank of gas

b) IF fuel level less than 1/4 tank, THEN fill gas tank prior to departure.

____ 5 GET EMERGENCY KIT FROM EXPOSURE CONTROL FACILITY

a) Verify following instruments and supplies are retrieved from instrumentation cabinet:

- Battery powered air sampler
- RM-14 with HP-210 probe or similar monitoring device
- E-520 or similar monitoring device
- Package of Silver Zeolite cartridges
- RO-2A or similar monitoring device
- Particulate filters
- Portable radio

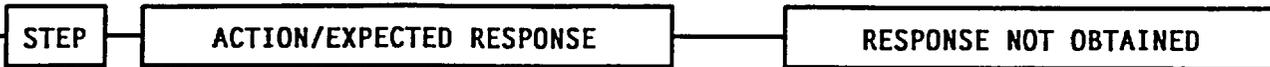
a) IF additional instruments needed, THEN get instruments, e.g., from Instrument Issue Room or Calibration Lab.

b) Do equipment checks:

- Battery check
- Current calibration sticker
- Response check to source (if available)
- DADs (if being used)

c) Record instrument data on Attachment 1

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 PAGE 4 of 14
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_____ 6 RECORD MONITORING TEAM DATA ON ATTACHMENT 1:

- Team Identification Number
- Names

NOTE: Radio contact should be with the TSC until the LEOF (or CEOF) is activated and control of Offsite Teams is transferred.

_____ 7 ESTABLISH RADIO CONTACT:

- a) Establish radio contact with command facility (TSC, LEOF or CEOF) using designated radio call group
- b) Announce:
"Mobile (vehicle number) to (TSC, LEOF or CEOF) base. Our location is _____"
- c) Ask for a telephone number that can be used in case of radio failure

_____ 8 GO TO DESIGNATED MONITORING LOCATION:

- a) Use protective gear as required
- b) Refer to maps in Emergency Kit for directions to monitoring location, as needed

IF NO location designated, THEN go to Security and wait for further instructions (periodically check with command facility).

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 <hr/> PAGE 5 of 14
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NOTE: Dosimetry (SRDs/DADs) should be periodically checked while performing monitoring activities.

____ 9 RECORD DOSIMETER READING IN MONITORING DATA SECTION OF ATTACHMENT 1

NOTE:

- Completed samples should be placed in clean containers (e.g., plastic bags) and labeled with the following information: (1) Team Identification Number, (2) Name, (3) Location, (4) Date, (5) Time, and (6) Volume (if applicable).

- Samples should be kept for later laboratory analysis.

____ 10 DETERMINE SAMPLING REQUIREMENTS:

- Track plume: GO TO Step 11
- Noble gas sample: GO TO Step 12
- Air sample: GO TO Step 13
- Field analysis of air sample: GO TO Step 14
- Soil sample: GO TO Step 15
- Snow or ice sample: GO TO Step 16

IF directed to return to station, THEN GO TO Step 17.

IF no immediate action required, THEN wait in low background area for further instructions.

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15
		PAGE 6 of 14

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

11 DO PLUME MONITORING:

- a) Get portable survey instrument
- b) Open beta window
- c) Go through plume in a crosswind direction (maintain parallel position with station) while doing the following:
 - 1) Hold instrument out of window
 - 2) Observe readings (readings should increase upon approaching plume centerline, and then decrease past centerline)
- d) Determine maximum dose rate (centerline of plume)
- e) Close beta window and observe readings
- f) Record Monitoring Data on Attachment 1
- g) Notify command facility of the following:
 - Dosimetry readings
 - Monitoring location
 - Monitoring readings
- h) IF NO additional actions required, THEN go to low background area and wait for further instructions (periodically check with command facility).
- i) RETURN TO Step 8

- 2) IF no readings observed, THEN do the following:
 - a) Notify command facility of readings.
 - b) GO TO Step 11.e.

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 <hr/> PAGE 7 of 14
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

____ 12 TAKE NOBLE GAS SAMPLE:

- a) Go to plume centerline or to location specified by command facility
- b) Get gas chamber from Emergency Kit
- c) Obtain air sample
- d) Put sample in labeled container
- e) Notify command facility of the following:
 - Dosimetry readings
 - Monitoring location
 - Monitoring readings
- f) Check if additional sampling - REQUIRED

f) IF NO additional actions required, THEN go to low background area and wait for further instructions (periodically check with command facility).

g) RETURN TO Step 8

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15
		PAGE 8 of 14

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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13 GET AIR SAMPLE:

a) Ask command facility to determine sample volume required

b) Get air sampler

c) Insert a particulate filter and Silver Zeolite cartridge in sampler

d) Check if sample required during periods of high moisture (e.g., precipitation, heavy fog):

d) GO TO Step 13.e.

1) Isolate sample from moisture

2) Notify command facility about weather conditions

e) Get sample:

1) Turn sampler - ON

2) Get volume specified by command facility (Get at least a 2.5 ft³ air sample)

3) Go out of plume area while sampler is running (maintain ALARA)

4) Turn sampler OFF after desired volume is collected

5) Leave plume area

f) Put particulate filter and Silver Zeolite cartridge in separate labeled bags

(STEP 13 CONTINUED ON NEXT PAGE)

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15
		PAGE 9 of 14

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

13 GET AIR SAMPLE: (Continued)

g) Record Air Sample Data on Attachment 1:

- Sample ID
- Date
- Time
- Location

- Volume

h) Notify command facility of the following:

- Dosimetry readings
- Monitoring location
- Monitoring readings

i) Check if field analysis of air sample - REQUIRED

i) RETURN TO Step 8.

14 DO FIELD ANALYSIS OF AIR SAMPLE:

a) Go to a low background area

b) Turn RM-14 (frisker) - ON

b) IF frisker NOT operable, THEN ask command facility for instructions.

c) Allow instrument readings to stabilize

d) Determine background CPM

e) Record background CPM on Attachment 1

f) Hold silver zeolite cartridge about 1/4 inch from detector with influent side facing the detector

(STEP 14 CONTINUED ON NEXT PAGE)

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15
		PAGE 10 of 14

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

14 DO FIELD ANALYSIS OF AIR SAMPLE: (Continued)

g) Check gross cpm - ON SCALE

g) Do the following:

- 1) Monitor sample using radiation monitoring device.
- 2) Notify command facility of results.
- 3) Ask if another sample of smaller volume should be taken.
- 4) IF another sample required, THEN RETURN TO Step 13.

IF another sample NOT required, THEN GO TO Step 14.q.

h) Determine gross CPM

i) Record gross CPM on Attachment 1

j) Calculate net CPM:

$$\text{GROSS CPM} - \text{BACKGROUND CPM} = \text{NET CPM}$$

k) Record net CPM on Attachment 1

l) Calculate Conversion Factor (CF) for sample volume collected

$$\frac{3.33 \text{ E-10}}{\# \text{ ft}^3} = \text{CF}$$

m) Calculate activity:

$$\text{NET CPM} \times \text{CF} = \text{Activity, } \mu\text{Ci/ml}$$

n) Record activity on Attachment 1

(STEP 14 CONTINUED ON NEXT PAGE)

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 PAGE 11 of 14
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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14 DO FIELD ANALYSIS OF AIR SAMPLE: (Continued)

o) Calculate Thyroid CDE dose rate:

$$\text{Activity, } \mu\text{Ci/ml} \times 1.57 \text{ E}+9 = \text{Thy CDE, mrem/hr}$$

p) Record Thyroid CDE dose rate on Attachment 1

q) Put sample in labeled bag

r) Ensure air sample parameters are recorded on Attachment 1

s) Notify command facility of the following:

- Dosimetry readings
- Monitoring location
- Monitoring readings

t) Check if additional sampling - REQUIRED

t) IF NO additional actions required, THEN go to low background area and wait for further instructions (periodically check with command facility).

u) RETURN TO Step 8

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15
		PAGE 12 of 14

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

____ 15 GET SOIL SAMPLE:

- a) Mark off an approximate 1 (one) ft² area
- b) Remove the top 1/4 to 1/2 inch layer of soil
- c) Place soil in labeled container
- d) Notify command facility of location
- e) Check if additional sampling - REQUIRED
- f) RETURN TO Step 8

e) IF additional sampling NOT required, THEN go to a low background area and wait for further instructions (periodically check with command facility).

____ 16 GET SNOW OR ICE SAMPLE:

- a) Check snow sample - REQUIRED
- b) Get meteorological data about snowfall during and after release
- c) Record snowfall data:
 - Snowfall during release: ____ inches
 - Snowfall after release: ____ inches
- d) Mark off a 3 ft² area

a) Ask control facility for special instruction (e.g., ice sampling).

(STEP 16 CONTINUED ON NEXT PAGE)

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 <hr/> PAGE 13 of 14
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
16	GET SNOW OR ICE SAMPLE: (Continued)	
	e) Get dose rate reading at 1 meter and surface:	
	• _____mR/hr at 1 meter	
	• _____mR/hr at surface	
	f) Check if snow sample being collected during release	f) <u>IF</u> sampling snowfall after termination of release, <u>THEN</u> remove corresponding layer of non-contaminated snow from the marked off area.
	g) Collect about 2 pounds of snow layer fallen during release	
	h) Put sample in double plastic bags	
	i) Close sample bag	
	j) Maintain bag in upright position to prevent leakage	
	k) Label container	
	l) Notify command facility of location	
	m) Check if additional sampling - REQUIRED	m) <u>IF</u> additional sampling <u>NOT</u> required, <u>THEN</u> go to a low background area and wait for further instructions (periodically check with command facility).
	n) RETURN TO Step 8	

NUMBER EPIP-4.16	PROCEDURE TITLE OFFSITE MONITORING	REVISION 15 PAGE 14 of 14
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

____ 17 PREPARE SAMPLE(S) FOR LABORATORY ANALYSIS:

- a) Keep all samples for analysis
- b) Ensure samples are in clean containers
- c) Ensure samples are properly labeled:
 - Name
 - Team ID
 - Date
 - Time
 - Volume (if applicable)
 - Location
- d) Bring samples to location specified by command facility (e.g., Security)

____ 18 TERMINATE EPIP-4.16:

- a) Do Emergency Kit Inspection PT
- b) Give completed EPIP-4.16, forms and other applicable records to the Radiation Protection Supervisor
- c) Completed by: _____
Date: _____
Time: _____

-END-

NUMBER EPIP-4.16	ATTACHMENT TITLE OFFSITE MONITORING DATA SHEET	REVISION 15
ATTACHMENT 1		PAGE 2 of 2

AIR SAMPLE DATA:

AIR SAMPLE ID.:		
DATE / TIME:		LOCATION:
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft ³):		
ACTIVITY, μ Ci/ml = NET CPM x Conversion Factor (3.33 E-10 + # ft ³)		
THYROID CDE, mrem/hr = Activity, μ Ci/ml x 1.57E+9		

AIR SAMPLE ID.:		
DATE / TIME:		LOCATION:
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft ³):		
ACTIVITY, μ Ci/ml = NET CPM x Conversion Factor (3.33 E-10 + # ft ³)		
THYROID CDE, mrem/hr = Activity, μ Ci/ml x 1.57E+9		

AIR SAMPLE ID.:		
DATE / TIME:		LOCATION:
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft ³):		
ACTIVITY, μ Ci/ml = NET CPM x Conversion Factor (3.33 E-10 + # ft ³)		
THYROID CDE, mrem/hr = Activity, μ Ci/ml x 1.57E+9		

VIRGINIA POWER
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES (With 4 Attachments)	REVISION 16
		PAGE 1 of 9

PURPOSE

To provide for initial and follow-up monitoring of Emergency Response Facilities.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated To A Controlled Source
As Required to Perform Work

ENTRY CONDITIONS

Any of the following:

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

Approvals on File

Effective Date

12/18/2002

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16 <hr/> PAGE 2 of 9
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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____ 1 INITIATE PROCEDURE:

- By: _____

Date: _____

Time: _____

NOTE: The normal facility survey assignment order is Control Room, OSC, TSC and Alternate OSC (if required).

____ 2 GET SURVEY ASSIGNMENT FROM RPS:

NOTE: The contents of emergency kits maintained in the TSC, OSC, and Alternate OSC are listed on Attachment 4. There is no emergency kit in the Control Room. Supplies for Control Room monitoring can be obtained from the normal storage area or other facility kits.

____ 3 ENSURE EXPOSURE CONTROL PROVIDES THE FOLLOWING FOR EACH FACILITY:

- Emergency DADs
- Fresh TLDS

____ 4 GO TO ASSIGNED SURVEY AREA

- Open Emergency Kit for assigned facility (if available or needed)
- Perform instrument operability checks

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16 <hr/> PAGE 3 of 9
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NOTE: Access control is established to prevent contamination of the facility.

_____ 5 CHECK IF FACILITY ACCESS CONTROL - GO TO Step 6.
REQUIRED:

- a) Consult with RPS for determination
- b) Do the following (if access control deemed necessary):
 - 1) Place sign at entrance indicating monitoring required prior to entering facility
 - 2) Put a frisker at entrance(s)
 - 3) Ensure entry points are controlled

_____ 6 ASSIGN EMERGENCY DAD(s)

_____ 7 RECORD EMERGENCY DAD ASSIGNMENTS ON ATTACHMENT 3

_____ 8 CHECK ALL PERSONNEL HAVE A TLD

IF any individual does not have a TLD, THEN do the following:

- a) Assign TLD.
- b) Record TLD assignment on Attachment 3.

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16 <hr/> PAGE 4 of 9
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
9	INITIATE MONITORING: a) Do smear survey b) Take airborne particulate and iodine sample: 1) Load air sampler with silver zeolite and particulate filter 2) Get a 10 ft ³ air sample if time permits (Get at least a 5 ft ³ air sample) c) Do direct radiation survey d) Record survey results on Attachment 1 e) Check if PING 3B Radiation Monitoring System to be started in TSC f) Initiate EPIP-4.28, TSC/LEOF RADIATION MONITORING SYSTEM	e) GO TO Step 10.

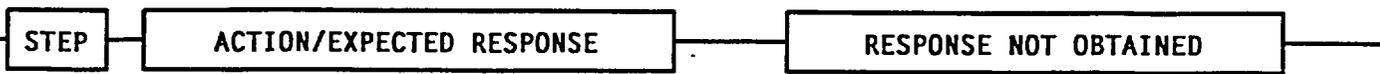
NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16
		PAGE 5 of 9

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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10 DO AIR SAMPLE CARTRIDGE ANALYSIS:

- a) Go to low background area with air sample and frisker
- b) Turn on frisker
- c) Wait for frisker to stabilize
- d) Take background (BKG) radiation reading in cpm
- e) Hold Silver Zeolite cartridge 1/4 inch from detector with influent side facing the detector
- f) Take GROSS cpm reading
- g) Calculate NET cpm:
 - GROSS cpm - BKG cpm = NET cpm
- h) Do % DAC screening:
 - 1) Use Attachment 2
 - 2) Plot NET cpm against sample volume
- i) Put sample in poly bag labeled with the following:
 - Date
 - Time
 - Volume
 - Location
- j) Record results on Attachment 1:
 - Analysis results
 - Date
 - Time
 - Instrument and Serial Number

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16 <hr/> PAGE 6 of 9
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11 DO PARTICULATE FILTER ANALYSIS:

- a) Wait for frisker to stabilize
- b) Take background (BKG) radiation reading in cpm
- c) Hold filter 1/4 inch from detector with influent side facing the detector
- d) Take GROSS cpm reading
- e) Calculate NET cpm:

$$\text{GROSS cpm} - \text{BKG cpm} = \text{NET cpm}$$
- f) Do % DAC screening:
 - 1) Use Attachment 2
 - 2) Plot NET cpm against sample volume
- g) Put sample in poly bag labeled with the following:
 - Date
 - Time
 - Volume
 - Location
- h) Record results on Attachment 1:
 - Analysis results
 - Date
 - Time
 - Instrument and Serial Number

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16
		PAGE 7 of 9



- ____ 12 NOTIFY THE FOLLOWING OF SURVEY RESULTS:
- RPS
 - Senior individual in facility

- ____ 13 VERIFY AREA IS DEEMED HABITABLE BY RPS (OR RAD)
- IF area NOT habitable, THEN do the following:
- a) Update postings at access control points.
 - b) Provide survey coverage for personnel relocation to alternate facilities.

- ____ 14 TAKE RESPONSE ACTIONS ASSOCIATED WITH LISTED CONDITION BASED ON SAMPLE RESULTS (as appropriate):

CONDITION	RESPONSE
Air sample greater than or equal to 0.30 DAC (particulate plus iodine)	Assign respiratory protection (as directed by RPS)
Smear survey greater than 1000 disintegrations per minute (dpm)/100 square centimeters	Secure area by roping off contaminated area and issuing protective clothing
Direct radiation levels greater than or equal to 2 mR/hr	<ul style="list-style-type: none"> • Give a dose rate meter to qualified individual • Ensure all personnel issued both DAD and TLD

- ____ 15 ASK RPS FOR UPDATE OF RADIOLOGICAL CONDITIONS

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16
		PAGE 8 of 9

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
___ 16	CHECK RADIOLOGICAL CONDITIONS - DEGRADED	GO TO Step 18.
___ 17	ASK RPS TO DESIGNATE AREAS NEEDING IMMEDIATE SURVEY AND ACCESS CONTROL	
___ 18	VERIFY ALL AREAS DESIGNATED FOR INITIAL OR FOLLOW-UP SURVEY COMPLETED	RETURN TO Step 4.
___ 19	CHECK - CONTINUED MONITORING REQUIRED	GO TO Step 22.
___ 20	CHECK FOLLOW-UP SURVEY - DUE: <ul style="list-style-type: none"> • Follow-up survey schedule established by RPS _____ <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • Default survey schedule <ul style="list-style-type: none"> • OSC - every hour • TSC - every 4 hours • CR - every 4 hours • Alt. OSC - as directed 	<u>WHEN</u> follow-up survey due, <u>THEN</u> RETURN TO Step 4.
___ 21	RETURN TO STEP 4	
___ 22	CHECK FACILITY - DEACTIVATED	<u>WHEN</u> facility deactivated, <u>THEN</u> GO TO Step 23.
___ 23	COLLECT DOSIMETRY	

NUMBER EPIP-4.17	PROCEDURE TITLE MONITORING OF EMERGENCY RESPONSE FACILITIES	REVISION 16
		PAGE 9 of 9

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

____ 24 GIVE ATTACHMENT 3 TO EXPOSURE CONTROL FOR RECORD UPDATE

____ 25 DOCUMENT RESULTS:

a) Complete all survey forms:

- Instrument used
- Instrument serial number
- Date
- Time

- Initials

b) Attach sample data to corresponding survey forms after completion of analysis

c) Give survey and analysis data to RPS

____ 26 TERMINATE EPIP-4.17

a) Do Emergency Kit Inspections PT

b) Give completed EPIP-4.17 with all attachments to the RPS

c) Completed by: _____
Date: _____
Time: _____

-END-

NUMBER EPIP-4.17	ATTACHMENT TITLE SURVEY MAP OF TSC	REVISION 16
ATTACHMENT 1		PAGE 1 of 4

Location TSC Date _____ Time _____

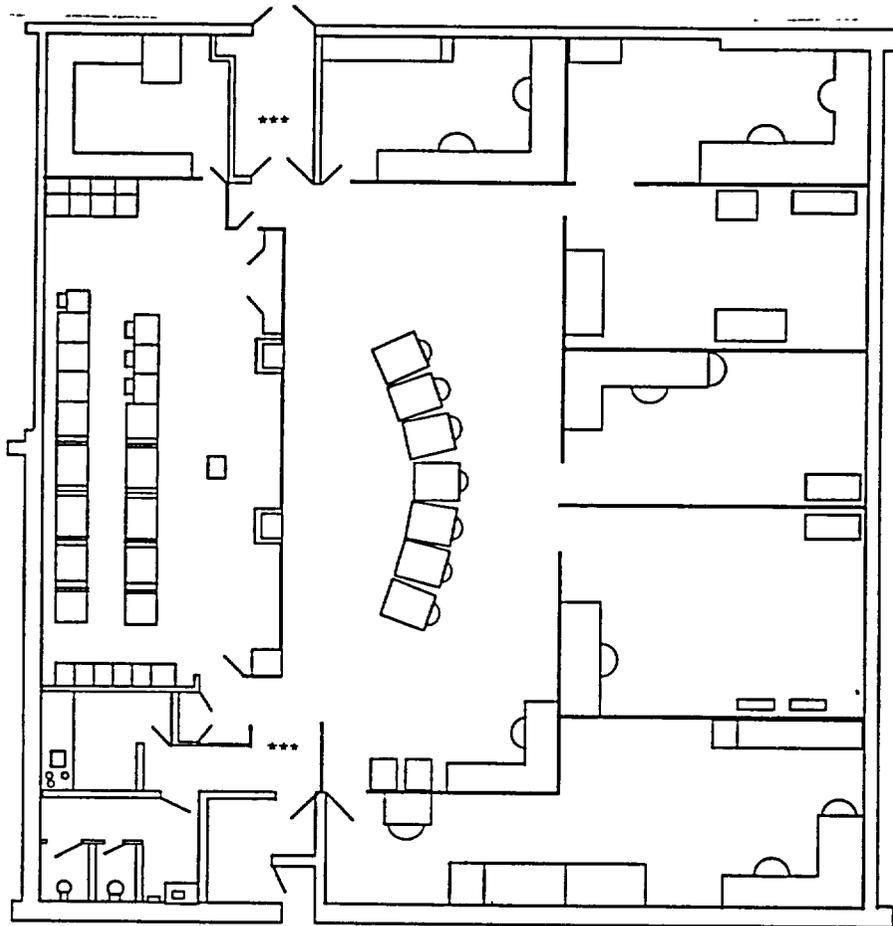
Purpose: Routine Non-Routine RWP Prep., for RWP No. _____ Reactor Power: #1 _____ %

Type: Gamma Beta Neutron Smear GA Smear LA Smear HP Air Sample #2 _____ %

Instrument Model	Serial #	<input type="checkbox"/> All GA smears <1000 DPM/100cm ² except as noted on map or smear worksheet <input type="checkbox"/> All GA smears <1000 DPM/100cm ² <input type="checkbox"/> All GA smears in DPM/100cm ² <input type="checkbox"/> All LA smears <1000 DPM/ft ² <input type="checkbox"/> All HP smears in HPs/smear <input type="checkbox"/> All HP smears < 1 HP/smear <input type="checkbox"/> All gamma readings in mrem/hr <input type="checkbox"/> Air particulates + I ₂ < 0.1 DAC <input type="checkbox"/> All neutron readings in mrem/hr <input type="checkbox"/> _____ <input type="checkbox"/> All beta readings in mrad/hr	

Comments: _____ Survey RWP: _____

Survey Team Dose, mrem (SRD/DAD or calculated): _____ Submitted By (Print & Signature): _____ Reviewed By (Print & Signature): _____ Date: _____



General Area, AS Air Sample; O Contact; Δ GA Smear; <> LA Smear; Δ* HP Smear;
 LCK Locked Gate; *** Proposed Rad Barrier for access control

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.17	SURVEY MAP OF OSC	16
ATTACHMENT		PAGE
1		2 of 4

Location MAINTENANCE BUILDING, THIRD FLOOR Date _____ Time _____

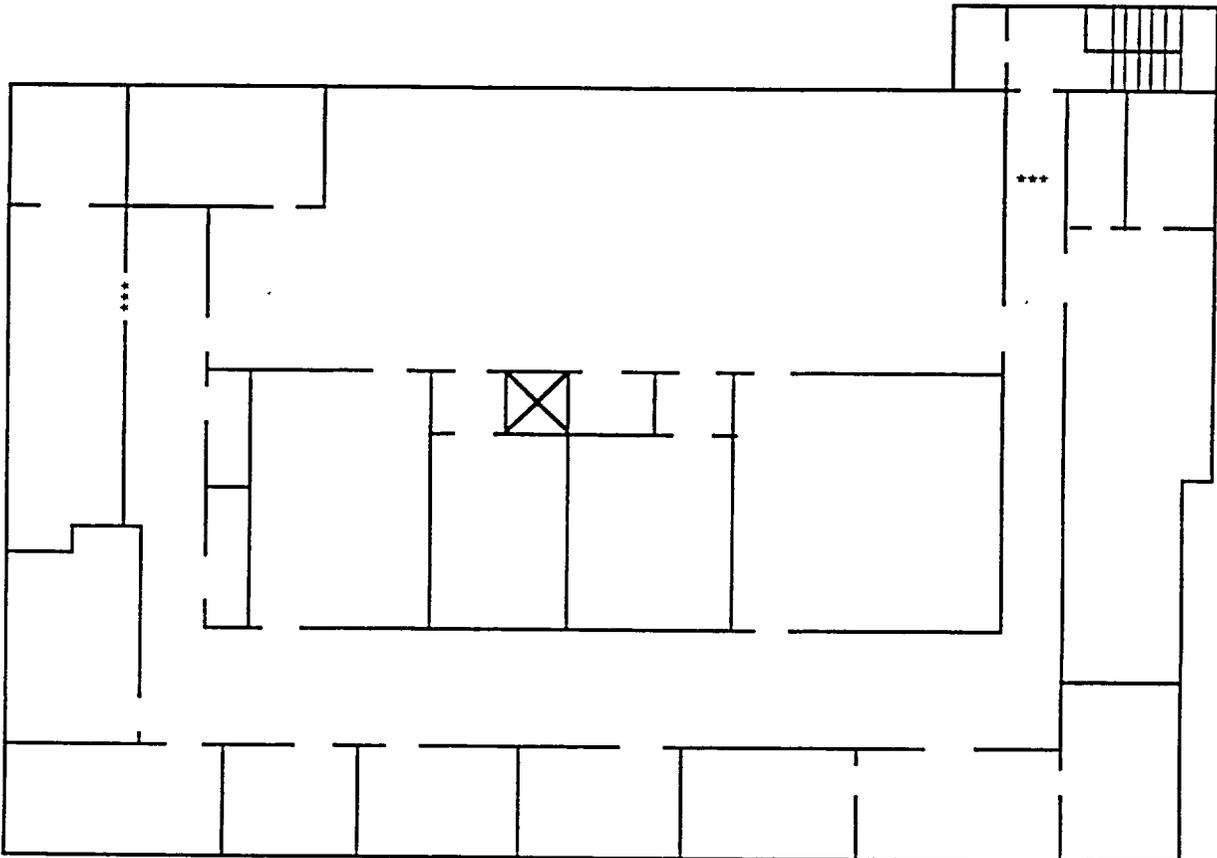
Purpose: Routine Non-Routine RWP Prep., for RWP No. _____ Reactor Power: #1 _____ %

Type: Gamma Beta Neutron Smear GA Smear LA Smear HP Air Sample #2 _____ %

Instrument Model	Serial #	
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² except as noted on map or smear worksheet
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² <input type="checkbox"/> All GA smears in DPM/100cm ²
		<input type="checkbox"/> All LA smears <1000 DPM/ft ² <input type="checkbox"/> All HP smears in HPs/smear
		<input type="checkbox"/> All HP smears < 1 HP/smear <input type="checkbox"/> All gamma readings in mrem/hr
		<input type="checkbox"/> Air particulates + I ₂ < 0.1 DAC <input type="checkbox"/> All neutron readings in mrem/hr
		<input type="checkbox"/> _____ <input type="checkbox"/> All beta readings in mrad/hr

Comments: _____ Survey RWP: _____

Survey Team Dose, mrem (SRD/DAD or calculated): _____ Submitted By (Print & Signature): _____ Reviewed By (Print & Signature): _____ Date: _____



General Area, Contact; GA Smear; LA Smear; HP Smear;
 AS Air Sample; LCK Locked Gate; *** Proposed Rad Barrier for access control

NUMBER EPIP-4.17 ATTACHMENT 1	ATTACHMENT TITLE SURVEY MAP OF ALTERNATE OSC	REVISION 16 PAGE 3 of 4
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Location ALTERNATE OSC (EMERGENCY SWITCHGEAR) Date: _____ Time: _____

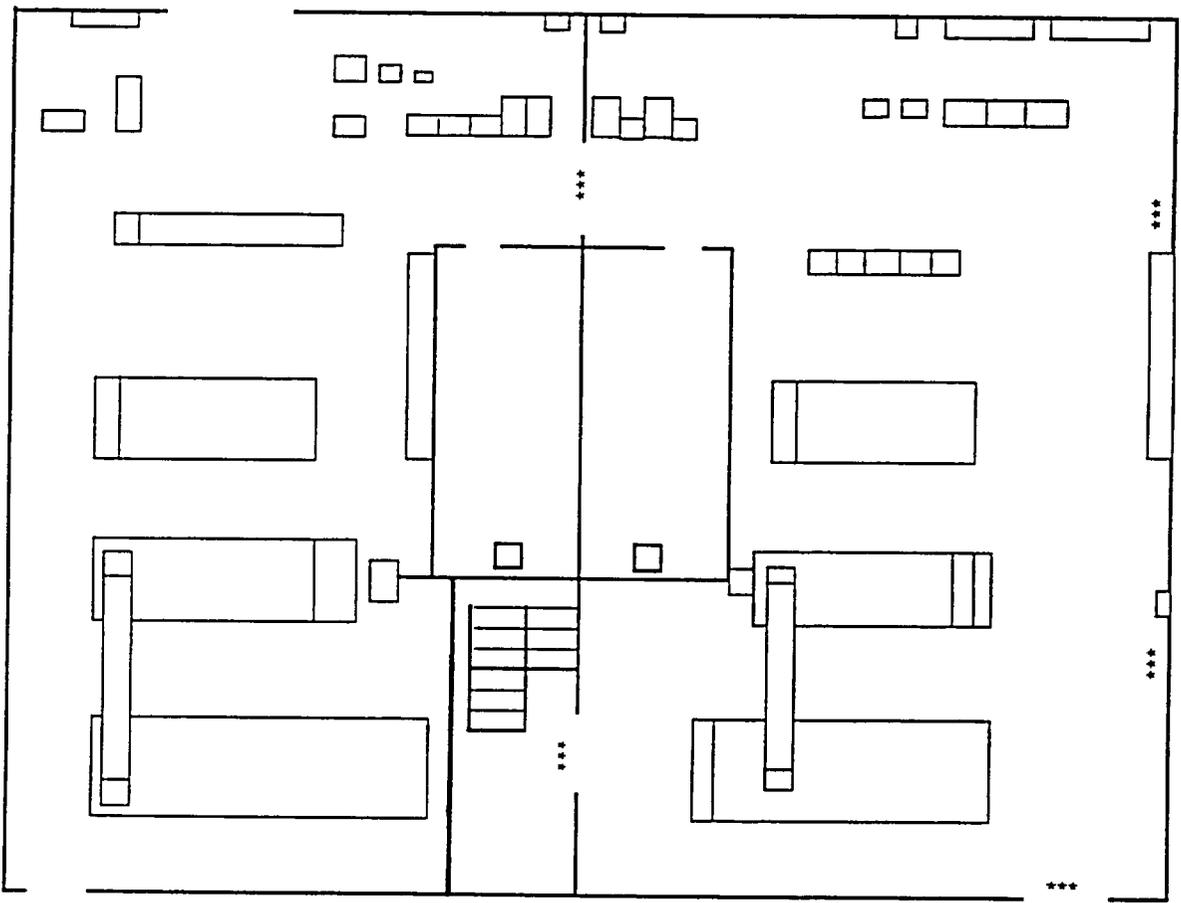
Purpose: Routine Non-Routine RWP Prep., for RWP No. _____ Reactor Power: #1 _____ x

Type: Gamma Beta Neutron Smear GA Smear LA Smear HP Air Sample #2 _____ x

Instrument Model	Serial #	
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² except as noted on map or smear worksheet
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² <input type="checkbox"/> All GA smears in DPM/100cm ²
		<input type="checkbox"/> All LA smears <1000 DPM/ft ² <input type="checkbox"/> All HP smears in HPs/smear
		<input type="checkbox"/> All HP smears < 1 HP/smear <input type="checkbox"/> All gamma readings in mrem/hr
		<input type="checkbox"/> Air particulates + I ₂ < 0.1 DAC <input type="checkbox"/> All neutron readings in mrem/hr
		<input type="checkbox"/> _____ <input type="checkbox"/> All beta readings in mrad/hr

Comments: _____ Survey RWP: _____

Survey Team Dose, mrem (SRD/DAD or calculated): _____ Submitted By (Print & Signature): _____ Reviewed By (Print & Signature): _____ Date: _____



General Area; O Contact; Δ GA Smear; <> LA Smear; Δ* HP Smear;
AS Air Sample; LCK Locked Gate; *** Proposed Rad Barrier for access control

NUMBER EPIP-4.17 ATTACHMENT 1	ATTACHMENT TITLE SURVEY MAP OF CONTROL ROOM	REVISION 16 PAGE 4 of 4
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Location CONTROL ROOM Date _____ Time _____

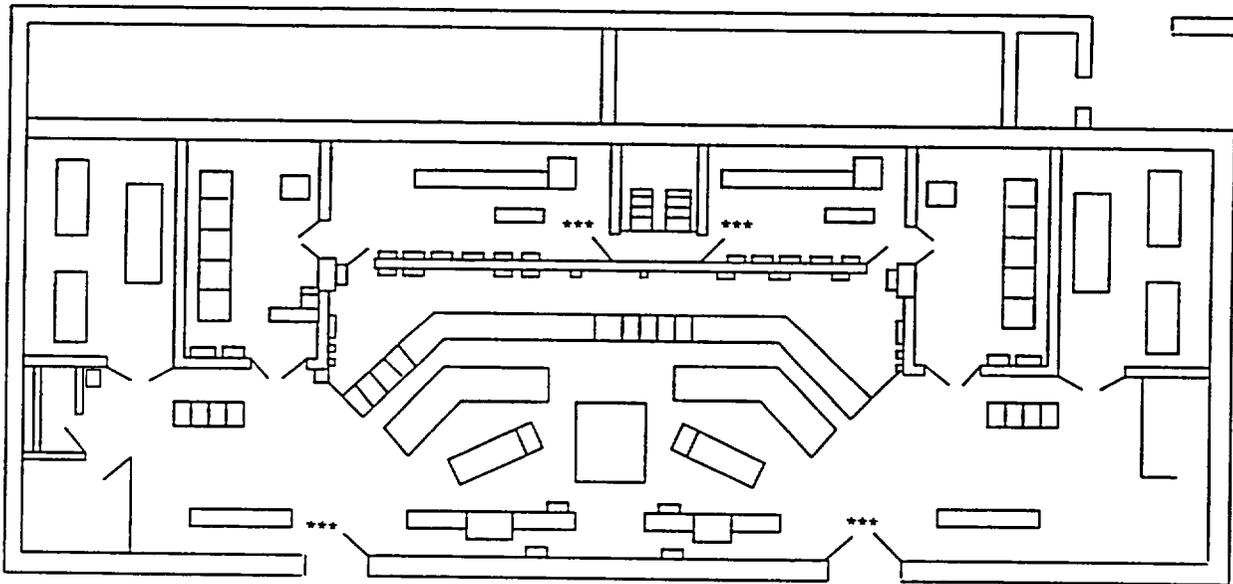
Purpose: Routine Non-Routine RWP Prep., for RWP No. _____ Reactor Power: #1 _____ %

Type: Gamma Beta Neutron Smear GA Smear LA Smear HP Air Sample #2 _____ %

Instrument Model	Serial #	
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² except as noted on map or smear worksheet
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ² <input type="checkbox"/> All GA smears in DPM/100cm ²
		<input type="checkbox"/> All LA smears <1000 DPM/ft ² <input type="checkbox"/> All HP smears in HPs/smear
		<input type="checkbox"/> All HP smears < 1 HP/smear <input type="checkbox"/> All gamma readings in mrem/hr
		<input type="checkbox"/> Air particulates + I ₂ < 0.1 DAC <input type="checkbox"/> All neutron readings in mrem/hr
		<input type="checkbox"/> _____ <input type="checkbox"/> All beta readings in mrad/hr

Comments: _____ Survey RWP: _____

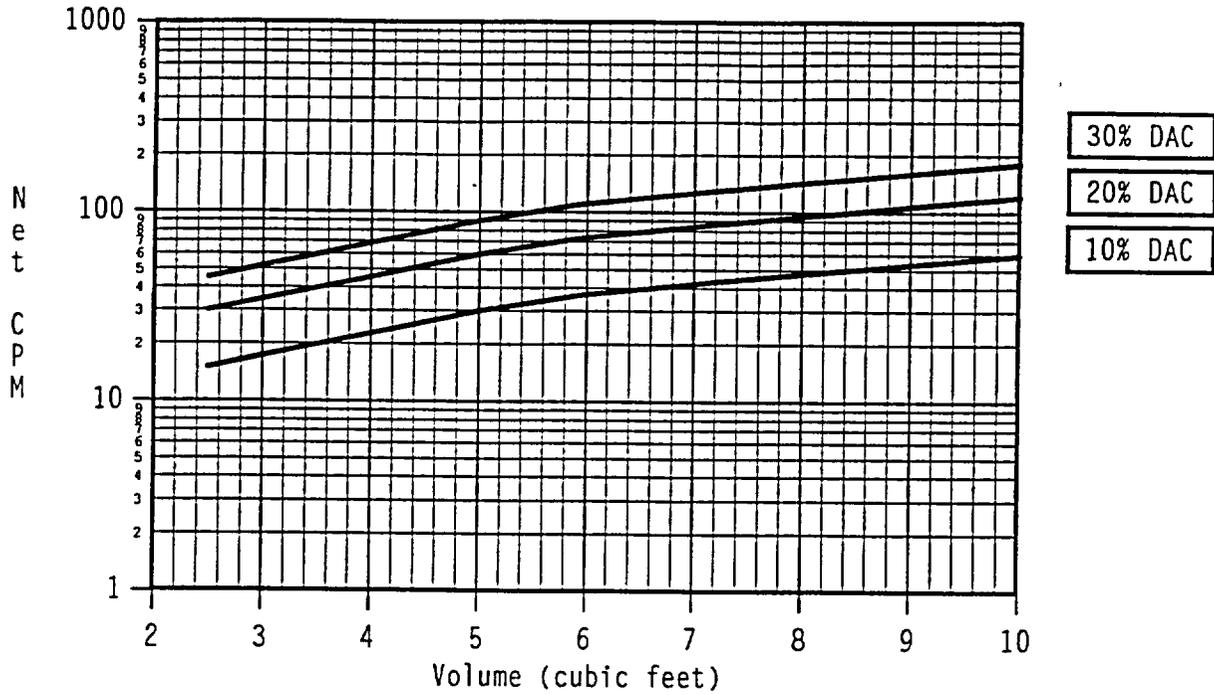
Survey Team Dose, mrem (SRD/DAD or calculated): _____ Submitted By (Print & Signature): _____ Reviewed By (Print & Signature): _____ Date: _____



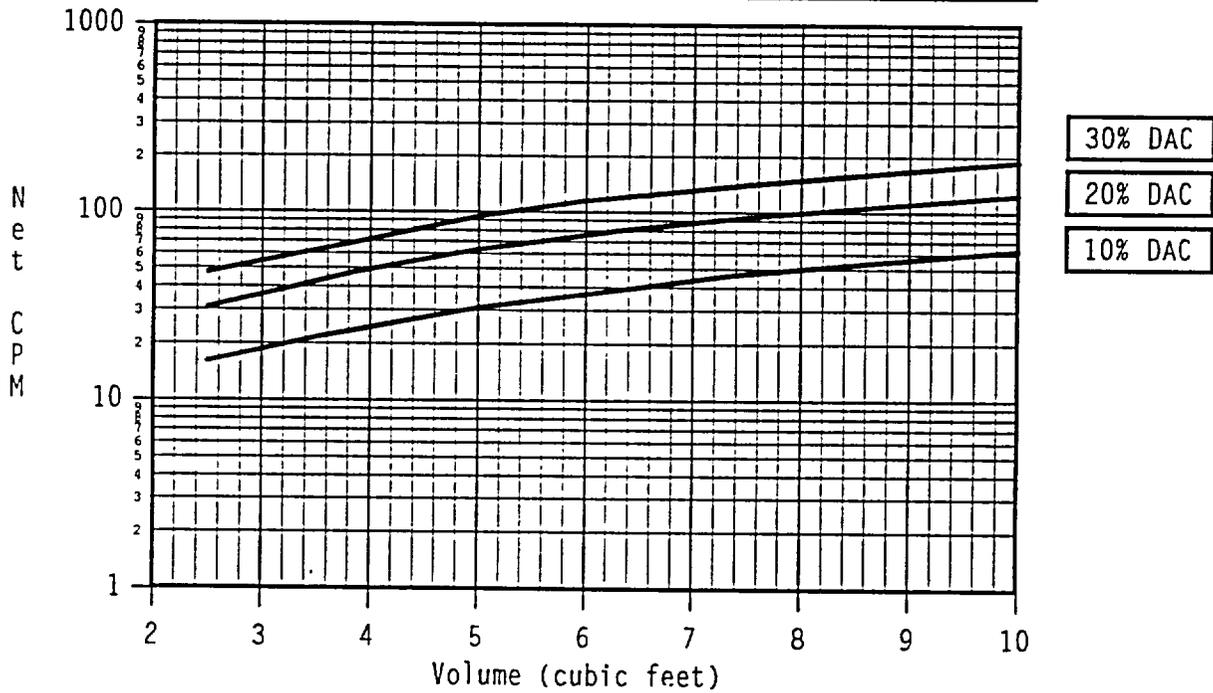
General Area; O Contact; A GA Smear; <> LA Smear; Δ* HP Smear;
 AS Air Sample; LCK Locked Gate; *** Proposed Lead Barrier for access control

NUMBER EPIP-4.17	ATTACHMENT TITLE % DAC DETERMINATION	REVISION 16
ATTACHMENT 2		PAGE 1 of 1

DETERMINATION OF % DAC: IODINE CARTRIDGE



DETERMINATION OF % DAC: PARTICULATE FILTER



NUMBER EPIP-4.17	ATTACHMENT TITLE EMERGENCY KIT SUPPLIES (TSC, OSC & ALTERNATE OSC)	REVISION 16
ATTACHMENT 4		PAGE 1 of 1

PROTECTIVE CLOTHING

- 1 Package of Cotton Inserts
- 5 Pair of Rubber Gloves
- 2 Hoods
- 2 Sets of PCs
- 2 Pair of Rubber Boots
- 2 Full-face Respirators, e.g., Ultravue or equivalent

INSTRUMENTATION AND SAMPLING SUPPLIES*

- 1 E520 with 177 (or equal)
- 1 RM-14 with 210 (or equal)
- 2 Boxes of smears
- 1 air sampler
- 1 Box of air particulate filters
- 1 Set of silver zeolite cartridges (6 individually wrapped cartridges/set)
- 1 Bag of plastic bags

MISCELLANEOUS EQUIPMENT

- 2 Flashlights
- 2 Sets of replacement batteries for flashlight(s)
- 5 Placards with assorted inserts and barrier rope
- 1 CS-137 check source
- 1 Container with posting instructions and supplies

VIRGINIA POWER
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF (With 7 Attachments)	REVISION 13
		PAGE 1 of 10

PURPOSE

Provide radiation protection for LEOF personnel.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated To A Controlled Source
As Required to Perform Work

ENTRY CONDITIONS

Activation by EPIP-4.02, RADIATION PROTECTION SUPERVISOR CONTROLLING PROCEDURE.

Approvals on File

Effective Date 12/18/2002

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13
		PAGE 2 of 10



___ 1 INITIATE PROCEDURE:

- By: _____
- Date: _____
- Time: _____

___ 2 ASK RPS FOR BRIEFING:

- Transportation to LEOF
- Direction of plume (if radiological release occurred)
- Protective equipment required at the LEOF (PCs, respiratory protection, dosimetry)

NOTE: The contents of the LEOF Emergency Kit are listed in Attachment 7.

___ 3 ENSURE EXPOSURE CONTROL NOTIFIED TO PROVIDE THE FOLLOWING TO LEOF:

- Approximately 50 digital alarming dosimeters DADs
- Approximately 50 freshly annealed TLDs

___ 4 GO TO LEOF

___ 5 CHECK LEOF DOOR - UNLOCKED Ask Security to open LEOF.

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13
		PAGE 3 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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- CAUTION:**
- Both indicator lights illuminate when equipment is changing status.
 - The operator should wait until only one light is on before determining status.
 - It may take up to 15 seconds for an indicator light to change after a button is pressed.

NOTE: Instructions for the Normal, Emergency and Isolation Mode of the LEOF Heating, Ventilation and Air Conditioning (HVAC) system are provided in Attachments 4, 5 and 6, respectively.

- ___ 6 VERIFY HVAC SET TO EMERGENCY MODE:
- a) Go to Ventilation Control Panel: 0-HV-CP-01
- b) Verify status lights:
- Unit Fan S-1 RUN (RED)
 - Computer Fan S-2 RUN (RED)
 - HEPA Fan F-1 RUN (RED)
 - Damper D-1 STOP (GREEN)
 - Damper D-2 RUN (RED)
 - Damper D-3 RUN (RED)
- IF HVAC status lights indicate Normal Mode or Isolation Mode, THEN do the following:
- 1) IF HVAC in Isolation Mode, THEN assure RAC knows PING-3B will not monitor LEOF air activity.
 - 2) Ask RAC for direction regarding changing HVAC mode.
- IF HVAC NOT operable, THEN do the following:
- 1) Assure RAC knows HVAC status.
 - 2) Evaluate effect on following:
 - LEOF habitability.
 - PING-3B operability.

___ 7 OPEN LEOF EMERGENCY KIT

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOP	REVISION 13 PAGE 4 of 10
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STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

____ 8 PERFORM INSTRUMENT OPERABILITY CHECKS (battery, calibration, response check with source)

____ 9 DO INITIAL SURVEY:

a) Record results of the following surveys on Attachment 1:

- Smear Survey
- Direct Radiation Survey

b) Get air sample:

- 1) Insert silver zeolite and particulate filter into air sampler
- 2) Get a 10 ft³ air sample if time permits (Get at least a 5 ft³ air sample)

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOP	REVISION 13
		PAGE 5 of 10

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

10 DO AIR SAMPLE CARTRIDGE ANALYSIS:

- a) Go to a low background area with the air sample and frisker
- b) Turn on frisker
- c) Wait for frisker to stabilize
- d) Take background (BKG) radiation level reading in CPM
- e) Hold silver zeolite 1/4 inch from detector with influent side of cartridge facing the detector
- f) Take GROSS CPM reading
- g) Calculate NET CPM:

$$\text{Gross CPM} - \text{BKG CPM} = \text{NET CPM}$$
- h) Do % DAC screening:
 - 1) Use Attachment 2
 - 2) Plot NET CPM against sample volume
- i) Put sample in a poly bag labeled with the following:
 - Date
 - Time
 - Volume
 - Location
- j) Record results on Attachment 1:
 - Analysis results
 - Date
 - Time
 - Instrument and Serial Number

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13
		PAGE 6 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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- ____ 11 DO PARTICULATE FILTER ANALYSIS:
- a) Wait for frisker to stabilize
 - b) Take background (BKG) radiation level reading in CPM
 - c) Hold filter 1/4 inch from detector with influent side of cartridge facing the detector
 - d) Take GROSS CPM reading
 - e) Calculate NET CPM:
Gross CPM - BKG CPM = NET CPM
 - f) Do % DAC screening:
 - 1) Use Attachment 2
 - 2) Plot NET CPM against sample volume
 - g) Put sample in a poly bag labeled with the following:
 - Date
 - Time
 - Volume
 - Location
 - h) Record results on Attachment 1:
 - Analysis results
 - Date
 - Time
 - Instrument and Serial Number

____ 12 NOTIFY RPS (or RAC) OF RESULTS

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13 <hr/> PAGE 7 of 10
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	ESTABLISH ACCESS CONTROL POINT AT LEOF ENTRANCE: <ul style="list-style-type: none"> • Personnel monitoring area with frisker for personnel to monitor upon entry into LEOF • Dosimetry issue point • Ensure entry/exit points are controlled 	
14	ASSIGN DOSIMETRY: <ol style="list-style-type: none"> a) Ask Security for list of personnel who are in LEOF b) Record information on Attachment 3 for each person c) Assign dosimetry: <ul style="list-style-type: none"> • TLD • DAD d) Continue to assign dosimetry to additional personnel as they arrive 	
15	CHECK AREA - CONTAMINATED	IF LEOF <u>NOT</u> contaminated, <u>THEN</u> GO TO Step 19.
16	ISOLATE (ROPE-OFF) CONTAMINATED AREA	
17	ASK RPS FOR ASSISTANCE IN DECONTAMINATION AND FOR SUPPLY OF PROTECTIVE CLOTHING (AS NEEDED)	

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13 <hr/> PAGE 8 of 10
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 18	GIVE OUT PROTECTIVE CLOTHING TO LEOF PERSONNEL (AS NEEDED)	
_____ 19	CHECK AIR SAMPLE RESULTS GREATER THAN OR EQUAL TO 0.30 DAC LEVELS	<u>IF</u> air sample results LESS THAN 0.30 DAC, <u>THEN</u> GO TO Step 22.
_____ 20	NOTIFY RAC ABOUT HIGH AIRBORNE ACTIVITY LEVELS	
_____ 21	ASSIGN RESPIRATORY PROTECTION AS DIRECTED BY THE RAC	
_____ 22	INITIATE EPIP-4.28, TSC/LEOF RADIATION MONITORING SYSTEM	
_____ 23	CHECK PING-3B - OPERATIONAL	<u>IF</u> PING-3B <u>NOT</u> operational, <u>THEN</u> GO TO Step 25.
_____ 24	GO TO STEP 26	

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13
		PAGE 9 of 10



____ 25 CONTINUE MONITORING:

- a) Notify RAC PING-3B inoperable
- b) Consult with RAC about survey schedule (recommended survey schedule appears below)

RADIOLOGICAL RELEASE STATUS	RECOMMENDED SURVEY FREQUENCY
No release or release < 100% ODCM	Do survey every 4 hours
Radiological release with actual or projected doses < 0.1 Rem TEDE and < 0.5 Rem Thyroid CDE	Do survey every 1 hour
Radiological release with actual or projected doses ≥ 0.1 Rem TEDE or ≥ 0.5 Rem Thyroid CDE	Do survey every 1 hour <u>AND</u> take direct readings in general area every 15 - 30 minutes

- c) Repeat surveys as directed
- d) Report results to RAC and RPS

____ 26 CHECK EMERGENCY - TERMINATED

Continue assessment

AND

RETURN TO Step 23.

1. RADIATION MONITOR ALARM/RADIOLOGICAL PLUME EXPOSURE RESPONSE CRITERIA

IF a valid radiation alarm occurs on the LEOF Radiation Monitoring System (PING-3B)

OR

IF the plume shifts towards the LEOF and a radiological release is in progress, THEN do the following:

- a) Verify/confirm any increased area radiation or airborne contamination readings via portable instrumentation.
- b) Consult with the RAC:
 - Discuss radiological situation.
 - Recommend transfer of LEOF HVAC to Isolation Mode.
- c) IF RAC concurs, THEN transfer HVAC to Isolation Mode using Attachment 6.

2. HVAC SYSTEM MODE CHANGE TO NORMAL CRITERIA

IF RAC directs use of the HVAC system in the Normal Mode, THEN initiate Attachment 4.

NUMBER EPIP-4.18	PROCEDURE TITLE MONITORING OF LEOF	REVISION 13 <hr/> PAGE 10 of 10
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
-------------	---------------------------------	------------------------------

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
-------------	---------------------------------	------------------------------

_____ 27 COMPLETE MONITORING ACTIVITIES:

- a) Complete Attachment 1 for all surveys:
 - Date
 - Time
 - Instrument and Serial Number
 - Name
- b) Give completed surveys to RPS
- c) Take air samples to the plant for further analysis

_____ 28 TERMINATE EPIP-4.18:

- a) Do Emergency Kit Inspections PT
- b) Give completed EPIP-4.18, forms, and other applicable records to the RPS
- c) Completed by: _____
Date: _____
Time: _____

-END-

NUMBER EPIP-4.18	ATTACHMENT TITLE SURVEY MAP OF LEOF	REVISION 13
ATTACHMENT 1		PAGE 1 of 1

Location LEOF Date _____ Time _____

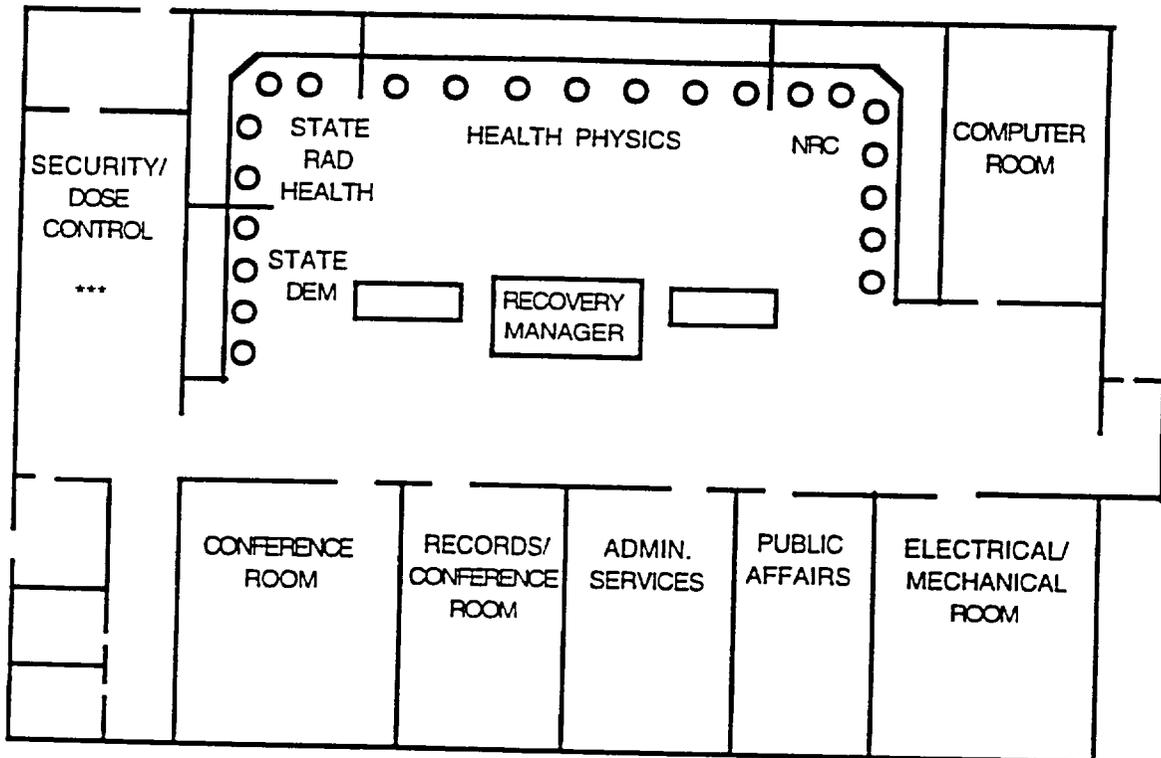
Purpose: Routine Non-Routine RWP Prep., for RWP No. _____ Reactor Power: #1 _____ %

Type: Gamma Beta Neutron Smear GA Smear LA Smear HP Air Sample #2 _____ %

Instrument Model	Serial #	<input type="checkbox"/> All GA smears <1000 DPM/100cm ² except as noted on map or smear worksheet	
		<input type="checkbox"/> All GA smears <1000 DPM/100cm ²	<input type="checkbox"/> All GA smears in DPM/100cm ²
		<input type="checkbox"/> All LA smears <1000 DPM/ft ²	<input type="checkbox"/> All HP smears in HPs/smear
		<input type="checkbox"/> All HP smears < 1 HP/smear	<input type="checkbox"/> All gamma readings in mrem/hr
		<input type="checkbox"/> Air particulates + I ₂ < 0.1 DAC	<input type="checkbox"/> All neutron readings in mrem/hr
		<input type="checkbox"/> _____	<input type="checkbox"/> All beta readings in mrad/hr

Comments: _____ Survey RWP: _____

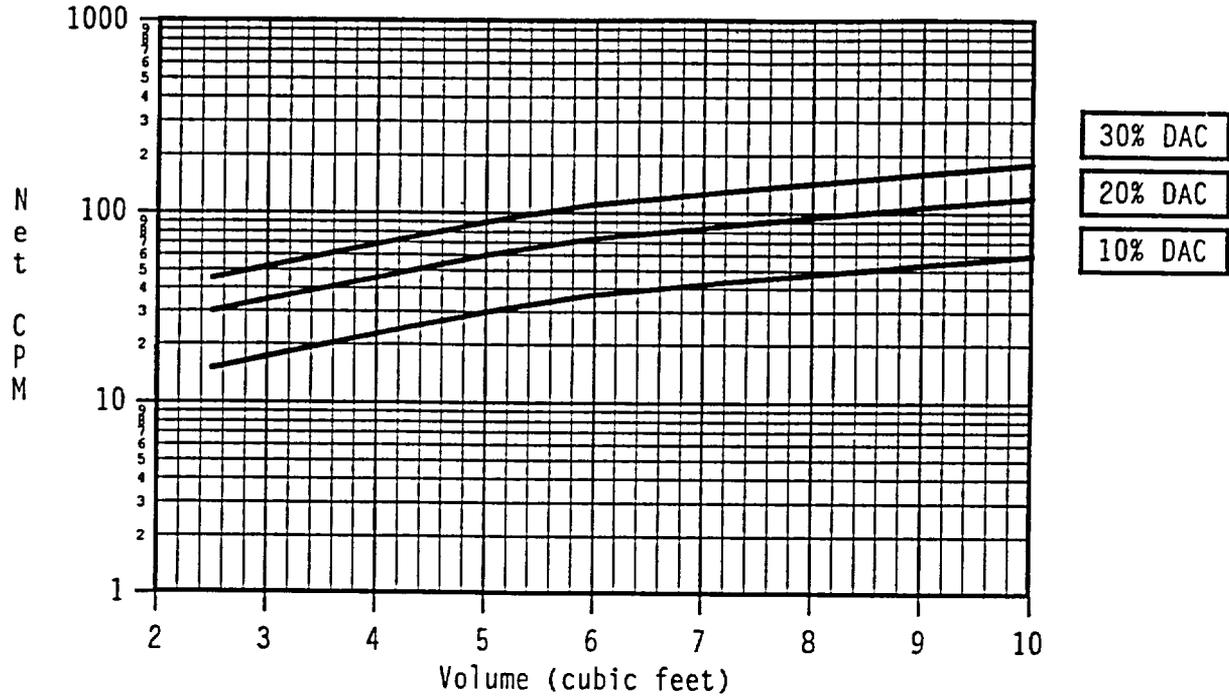
Survey Team Dose, mrem (SRD/DAD or calculated): _____ Submitted By (Print & Signature): _____ Reviewed By (Print & Signature): _____ Date: _____



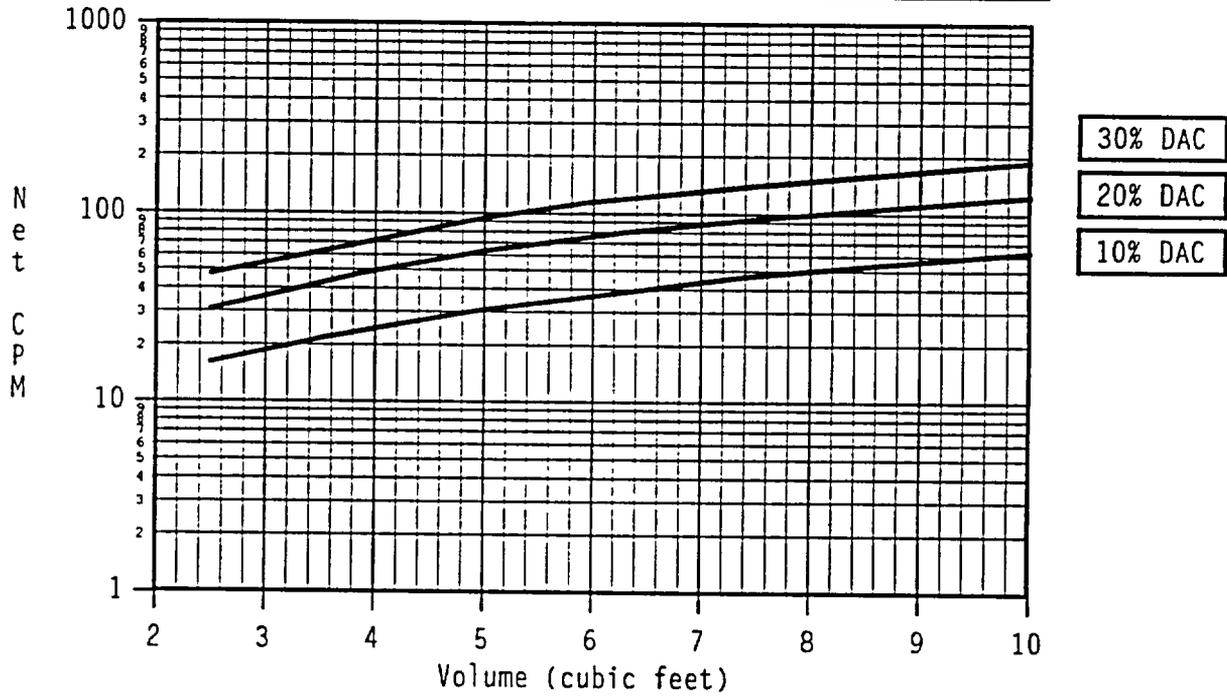
General Area, AS Air Sample; O Contact; LCK Locked Gate; Δ GA Smear; <> LA Smear; Δ* HP Smear; *** Proposed Rad Barrier for access control

NUMBER EPIP-4.18 ATTACHMENT 2	ATTACHMENT TITLE % DAC DETERMINATION	REVISION 13 PAGE 1 of 1
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DETERMINATION OF % DAC: IODINE CARTRIDGE



DETERMINATION OF % DAC: PARTICULATE FILTER



NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.18	HVAC OPERATIONS	13
ATTACHMENT	NORMAL MODE	PAGE
4		1 of 1

CAUTION: When performing HVAC operations, the damper indicator lights should show the damper fully closed (stop - green) or open (run - red) prior to performing the next step in the sequence.

NOTE: All components should be cycled to the off/closed position if the system has tripped due to a power failure.

<u>EQUIPMENT</u>	<u>STATUS</u>
1. Damper D-1	RUN (Red)
2. Air Handler Fan, S-1	RUN (Red; Refer to Notes #1 & #2 below)
3. Damper D-3	RUN (Red)
4. HEPA Filter Fan, F-1	STOP (Green; Refer to Note #3 below)
5. Damper D-2	STOP (Green)
6. Computer Room HVAC, S-2	RUN (Red)
7. Computer Room HVAC, S-4	RUN (Red; Refer to Note #4 below)
8. Exhaust Fan, V-1	ON (Refer to Note #5 below)

-
- Note 1) The room thermostat cycles the refrigeration unit (S-3) or heating coils (HC) as thermostat demands, while the air handler fan runs continuously.
 - Note 2) Damper D-3 is interlocked with the Air Handler Fan S-1 and will not open unless S-1 is running.
 - Note 3) HEPA Filter Fan F-1 and Damper D-2 are interlocked. Fan F-1 will not operate without D-2 open. If Damper D-2 is closed with F-1 operating, then fan F-1 will trip off-line.
 - Note 4) The Computer Room HVAC operates independently of the main LEOF air condition unit. Switch S-2 is located on the ventilation panel and Switch S-4 is located on the MCC in the Electrical/Mechanical Equipment Room labelled "Computer Room Indoor HVAC Unit". Both switches must be ON for the system to operate.
 - Note 5) The ON/OFF switch for fan V-1 is in the Custodian's Closet, which is located next to the men's room and normally locked. Get LEOF key (NAB-110) from Security. The operating switch is the left switch on the double switch plate. Exhaust Fan V-1 can only be operated if:
 - 1) Air Handler S-1 is RUN (Red).
 - 2) Damper D-3 is RUN (Red).
 - 3) The ON/OFF switch for V-1 is ON.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.18	HVAC OPERATIONS EMERGENCY MODE	13
ATTACHMENT		PAGE
5		1 of 1

CAUTION: When performing HVAC operations, the damper indicator lights should show the damper fully closed (stop - green) or open (run - red) prior to performing the next step in the sequence.

<u>EQUIPMENT</u>	<u>STATUS</u>
1. Air Handler Fan S-1	RUN (Red)
2. Damper D-1	STOP (Green)
3. Damper D-2	RUN (Red)
4. Damper D-3	RUN (Red)
5. Exhaust Fan V-1	ON (Refer to Note #1 below)
6. HEPA Filter Fan F-1	RUN (Red)
7. Computer Room HVAC, S-2	RUN (Red)
8. Computer Room HVAC, S-4	RUN (Red; Refer to Note #2 below)

Note 1) The local ON/OFF switch for fan V-1 is in the Custodian's Closet, which is located next to the men's room and normally locked. Get LEOF key (NAB-110) from Security. The operating switch is the left switch on the double switch plate.

Exhaust Fan V-1 can only be operated if:

1. Air Handler S-1 is RUN (Red).
2. Damper D-3 is RUN (Red).
3. The local ON/OFF switch for V-1 is ON.

Note 2) The Computer Room HVAC system operates independently of the main LEOF air conditioning unit. Switch S-2 is located on the ventilation panel and Switch S-4 is located on the MCC in the Electrical/Mechanical Equipment Room labelled "Computer Room Indoor HVAC Unit". Both switches must be ON for the system to operate.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.18	HVAC OPERATIONS ISOLATION MODE	13
ATTACHMENT		PAGE
6		1 of 1

CAUTION: When performing HVAC operations, the damper indicator lights should show the damper fully closed (stop - green) or open (run - red) prior to performing the next step in the sequence.

EQUIPMENT

STATUS

- | | |
|----------------------------|-----------------------------------|
| 1. Air Handler Fan S-1 | RUN (Red) |
| 2. Damper D-1 | STOP (Green) |
| 3. HEPA Filter Fan F-1 | STOP (Green) |
| 4. Damper D-2 | STOP (Green) |
| 5. Exhaust Fan V-1 | OFF (Refer to Note #1 below) |
| 6. Damper D-3 | STOP (Green) |
| 7. Computer Room HVAC, S-2 | RUN (Red) |
| 8. Computer Room HVAC, S-4 | RUN (Red; Refer to Note #2 below) |

Note 1. The local ON/OFF switch for fan V-1 is in the Custodian's Closet, which is located next to the men's room and is normally locked. Get LEOF key (NAB-110) from Security. The operating switch is the left switch on the double switch plate.

Note 2. The Computer Room HVAC system operates independently of the main LEOF air conditioning unit. Switch S-2 is located on the ventilation panel and Switch S-4 is located on the MCC in the Electrical/Mechanical Equipment Room labelled "Computer Room Indoor HVAC Unit". Both switches must be ON for the system to operate.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.18	LEOF EMERGENCY KIT SUPPLIES	13
ATTACHMENT		PAGE
7		1 of 1

PROTECTIVE CLOTHING

- 1 Package of Cotton Inserts
- 5 Pair of Rubber Gloves
- 2 Hoods
- 2 Sets of PCs
- 2 Pair of Rubber Boots
- 2 Full-face Respirators, e.g., Ultravue or equivalent

INSTRUMENTATION AND SAMPLING SUPPLIES

- 1 E520 with 177 (or equal)
- 1 RM-14 with 210 (or equal)
- 2 Boxes of smears
- 1 air sampler
- 1 Box of air particulate filters
- 1 Set of silver zeolite cartridges (6 individually wrapped cartridges/set)
- 1 Bag of plastic bags

MISCELLANEOUS EQUIPMENT

- 2 Flashlights
- 2 Sets of replacement batteries for flashlight(s)
- 5 Placards with assorted inserts and barrier rope
- 1 CS-137 check source
- 1 Container with posting instructions and supplies

VIRGINIA POWER
NORTH ANNA POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS (With 4 Attachments)	REVISION 3
		PAGE 1 of 10

PURPOSE

Provide guidance to the Field Team Radio Operator (FTR0) to control Offsite Monitoring Team activities including:

1. Confirmation of radiological releases.
2. Plume tracking.
3. Determining radiological composition of releases.

ENTRY CONDITIONS

Any one of the following:

1. Release of radioactive material in conjunction with a Site Area Emergency or General Emergency condition.
2. Direction by the Radiological Assessment Director or the Radiological Assessment Coordinator.
3. Activation by another EPIP.

LEVEL 2 DISTRIBUTION
This Document Should Be Verified
And Annotated to A Controlled Source
As Required to Perform Work

Approvals on File

Effective Date 12/18/2002

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 2 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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____ 1 INITIATE PROCEDURE:

- By: _____
- Date: _____
- Time: _____

NOTE: The Radiological Assessment Director (RAD) is the Health Physics approval authority in the TSC while the Radiological Assessment Coordinator (RAC) has approval authority in the LEOF/CEOF.

____ 2 GET STATUS UPDATE FROM RAD/RAC:

- a) Emergency Classification
- b) Initial offsite release calculations
- c) Current monitor readings
- d) Current meteorological data:
 - Wind speed
 - Wind direction (from)
 - Stability Class
- e) Meteorological forecast (if available)

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 3 of 10

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- NOTE:
- A minimum of two (2) Offsite Monitoring Teams shall be dispatched (i.e., sent into the field) at a Site Area Emergency or higher emergency class.
 - The first available monitoring team should be used for near-site monitoring, i.e., within the Exclusion Area outside the Protected Area. As resources become available, additional teams should be sent to preselected monitoring locations.

_____ 3 DETERMINE STATUS OF OFFSITE MONITORING TEAMS:

- Unavailable - GO TO Step 4

OR

- Assembled and on stand-by - GO TO Step 5

OR

- Dispatched - GO TO Step 6

_____ 4 ASSEMBLE MONITORING TEAMS FOR STANDBY IF MANPOWER IS AVAILABLE

WHEN manpower available, THEN GO TO Step 5.

_____ 5 ASK RAD/RAC IF OFFSITE MONITORING SHOULD BE INITIATED

IF monitoring NOT required, THEN GO TO Step 23.

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 4 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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- 6 REVIEW THE FOLLOWING WITH THE RAD/RAC:
- a) Meteorological conditions to determine team placement
 - b) Projected offsite dose rates at anticipated monitoring locations
 - c) Protective measures for team:
 - Protective clothing
 - Respiratory equipment
 - Radio-protective drugs
 - d) Radiological composition of release
 - e) Plume direction
 - f) Number of teams needed
 - g) Exposure limits

EXPOSURE LIMITS (established by RAD/RAC)	
_____ Rem TEDE	<ul style="list-style-type: none"> • Maximum limit, without SEM's authorization for emergency exposure, is 5 Rem TEDE. • DDE dose rate is adjusted by accident-specific TEDE/DDE ratio to derive TEDE dose rate.
_____ Rem Thyroid CDE	<ul style="list-style-type: none"> • Threshold for recommending administration of radioprotective drugs is 25 Rem Thyroid CDE. • Thyroid CDE dose is the accumulated dose based on air sample result(s) and plume exposure time(s).

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 5 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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____ 7 ESTABLISH RADIO CONTACT:

- | | |
|--|---|
| <ul style="list-style-type: none"> a) Set radio to call group "EP 1" b) Use radio to establish communications c) Give monitoring team your phone number in case of radio failure d) Use Attachment 4, OFFSITE MONITORING TEAM INFORMATION, to record messages and data | <ul style="list-style-type: none"> a) Ask RAC, Dose Assessment Team Leader (in TSC) or RPS (in HP Office) for radio call group assigned to Offsite Monitoring Teams. b) <u>IF</u> radio communications can <u>NOT</u> be established, <u>THEN</u> ask RAC for assistance. |
|--|---|

____ 8 UPDATE MONITORING TEAM:

- Emergency classification
- Event status
- Meteorological conditions/forecast
- Offsite protective actions (e.g., implementation of offsite evacuation, siren activations)

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 6 of 10

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE: Attachment 1, FACTORS CONTROLLING THE AREA AFFECTED BY A RELEASE, provides an estimate of plume width at 1 and 2 miles downwind for Stability Classes A through G.

9 ESTABLISH MONITORING LOCATIONS:

a) Verify teams previously dispatched

a) IF teams have NOT been dispatched, THEN do the following:

1) Review offsite maps to determine preselected monitoring locations.

2) Send teams to preselected location in downwind sector

b) Calculate time until plume reaches monitoring location:

$$\text{Time (hours)} = \frac{\text{Distance from plant (miles)}}{\text{Wind speed (mph)}}$$

c) Have teams find plume centerline

AND

Report location once centerline is located

d) Have teams periodically check exposure

e) Check if maximum plume concentration expected at location other than pre-selected point

e) GO TO Step 10.

f) Identify off-centerline location using offsite map (in facility or Emergency Kit)

g) Identify location using sector designation and distance in miles (example: A-2)

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 7 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	<p>DETERMINE SAMPLE MEDIUM TO BE COLLECTED:</p> <ul style="list-style-type: none"> • Particulate and iodine • Gas • Soil • Snow/ice 	
11	VERIFY AIR SAMPLE - REQUIRED	<u>IF</u> air sample <u>NOT</u> required. <u>THEN</u> GO TO Step 16.
12	HAVE TEAM GET 10 FT ³ SAMPLE IF TIME AND DOSE RATES PERMIT (minimum 2.5 ft ³ sample volume)	
13	CHECK IF COUNT ROOM ANALYSIS OF INITIAL CONFIRMATORY SAMPLE IS REQUIRED	GO TO Step 16.
14	<p>HAVE INITIAL CONFIRMATORY SAMPLE DELIVERED TO THE SECURITY BUILDING</p> <p style="text-align: center;"><u>AND</u></p> <p>COORDINATE TRANSPORT TO COUNT ROOM</p>	
15	RECOMMEND SAMPLE BE ANALYZED IMMEDIATELY TO DETERMINE TEDE/DDE RATIO	
16	CALCULATE ESTIMATED TEDE DOSE USING ATTACHMENT 2, DETERMINATION OF TEDE/DDE RATIO	

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 8 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 17	CALCULATE THYROID CDE DOSE RATES USING ATTACHMENT 3. DETERMINATION OF THYROID OFFSITE DOSE RATE FROM SAMPLE ANALYSIS	
_____ 18	RECORD THE FOLLOWING ON ATTACHMENT 4, OFFSITE MONITORING TEAM INFORMATION: <ol style="list-style-type: none"> a) Monitoring Data <ul style="list-style-type: none"> • Current location • Maximum dose rates b) Dosimetry readings c) Estimated TEDE dose d) Thyroid CDE dose rate e) Plume width and location f) Air sample data 	

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3
		PAGE 9 of 10

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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NOTE: Unexpected readings may result from plume rise, looping or cloud meander.

____ 19 CONTINUE PLUME TRACKING:

- a) Get dose rates and location at plume centerline
- b) Check if unexpected readings occur b) GO TO Step 19.d.
- c) Have team travel downwind until plume is located
- d) Review Attachment 1, FACTORS CONTROLLING THE AREA AFFECTED BY A RELEASE, concerning plume width

____ 20 GET FIXED ENVIRONMENTAL SAMPLES AND TLDs AS REQUIRED

NOTE: Additional sampling of chronic exposure pathways is not normally within the scope of initial response actions, but may be performed as a follow-up action when time permits.

____ 21 CHECK IF CHRONIC EXPOSURE PATHWAY SAMPLING IS REQUIRED: GO TO Step 22.

- a) Direct teams to prepare for additional sampling
- b) Ask team to get samples from chronic exposure pathway:
 - Milk
 - Water
 - Crops

NUMBER EPIP-4.34	PROCEDURE TITLE FIELD TEAM RADIO OPERATOR INSTRUCTIONS	REVISION 3 PAGE 10 of 10
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
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_____ 22 CHECK IF CONTINUED MONITORING IS REQUIRED:

GO TO Step 23.

a) Consult with RAD/RAC

b) RETURN TO Step 8

_____ 23 TERMINATE EPIP-4.34:

- Give completed EPIP-4.34, forms and other applicable records to the RAD/RAC

• Completed by: _____

Date: _____

Time: _____

-END-

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.34	FACTORS CONTROLLING THE AREA AFFECTED BY A RELEASE	3
ATTACHMENT		PAGE
1		1 of 1

The area affected by a release is dependent on the atmospheric stability class and wind speed and direction, among other variables such as precipitation and terrain. From a practical standpoint, only stability class, which affects the width of the affected area, and wind speed and direction, which affect the length and direction of the area, will be considered.

The width of an affected area as a function of stability class and distance from the release point is illustrated by the following table. The table lists the different stability classes and lists the width of an area in feet which will contain a certain percent of the maximum calculated concentrations (or doses). The percentages considered are 90, 50 and 10%. The distances are 1 and 2 miles from a release point. These tables may be used as guidelines on what to tell the monitoring team to expect, such as in Stability Class F, where the team would be looking for a small area of rapidly increasing concentration if the cloud is approached from the side.

STABILITY CLASS	PERCENT OF MAXIMUM	AREA WIDTH (feet)	
		1 Mile Distance	2 Mile Distance
A	90	878	1632
	50	2256	4195
	10	4109	7641
B	90	653	1227
	50	1676	3152
	10	3053	5741
C	90	472	887
	50	1213	2279
	10	2209	4152
D	90	319	595
	50	819	1530
	10	1492	2787
E	90	235	433
	50	603	1112
	10	1098	2027
F	90	161	299
	50	414	768
	10	754	1399
G	90	97	179
	50	249	460
	10	453	843

Wind speed affects the area since higher speeds cause the cloud to arrive sooner, but concentrations are reduced. The affected area will be downwind of the release point. If the direction is variable, the area with the highest average downwind direction will be affected the greatest.

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.34	DETERMINATION OF TEDE/DDE RATIO	3
ATTACHMENT		PAGE
2		1 of 1

NOTE: TEDE = DDE + CEDE, when applied to emergency worker dose.

__1. Use Ratio TEDE/DDE from actual effluent pathway sample results when available (derived from Count Room analysis of effluent sample and derivation of ratio using EPIP-4.09, SOURCE TERM ASSESSMENT).

IF sample results NOT available, THEN use Ratio TEDE/DDE from MIDAS report.

IF MIDAS results NOT available, THEN use default TEDE/DDE ratio:

ACCIDENT TYPE	RATIO	ACCIDENT TYPE	RATIO
MSLB	50	VCT Rupture	1
SGTR	3	LOCA with melt	4
Fuel Handling	1.5	LOCA, no melt	2
WGDT Rupture	1	Locked Rotor	13

NOTE: SRD or DAD readings are equivalent to DDE.

__2. Determine estimated TEDE dose:

$$\boxed{\begin{array}{l} \text{DDE dose} \\ \text{from DAD or SRD} \end{array}} \times \text{Ratio } \boxed{\frac{\text{TEDE}}{\text{DDE}}} = \text{TEDE dose}$$

__3. IF TEDE dose greater than exposure limit, THEN notify RAD/RAC.

__4. Record resulting estimated TEDE dose on Attachment 4

__5. Determine DDE limit:

$$\boxed{\frac{\begin{array}{l} \text{Remaining dose, rem} \\ \text{from Attachment 4} \end{array} - \begin{array}{l} \text{Estimated TEDE, rem} \\ \text{from Step 2 above} \end{array}}{\text{Ratio TEDE/DDE}}} = \text{DDE limit, rem}$$

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.34	DETERMINATION OF THYROID OFFSITE DOSE RATE FROM SAMPLE ANALYSIS	3
ATTACHMENT		PAGE
3		1 of 1

__1. Determine equivalent I-131 activity from air sample analysis:

a) Check if sample data given in counts per minute (cpm). IF data given in $\mu\text{Ci/ml}$, THEN GO TO Step 2.

b) Get data from monitoring team(s):

• Background cpm: _____

• Gross (sample) cpm: _____

c) Calculate NET counts per minute:

Gross cpm - Background cpm = NET cpm

d) Calculate Conversion factor (CF) for sample volume collected:

$$\frac{3.33 \text{ E-10}}{\# \text{ ft}^3} = \text{CF}$$

e) Calculate activity:

$$\text{NET cpm} \times \text{CF} = \text{Activity, } \mu\text{Ci/ml}$$

__2. Calculate Thyroid CDE dose rate using the following calculation:

$$\text{Activity, } \mu\text{Ci/ml} \times 1.57 \text{ E+9} = \text{Thyroid CDE, mrem/hr}$$

__3. Calculate estimated Thyroid CDE dose using the following calculation:

$$\begin{array}{ccccc} \text{Thyroid CDE Dose Rate} & \times & \text{Exposure} & = & \text{Thyroid CDE Dose} \\ \text{(mrem/hr)} & & \text{(hours)} & & \text{(mrem)} \end{array}$$

NOTE: Thyroid CDE dose is accumulated dose based on sample result(s) and plume exposure time(s).

__4. IF Thyroid CDE dose greater than exposure limit, THEN notify RAD/RAC.

__5. Record results on Attachment 4.

NUMBER EPIP-4.34	ATTACHMENT TITLE OFFSITE MONITORING TEAM INFORMATION	REVISION 3
ATTACHMENT 4		PAGE 1 of 2

TEAM IDENTIFICATION No.: _____

TEAM MEMBER DATA:

NAME(s)	BADGE No.	REMAINING DOSE	COMMENTS

MONITORING DATA:

NOTE: Use "Remarks" spaces to make notes about a specific monitoring or air sample point (e.g., plume width, terrain). Use back of form to log instructions to team, pertinent comments, etc.

LOCATION	DATE / TIME	DAD/SRD READING	ESTIMATED TEDE DOSE*	WINDOW OPEN	WINDOW CLOSED
REMARKS:					
REMARKS:					
REMARKS:					

* Estimate using Attachment 2.

AIR SAMPLE DATA:

AIR SAMPLE ID.:	DATE / TIME:	LOCATION:
GROSS CPM:	BKG CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft ³):	ACTIVITY, $\mu\text{Ci}/\text{m}^3$ ** -	
THYROID CDE, mR/hr = Activity, $\mu\text{Ci}/\text{m}^3 \times 1.57\text{E}+9$ -		
REMARKS:		

** Determine using Attachment 3.

AIR SAMPLE ID.:	DATE / TIME:	LOCATION:
GROSS CPM:	BKG CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft ³):	ACTIVITY, $\mu\text{Ci}/\text{m}^3$ ** -	
THYROID CDE, mR/hr = Activity, $\mu\text{Ci}/\text{m}^3 \times 1.57\text{E}+9$ -		
REMARKS:		

** Determine using Attachment 3.

NUMBER EPIP-4.34	ATTACHMENT TITLE OFFSITE MONITORING TEAM INFORMATION	REVISION 3
ATTACHMENT 4		PAGE 2 of 2

FIELD TEAM RADIO OPERATOR LOG

DATE/TIME:

COMMENTS:
