NO 97887230
REV A

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.01 | RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE (With 2 Attachment) | 01 |
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PURPOSE

To initially assess emergency conditions, provide protective measures recommendations, establish an emergency organization and direct Health Physics Response to an Emergency.

USER

Radiological Assessment Director or Senior Health Physics representative onsite.

ENTRY CONDITIONS

1. Activation by EPIP - 1.01

REVISION RECORD

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE: 07-29-82 |
| REV. 01 | PAGE(S): | 1 of 31 through 31 of 31 | DATE: SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| F. N. Cay | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW: Rachael Hutchens | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE:<br>a) BY: _____<br>DATE: _____<br>TIME: _____<br>NOTE: During the initial stages of the emergency the Shift Supervisor may assume the position of Emergency Manager. | |
| 2. | CHECK CONDITIONS: | |
| | a) The Senior Health Physics individual onsite should report to the Control Room IF the TSC is NOT activated | a) IF TSC is activated, report to the TSC. |
| | b) Request briefing with Emergency Manager to determine:<br>1) Existing Plant Conditions<br>2) Emergency Action Levels (EALs) exceeded<br>3) Classification of emergency | |
| | c) Assume the position of Radiological Assessment Director | |
| 3. | INITIAL ASSESSMENT: | |
| | a) IF an offsite release has occurred: | a) If no actual OR potential offsite release has ment occurred GO TO Step 15. |
| | b) Request alternate on-shift technician to obtain, if possible, a sample of the effluent | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 4. | VERIFY EMERGENCY LEVEL: | |
| | a) IF the event - UNUSUAL EVENT, continue with this instruction | a) IF the event is ALERT or GREATER, GO TO Step 6. |
| 5. | EVENT - UNUSUAL EVENT: | |
| | a) IF radiological release - continue | a) IF the event is NOT radiological release GO TO Step 15. |
| | b) Initiate EPIP-4.08 Initial Offsite Release Assessment to assess percent Tech Spec Limit<br><br>AND<br><br>Return to Step 5.c | |
| | c) Assess percent Tech Spec: | |
| | 1) IF normal range monitors indicate LESS THAN 100% Tech Spec, inform Emergency Manager initial results indicate LESS THAN UNUSUAL EVENT<br><br>AND<br><br>GO TO Step 5.e | 1) IF normal range monitors GREATER THAN OR EQUAL TO 100% Tech Spec, GO TO Step 5.e.2. |
| | 2) IF normal range monitors are onscale and indicate GREATER THAN 100% Tech Spec, but LESS THAN 1000% Tech Spec<br><br>OR | 2) IF normal range monitors indicate GREATER THAN 1000% Tech Spec, GO TO Step 6. |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 5. | (CONTINUED) | |
| | Normal range monitors are offscale and indicate LESS THAN 1000% Tech Spec | |
| | 3) Confirm classification of an UNUSUAL EVENT | |
| | d) Report percent Tech Specs and Site Boundary dose rate to the Emergency Manager | |
| | e) Obtain sample(s) of the effluent release path | e) IF sample CANNOT be obtained GO TO Step 16. |
| | f) Have sample(s) analyzed as per Health Physics procedure, H. P. 3.4.1.3 | |
| | g) GO TO Step 16 for follow up assessment | |
| 6. | EVENT - ALERT, SITE OR GENERAL: | |
| | a) IF the emergency is classified as an ALERT, SITE, OR GENERAL EMERGENCY<br>AND<br>Radiological release has occurred OR may potentially occur, continue with this procedure | a) IF the event is NOT a radiological release, GO TO Step 16. |
| 7. | EVENT - CONDITION IV LIMITING FAULTS: | |
| | a) IF event - Limiting Fault Accident: | a) IF accident is NOT a Limiting Fault, GO TO Step 12. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 7. | (CONTINUED)<br>1) LOCA - GO TO Step 11<br>OR<br>2) Steam Generator Tube Rupture - GO TO Step 9<br>OR<br>3) Main Steam Line Rupture - GO TO Step 10<br>OR<br>4) Fuel Handling Accident - GO TO Step 8 | |
| 8. | EVENT - FUEL HANDLING ACCIDENT:<br>a) IF event - Fuel Handling accident:<br>1) Recommend evacuation of Fuel Building<br>AND/OR<br>Affected containment Building<br>AND<br>2) Restrict access until radiological assessment can be made | |
| | b) Assign EPIP-4.06, Personnel Monitoring and Decontamination to monitor and decontaminate, as necessary, individuals evacuated from accident area | b) IF individual found non-contaminated, continue with this instruction. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 8. | (CONTINUED) | |
| | c) Initiate EPIP-4.08, Initial Offsite Release Assessment, to assess offsite releases<br><br>AND<br><br>Return to Step 8.d | |
| | d) Report results of above step to Emergency Manager | |
| | e) GO TO Step 13 | |
| 9. | EVENT - STEAM GENERATOR TUBE RUPTURE: | |
| | a) IF event - Steam Generator Tube Rupture, request the following from Emergency Manager:<br><br>1) Status of Air Ejector divert<br><br>2) Number of Steam Generator Relief Valves lifted,<br><br>OR<br><br>Valves which may potentially lift<br><br>3) IF relief valves lifted, length of time valves remained open<br><br>4) Status of main steam supply to the Auxilary Feedwater Pump Turbine<br><br>5) Current Steam Generator Blowdown pathway | a) IF event is NOT Steam Generator Tube Rupture, GO TO Step 10. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 9. | (CONTINUED). | |
| | b) IF Air Ejector diverted to containment<br><br>AND<br><br>Individuals are in affected containment:<br><br>1) Request immediate evacuation of containment | b) IF Air Ejector did NOT divert to containment<br><br>OR<br><br>IF NO individuals are in affected containment:<br><br>1) Continue with this instruction. |
| | c) IF main steam supply to Auxiliary Feedwater Pump Turbine has NOT been isolated:<br><br>1) Request Emergency Manager initiate isolation of main steam supply, of affected generator, to Auxiliary Feedwater Pump Turbine | c) IF main steam supply to AFWPT isolated, release from this pathway may be disregarded.<br><br>1) GO TO Step 9.d. |
| | d) Request placement of operations personnel in Emergency Switchgear Room to report:<br><br>1) Initial readings<br><br>AND<br><br>2) Increase or decrease in Main Steam and AFWPT exhaust monitors | |
| | e) Initiate EPIP 4.08, Initial Offsite Release Assessment:<br><br>1) Determine offsite dose rate | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 9. | (CONTINUED) | |
| | AND | |
| | 2) GO TO Step 9.f of this instruction | |
| | f) Report results of the above step to Emergency Manager | |
| | g) Restrict access, until survey(s) confirm no radiological hazards: | |
| | 1) Steam Generator Blowdown Cooler area | |
| | 2) Steam Generator Blowdown Lines | |
| | 3) Steam Generator relief valve area | |
| | 4) Auxiliary Feedwater Pump Turbine exhaust area | |
| | 5) Condensate Polishing Building | |
| | h) IF personnel are available consider initiation of EPIP-4.23, Post Accident Sampling of Reactor Coolant, to assess core damage | h) IF personnel are NOT available, consider sampling upon arrival of additional manpower<br>AND<br>Continue with this instruction. |
| | i) Consider sampling of Steam Generator Blowdown and Main Steams of affected unit | |
| | j) Potential liquid release pathway may occur through the Main Steam Safety Valve. | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 9. | (CONTINUED) | |
| | k) GO TO Step 13 | |
| 10. | EVENT MAIN STEAM LINE RUPTURE: | |
| | a) IF Main Steam Line Rupture occurs, review station ventilation monitors | a) IF event is NOT a Main Steam Line Rupture, GO TO Step 11. |
| | 1) IF station monitors have indicated a release, initiate EPIP-4.08, Initial Offsite Release Assessment | 1) IF station monitors DO NOT indicate a release, GO TO Step 10.b. |
| | 2) Assess offsite dose rate | |
| | 3) Return to Step 10.b | |
| | b) Report results to the Emergency Manager | |
| | c) IF NO initial release has occurred, source term may develop: | |
| | 1) Inside containment | |
| | OR | |
| | 2) From Main Steam Relief Valve Lift | |
| | d) Request following information from the Emergency Manager: | |
| | 1) Location of Steam Break | |
| | 2) Actual or potential lifting of Main Steam Safety Valves | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 10. | (CONTINUED) | |
| | 3) IF valves have lifted, length of time valve remained open | |
| | 4) Status of Auxiliary Feedwater Pump Turbine (isolation) | 4) IF Main Steam supply to the Auxiliary Feedwater Pump Turbine has been isolated, no release will occur through this pathway. |
| | 5) Monitor Reading on Main Steam Monitors and AFWPT exhaust monitors | |
| | e) IF manpower is available: | e) IF manpower is NOT available continue with this procedure<br><br>AND<br><br>Consider initiation once manpower is available. |
| | 1) Consider initiation of EPIP-4.22, Post Accident Sampling of Containment Air<br><br>AND | |
| | 2) Initiation of EPIP-4.23, Post Accident Sampling of Reactor Coolant | |
| | f) GO TO Step 13 | |
| | NOTE: LOCA accident may not initially result in large release, but may produce a large source with a potential for release from the containment building. | |
| 11. | EVENT - LOCA | |
| | a) IF event - LOCA: | a) IF NOT LOCA, GO TO Step 12. |
| | 1) Evacuate Auxiliary Building and Safeguards Building | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 11. | (CONTINUED) | |
| | AND | |
| | 2) Restrict entry until survey(s) confirm no radiological hazzards | |
| | b) IF offsite release has occurred through monitored station ventilation, initiate EPIP 4.08, Initial Offsite Release Assessment | b) IF offsite release has occurred through unmonitored pathway<br>OR<br>Release has not occurred, but may potentially occure: |
| | 1) Assess offsite release | 1) Assign an individual to initiate EPIP 4.03, Dose Assessment Controlling Procedure |
| | AND | AND |
| | 2) Return to Step 11.c | 2) Assess actual or potential release from containment. |
| | c) Report results of above step to Emergency Manager | |
| | d) IF manpower is available, consider the following: | d) IF manpower NOT available: |
| | 1) EPIP-4.22, Post Accident Sampling of Containment Air | 1) Continue with this instruction. |
| | AND | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 11. | (continued)<br><br>2) Initiation of EPIP-4.23, Post Accident Sampling of Reactor Coolant<br><br>e) GO TO Step 13 | |
| 12. | EVENT - RADIOLOGICAL RELEASE:<br><br>a) IF event - Radiological Release, continue with this instruction<br><br>b) Initiate EPIP-4.08, Initial Offsite Release Assessment:<br><br>1) Assess offsite release<br><br>AND<br><br>2) Return to Step 12.c<br><br>c) Report results of above step to Emergency Manager<br><br>d) Request the Emergency Manager place an individual at monitor of interest<br><br>AND<br><br>Report increase or decrease in reading | a) IF event is NOT a Radiological Release, GO TO Step 15. |
| 13. | VERIFY OFFSITE DOSE RATE:<br><br>a) IF results of offsite release assessment at the Site Boundary: | a) IF results of offsite release assessment at Site Boundary: |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 13. | (continued) | |
| | 1) GREATER THAN OR EQUAL TO 50 mR/hr Whole Body<br><br>OR<br><br>GREATER THAN OR EQUAL TO 250 mR/hr Thyroid | 1) LESS THAN 50 mR/hr Whole Body<br><br>OR<br><br>LESS THAN 250 mR/hr Thyroid |
| | 2) Continue with this instruction | 2) GO TO Step 15. |
| 14. | PROTECTIVE MEASURES: | |
| | a) Obtain an estimate of duration of release (hours) from Emergency Manager | a) IF no estimate can be given, assume 3 hours. |
| | b) Use Site Boundary, 2, 5, and 10 mile Whole Body and Thyroid dose rates from:<br><br>1) EPIP-4.08, IF initial assessment<br><br>OR<br><br>2) EPIP-4.03, IF follow-up assessment | b) IF 2, 5, and 10 mile dose rate were NOT calculated, use dose rate at the distances calculated.<br><br>1) GO TO Step 14.b.2. |
| | c) Determine projected dose:<br><br>DURATION OF RELEASE (hours) x DOSE RATE (mR/hr) = PROJECTED DOSE (mR)<br><br>1) Repeat above calculation for all dose rates given in Step 14.b | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 14. | (CONTINUED) | |
| | d) IF projected dose -<br><br>GREATER THAN OR EQUAL TO 500 mR Whole Body<br><br>OR<br><br>GREATER THAN OR EQUAL TO 1000 Thyroid<br><br>1) Initiate EPIP-4.07, Protective Measure<br><br>AND<br><br>2) Determine protective measures for distances, which projected dose equals or exceeds the above dose<br><br>3) Return to Step 14.e | d) IF projected dose -<br><br>LESS THAN 500 mR Whole Body<br><br>OR<br><br>LESS THAN 1000 mR Thyroid<br><br>1) Inform Emergency Manager NO protective measure required<br><br>AND<br><br>2) GO TO NOTE prior to Step 15. |
| | e) Recommend to the Emergency Manager:<br><br>1) Protective measures required offsite<br><br>AND<br><br>2) Distance protective measures required | e) IF NO protective measures required, GO TO NOTE prior to Step 15. |
| | NOTE: First Aid considerations must be given priority over decontamination of individual. | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 15. | EVENT - INJURED CONTAMINATED INDIVIDUAL: | |
| | a) IF the event is an Injured Contaminated Individual,<br><br>AND<br><br>Requires Offsite Medical Treatment:<br><br>1) Initiate EPIP-4.20, Health Physics Actions for Transportation of Contaminated Injured Individual<br><br>2) Review personnel contamination survey(s) to confirm personnel contamination | a) IF the event is NOT an Injured Contaminated Individual, GO TO Step 16. |
| | b) Insure clothing removal and/or onsite decontamination can NOT be used to remove contamination | b) IF individual deconned, GO TO Step 15.e. |
| | c) Insure a Health Physics individual is available to accompany the victim | |
| | d) Recommend to Emergency Manager transportation of victim to MCV | |
| | e) IF the event initiated only for contaminated injured individual requiring offsite medical treatment,<br><br>AND<br><br>NO other EALs exceeded:<br><br>1) GO TO Step 30 | e) IF other EALs were exceeded GO TO Step 16. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 16. | FOLLOW-UP ASSESSMENT: | |
| | a) IF TSC NOT activated continue with this instruction | a) IF TSC IS activated GO TO Step 18. |
| | b) One member of Health Physics group should remain in the control room to assist the Emergency Manager | |
| | c) IF conditions require presence in another location:<br>1) Inform Emergency Manager<br>AND<br>2) Report to Control Room immediately upon completion of task | c) Continue with this instruction. |
| | d) IF a radiological release has occurred:<br>1) Continue with this instruction | d) IF NO release has occurred:<br>1) GO TO Step 16.g. |
| | e) Obtain samples of the effluent<br>1) Analyze samples as per normal Health Physics procedure<br>AND<br>2) IF sample activity is high, assign EPIP-4.26, High Level Activity Sample Analysis | e) IF NO samples can be obtained<br>1) Continue with this instruction<br>AND<br>2) Use monitoring readings for follow-up assessment |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 16. | (CONTINUED) | |
| | f) IF time allows: | f) IF time is NOT available, |
| | 1) Initiate EPIP-4.03, Dose Assessment Controlling Procedure | 1) GO TO Step 16.g |
| | AND | AND |
| | 2) Return to Step 16.g | 2) Return to Step 16.f, when time becomes available |
| | g) Insure dose control individual is available to supply dosimetry | |
| | h) Provide H.P. coverage, as needed, for: | |
| | 1) Damage Control Teams | |
| | OR | |
| | 2) Access control | |
| | OR | |
| | 3) Personnel monitoring | |
| | OR | |
| | 4) Sample analysis | |
| | i) IF the emergency has terminated GO TO Step 30 | i) IF the emergency has NOT terminated GO TO Step 16.j |
| | j) IF TSC IS manned, GO TO Step 17 | j) IF the TSC is NOT manned: |
| | | 1) Obtain latest dose rate |
| | | 2) Return to Step 13 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 16. | (CONTINUED) | |
| | | AND |
| | | 3) Repeat sampling and assessment, as necessary |
| 17. | VERIFY RELIEF: | |
| | a) When a more Senior Health Physics individual arrives onsite | a) IF relief is NOT needed, GO TO Step 18. |
| | OR | |
| | IF relief is needed: | |
| | 1) Brief successor as to existing plant conditions | |
| | AND | |
| | 2) Offsite release assessment | |
| | AND | |
| | 3) H. P. actions currently underway | |
| | b) Announce the change of position to the Emergency Manager | |
| 18. | ESTABLISH EMERGENCY ORGANIZATION: | |
| | a) IF the H. P. emergency organization NOT activated, continue with this procedure | a) IF emergency organization IS activated, GO TO NOTE prior to Step 19. |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 18. | (CONTINUED) | |
| | b) IF manpower is available:<br><br>1) Establish the Dose Assessment Team<br><br>AND<br><br>2) Assign EPIP-4.03, Dose Assessment Controlling Procedure | b) IF manpower is NOT available, continue with this instruction, assigning EPIP-4.03, when manpower becomes available. |
| | c) Establish position of Radiation Protection Supervisor and assign EPIP-4.02, Radiation Protection Supervisor Controlling | c) IF manpower is NOT yet available, continue with instruction assigning EPIP-4.02 when manpower becomes available. |
| | NOTE: During a SITE of GENERAL emergency, a minimum of two monitoring teams should be dispatched for offsite monitoring. | |
| | NOTE: The function of plume tracking/offsite monitoring will be the responsibility of the Radiological Assessment Coordinator, upon activation of EOF. | |
| 19. | ASSESS NEED FOR OFFSITE MONITORING: | |
| | a) Evaluate need for offsite monitoring with Dose Assessment Team Leader | a) IF offsite monitoring NOT required, GO TO Step 22. |
| | b) IF EOF NOT activated:<br><br>1) Request Radiation Protection Supervisor to initiate EPIP-4.16, Offsite Monitoring | b) IF EOF activated, GO TO Step 22. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 19. | (CONTINUED) | |
| | c) Evaluate need of protective measures for offsite teams | |
| | d) IF Whole Body exposure may exceed 10CFR20 quarterly limits:<br>1) Initiate EPIP-4.04, Emergency Exposure Limits<br>AND<br>2) Return to Step 19.e | d) IF Whole Body will NOT exceed 10CFR20 limits, GO TO Step 19.e. |
| | e) IF Thyroid exposure exceeds 10 REM (refer to Attachment 2):<br>1) Initiate EPIP-5.07, Administration of Radioprotective Drugs<br>AND<br>Return to Step 19.f | e) IF Thyroid exposure will NOT exceed 10 REM, GO TO Step 19.f. |
| | f) Inform Radiation Protection Supervisor:<br>1) Number of monitoring teams required<br>AND<br>2) Protective clothing required<br>AND<br>3) Respiratory protection required | 1) IF adequate manpower NOT available, GO TO Step 20. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 19. | (CONTINUED) | |
| | g) Assist Dose Assessment Team in placement of offsite monitoring teams. | |
| 20. | OFFSITE ASSESSMENT: | |
| | a) IF offsite releases occur: | a) IF NO offsite releases have occurred |
| | 1) Request Emergency Manager place individual at monitor of interest | OR |
| | AND | IF there is NO potential for a release |
| | 2) Report increase or decreasein monitor readings | 1) GO TO Step 22. |
| | b) The following information will be supplied periodically OR upon request: | |
| | 1) Meteorological data | |
| | 2) Radiation Monitor System data | |
| | 3) Sample Analysis data | |
| | c) Upon receipt of above data: | c) IF no data received, GO TO Step 20.d. |
| | 1) Complete Attachment 1 | |
| | 2) Give Attachment 1 to the Dose Assessment Team | |

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|---|---|---|
| 20. | (CONTINUED) | |
| | d) Obtain latest offsite Release Assessment Data Sheet from Dose Assessment Team | d) IF data not available, GO TO Step 22. |
| 21. | VERIFY OFFSITE DOSE RATE: | |
| | a) IF Site Boundary dose rate: | a) IF Site Boundary dose rate: |
| | 1) GREATER THAN OR EQUAL TO 50 mR/hr Whole Body | 1) LESS THAN 50 mR/hr Whole Body |
| | OR | OR |
| | 2) GREATER THAN OR EQUAL TO 250 mR/hr Thyroid | 2) LESS THAN 250 mR/hr Thyroid |
| | b) Return to Step 14 | b) GO TO Step 22. |
| 22. | EOF ACTIVATION: | |
| | a) IF EOF activated, continue with this instruction | a) IF EOF NOT activated, GO TO Step 23. |
| | b) Brief Radiological Assessment Coordinator: | |
| | 1) Existing plant conditions | |
| | AND | |
| | 2) Current offsite dose projections | |
| | AND | |
| | 3) H.P. actions underway | |
| | c) Inform Dose Assessment Team Leader to brief Radiological Assessment Coordinator: | |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 22. | (CONTINUED) | |
| | 1) Offsite dose assessment<br><br>AND<br><br>2) Status and location of off-site monitoring teams | |
| | d) Insure individual remains in radiological assessment area to transmit to EOF:<br><br>1) Meteorological data<br><br>AND<br><br>2) Monitor data<br><br>AND<br><br>3) Sample analysis data | |
| 23. | ESTABLISH IN-PLANT MONITORING: | |
| | a) Brief Radiation Protection Supervisor as to existing plant conditions | |
| | b) Assist in selecting proper monitoring and sampling areas | b) IF NO monitoring is needed GO TO Step 23.e. |
| | c) Instruct Radiation Protection Supervisor to initiate EPIP-4.14, Inplant Monitoring<br><br>AND<br><br>EPIP-4.15, Onsite Monitoring, as necessary | |

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| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 23. | (CONTINUED) | |
| | d) Assist Radiation Protection Supervisor in: | |
| | 1) Determining protective gear | |
| | 2) Dosimetry | |
| | AND | |
| | 3) Developing special precautions, as necessary, for inplant and onsite monitoring teams. | |
| | e) Request from Radiation Protection Supervisor establishing initial and periodic monitoring of TSC and EOF | |
| | 1) Based on survey data and plant conditions establish routine for surveys of the Emergency Centers | |
| | f) IF a radiological release has occurred | f) GO TO Step 23.g. |
| | AND | |
| | A change in plume direction OR increase in release has taken place | |
| | 1) Notify Radiation Protection Supervisor | |
| | AND | |
| | 2) Request survey of emergency centers | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 23. | (CONTINUED) | |
| | g) Based on survey data, direct the establishment of new control points: | |
| | 1) Control spread of contamination | |
| | AND/OR | |
| | 2) Limit exposure | |
| 24. | ENTRANCE - ACCESS CONTROL AREA: | |
| | a) Entrance into access controlled areas should require an evaluation of radiological hazards prior to entrance | a) IF entrance is not required GO TO Step 25. |
| | b) Assist Emergency Manager in obtaining Health Physics coverage, if necessary | |
| | c) Consult with the Radiation Protection Supervisor as to the entrance requirements | |
| | 1) If necessary, request initiation of a Radiation Work Permit, as per the Health Physics Manual | |
| 25. | RESPIRATORY PROTECTION: | |
| | a) Assess results of air sampling | |
| | b) Recommend evacuation of all non-essential personnel in areas that: | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 25. | (continued) | |
| | 1) High airborne activity is expected but not measured | 1) IF Airborne contamination NOT suspected, GO TO Step 27. |
| | 2) Airborne activity is GREATER THAN 0.25 times maximum permissible concentration. | 2) IF activity is LESS THAN OR EQUAL TO 0.25 maximum permissible concentration GO TO Step 27. |
| | c) Assess need for respiratory protection, as per EPIP-4.05 Respiratory Protection and return to Step 26 | |
| 26. | DETERMINE NEED FOR RADIOPROTACTIVE DRUGS: | |
| | a) Determine, from survey results, concentration of radioiodine (uCi/ml) | |
| | b) Determine actual or projected length of exposure time (hours) | |
| | c) IF repiratory protection was worn, determine protection factor: | c) IF respirator NOT worn, use protection factor of 1. |
| | 1) Refer to EPIP-4.05, Respirator Protection, Attachment 3, to determine protection factor | |
| | d) Determine actual concentration: $\frac{\text{Step 2.a}}{\text{Step 2.c}}$ = _____ uCi/ml | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 26. | (CONTINUED) | |
| | e) With data from Step 2.b and Step 2.d, use Attachment 2 to determine iodine dose committment | |
| | f) IF actual OR projected exposure will be GREATER THAN OR EQUAL TO 10 Rem Thyroid | f) IF Thyroid exposure is LESS THAN 10 Rem:<br>1) GO TO Step 27. |
| | 1) Request approval from Emergency Manager to administer radio-protective drugs | |
| | g) IF approval is granted: | |
| | 1) Initiate EPIP-5.07, Administration of Radio-protective Drugs | |
| | h) Supply of tablets is located in H.P. Office Emergency Kit | h) Alternate supply located at North Anna Power Station |
| 27. | ONSITE EVACUATION OF NON-ESSENTIAL PERSONNEL: | |
| | a) Determine with Dose Assessment Team Leader, the projected or actual exposure, onsite, from release of radioactive material | |
| | b) Determine direction of plume | |
| | c) Determine from Emergency Manager duration of release | |
| | d) IF actual or projected exposure onsite: | d) IF dose is LESS THAN evacuation limits |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 27. | (CONTINUED) | |
| | 1) GREATER THAN OR EQUAL TO 1 Rem Whole Body<br><br>AND/OR<br><br>2) GREATER THAN OR EQUAL TO 5 Rem Thyroid<br><br>AND<br><br>3) Plume is NOT in the direction of the evacuation route, continue with this instruction | OR<br><br>IF plume is in the direction of the evacuation route:<br><br>1) Consider sheltering of non-essential workers<br><br>AND<br><br>2) GO TO Step 28. |
| | e) Recommend evacuation of all non-essential personnel | |
| | f) Report recommendation to the Emergency Manager | |
| 28. | ASSESS EXPOSURE TO EMERGENCY RADIATION WORKERS: | |
| | a) Prior to entry into a High Radiation areas, access possible exposure levels | |
| | b) IF Whole Body exposure exceeds 10CFR20 quarterly<br><br>1) Initiate EPIP-4.04, Emergency Exposure<br><br>AND<br><br>2) Return to Step 29 | b) IF entry into high radiation area will NOT exceed exposure limits:<br><br>1) GO TO Step 29. |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.01 | RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE | 01 |
| | | PAGE 29 of 31 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 29. | DOSIMETRY FOR OFFSITE ASSISTANCE: | |
| | a) IF offsite assistance is required to mitigate emergency (fire and/or rescue squads) | a) IF offsite assistance is NOT required, GO TO Step 30. |
| | 1) Inform Radiation Protection Supervisor of arrival | |
| | 2) Request dosimetry to be supplied at Security Building prior to entrance onsite | |
| 30. | VERIFY EMERGENCY: | |
| | a) IF emergency condition still exists, continue with this instruction | a) IF Emergency Manager declares termination of emergency GO TO Step 31. |
| | b) Return to Step 17 and direct repetition: | |
| | 1) Survey(s) | |
| | AND/OR | |
| | 2) Radiological sampling | |
| | AND/OR | |
| | 3) Offsite dose assessment | |
| | c) Advise the Emergency Manager and the Radiation Protection Supervisor as to the increasing or decreasing trends of Emergency | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.01 | RADIOLOGICAL ASSESSMENT DIRECTOR CONTROLLING PROCEDURE | 01 |
| | | PAGE 30 of 31 |

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

31. EVENT TERMINATION:

a) Termination of emergency declared by Emergency Manager

1) Notify Radiation Protection Supervisor and Radiation Assessment Coordinator of termination of emergency

2) Evaluate further use of monitoring team(s) for data collection

b) Request review of recovery phase with the Emergency Manager and consider the following:

1) Access control to outside contaminated areas

2) Return to normal access control, areas throughout site

3) Assistance for decontamination effort, Health Physics support personnel and radwaste packaging and disposal

32. ADMINISTRATION:

a) Initiate replacement of procedure and/or emergency equipment if necessary

b) Forward completed procedure(s), release calculations and survey results to the Emergency Manager

33. TERMINATE EPIP-4.01:

a) COMPLETED BY:_____

DATE:_____

TIME:_____

END

NO 97887230
REV A

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | SOURCE TERM ASSESSMENT (With 4 Attachments) | 02 |
| | | PAGE 1 of 10 |

**PURPOSE**

Provide guidance and data to Dose Assessment Team to more accurately predict offsite releases.

**USER**

Dose Assessment Team Members.

**ENTRY CONDITIONS**

Upon activation of EPIP-4.03, Dose Assessment Controlling Procedure.

**REVISION RECORD**

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE:07-29-82 |
| REV. 01 | PAGE(S): | 1, 3, 4, 5, 6, Att. 1 Page 1 | DATE:03-03-83 |
| REV. 02 | PAGE(S): | 1 of 10 through 10 of 10 & Attachment 4 | DATE:SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| J M Cat | R F Saunders | SEP 2 3 1983 |
| QC REVIEW: Richard Hughes | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | SOURCE TEAMS ASSESSMENT | 02 |
| | | PAGE 2 of 10 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE:<br>a) BY: _____<br>DATE: _____<br>TIME: _____ | |
| 2. | SOURCE TERM ASSESSMENT: | |
| | a) Source term based on monitor readings should be used:<br>1) Initial assessment<br>AND<br>2) Establish trends | |
| | b) IF the source term is from monitor readings, sampling should be done to more accurately determine the source term | |
| | c) Source term will have units of Ci/sec | |
| | d) Source term may be obtained from any of the following, in order of preference:<br>1) Sample of effluent - GO TO Step 4<br>OR<br>2) Sample of Station Inventory GO TO Step 6<br>OR | d) IF source term from containment - GO TO Step 2.e.<br>1) IF sample of effluent NOT available, GO TO Step 2.d.2.<br>OR<br>2) IF sample of station inventory NOT available, GO TO Step 2.d.3.<br>OR |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 2. | (CONTINUED) | |
| | 3) Station monitors GO TO Step 3 | 3) IF source term NOT thru the station monitors GO TO Step 2.e. |
| | e) IF event may produce releases from containment, source term may be obtained from any of the following, in order of preference | e) IF event is NOT a release from containment - GO TO Step 9. |
| | 1) Sample of Containment Air - GO TO Step 8 | 1) IF sample can NOT be obtained from containment - GO TO Step 2.e.2. |
| | 2) Containment High Range Monitor - GO TO Step 7 | |
| 3. | SOURCE TERM - STATION MONITORS: | |
| | a) Source term may be obtained from the following monitors:<br>1) Vent Vent VG-109<br>OR<br>2) Vent Vent (VG-131-2)<br>3) Process Vent GW-102<br>4) Process Vent (GW-130-2)<br>OR<br>5) Condensor Air Ejector SV-111, SV-211 | a) IF release pathway is thru the main steam system, GO TO Step 9. |
| | b) IF more than one effluent pathways involved:<br>1) Add results of all monitors for total release | b) Continue with this instruction |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 3. | (CONTINUED) | |
| | c) IF source term is from vent vent (VG-109), Process Vent (GW 102) or Condensor Air Ejector, obtain cpm, above background, from the Radiological Assessment Director | c) If source term is from vent vent (VG-131-2) or Process Vent (GW-130-2), obtain uCi/cc, for monitor of interest from Radiological Assessment Director. |
| | 1) Log date, time, monitor number and the net cpm on Attachment 1 | 1) Log date, time, monitor of interest and uCi/cc on Attachment 1 |
| | | 2) GO TO Step 3.d. |
| | d) IF Air Ejector NOT diverted to containment, continue with this instruction | d) IF Air Ejector IS diverted to containment, no release from this pathway will occur: |
| | | 1) GO TO Step 3.e. |
| | e) Obtain the flow rate (CFM) effluent pathway from Radiological Assessment Director | |
| | 1) Log on Attachment 1 | |
| | f) Obtain conversion factor for monitor of interest: | |
| | 1) VG-109: 1.19 E-11 | |
| | 2) VG-131-2 : 4.72E-4 | |
| | OR | |
| | 3) GW-102: 1.19 E-10 | |
| | 4) GW-130-2 : 472E-4 | |
| | OR | |
| | 5) SV-111,211:5.71 E-9 | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | SOURCE TEAMS ASSESSMENT | 02 |
| | | PAGE 5 of 10 |

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

3. (CONTINUED)

g) Perform following calculations to obtain Ci/sec (XE-133 Equivalent):

cpm(or uCi/cc) x CONVERSION FACTOR x CFM = Ci/sec

1) Log results on Attachment 1

h) GO TO Step 9

4. SOURCE TERM - SAMPLE EFFLUENTS:

a) Request Radiation Protection Supervisor to initiate EPIP-4.24, Gaseous Effluent Sampling During an Emergency, to obtain a sample:

a) IF sampling not required, GO TO Step 5.

1) Vent Vent

OR

2) Process Vent

OR

3) Condensor Air Ejector

b) IF more than one effluent pathway involved:

b) GO TO Step 4.c.

1) Add results of all monitors for total release

c) Have sample analyzed as per normal count room procedures OR initiate EPIP-4.26, High Level Activity Sample Analysis

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | SOURCE TEAMS ASSESSMENT | 02 |
| | | PAGE 6 of 10 |

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

4. (CONTINUED)

1) Log results of the analysis on Attachment 2

d) Perform calculations on Attachment 2 to obtain:

1) Equivalent activity I-131 AND Xe-133 (uCi/ml)

e) Obtain flow rate:

f) Calculate source term (Ci/sec):

EQUIVALENT ACTIVITY x CFM x 4.72E-4 = Ci/sec

5. CORRECT SOURCE TERM FOR MAXIMUM RELEASE:

a) IF sample from Step 4 was a grab sample and is NOT obtained at maximum release, correct for maximum release rate:

1) Obtain the maximum monitor reading

2) Obtain monitor reading at time of sample

3) Obtain source term from Step 4

4) Perform following calculation to obtain maximum release rate:

$$\frac{\text{Monitor Maximum (cpm or uCi/cc)}}{\text{Monitor Sample (cpm or uCi/cc)}} \times \text{Source Term} = \text{Maximum Ci/sec}$$

b) GO TO Step 9

a) IF sample was NOT a grab sample OR IF sample obtained at maximum release GO TO Step 9

1) IF monitor is offscale, GO TO Step 9.

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

6. SOURCE TERM - STATION INVENTORY:

a) IF release originated from gas storage tank (ie. Waste Gas Decay Tank, Volume Control Tank, etc.):

1) Request sampling the activity remaining in tank

2) Have sample analyzed by normal count room procedures OR initiate EPIP-4.26, High Level Activity Sample Analysis

3) Log activity on Attachment 2

b) Perform calculations on Attachment 2 to obtain:

1) Equivalent activity I-131 AND Xe-133

c) Determine volume of release from the following equation:

$$\text{VOLUME} = \frac{P_1 V_1 T_2}{T_1 P_2}$$

1) Obtain pressure prior to release from operations ($P_1$)

2) Obtain pressure after release from operations ($P_2$)

3) Obtain the design volume of the tank minus the water volume in the tank from operations

4) Obtain temperature prior to release from operations ($T_1$ = °F + 459)

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

6. (CONTINUED)

5) Obtain temperature after release from operations ($T_2$ = °F + 459)

d) Perform the following to determine source term:

$$\frac{2.83E\text{-}2 \times \text{VOLUME } (ft^3) \times \text{EQUIVALENT ACTIVITY}}{\text{TIME OF RELEASE (seconds)}} = \text{Ci/sec}$$

7. SOURCE TERM - CONTAINMENT HIGH RANGE MONITOR:

a) IF event - LOCA:

a) IF source term NOT from LOCA, GO TO Step 9.

1) Obtain the dose rate (mR/hr) of Containment High Range Monitor of affected unit, from Radiological Assessment Director

b) Obtain length of time (HOURS) after shutdown

c) Determine approximate extent of fuel damage using Attachment 3

1) Extrapolate, if necessary, to determine fuel damage

d) Use data from Step 7.b, Step 7.c and Attachment 4:

1) Determine equivalent curies I-131 and Xe-133

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

7. (CONTINUED)

e) IF containment effluent flow rate unkown, determine potential release rate:

Equivalent Curies x 3.39 E-8 = Ci/sec

e) IF containment effluent flow rate known, determine potential release rate:

Equivalent Curies x 9.29 E-9 = Ci/sec

f) GO TO Step 9

8. SOURCE TERM - CONTAINMENT SAMPLE:

a) IF event - LOCA:

1) Request Radiation Protection Supervisor initiate EPIP-4.22, Post Accident Sampling of Containment Air

a) IF event NOT LOCA, GO TO Step 9.

b) Convert results of analysis to equivalent activity (uCi/mL) of I-131 and XE-133, using Attachment 2

c) Determine potential release rate:

EQUIVALENT ACTIVITY x 1.73 E-3 = Ci/sec

9. RETURN TO CONTROLLING PROCEDURE:

a) Upon completion of this procedure, return to EPIP-4.03, Dose Assessment Controlling Procedure

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | SOURCE TEAMS ASSESSMENT | 02 |
| | | PAGE 10 of 10 |

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

10. TERMINATE EPIP-4.09:

a) Completed By: _____

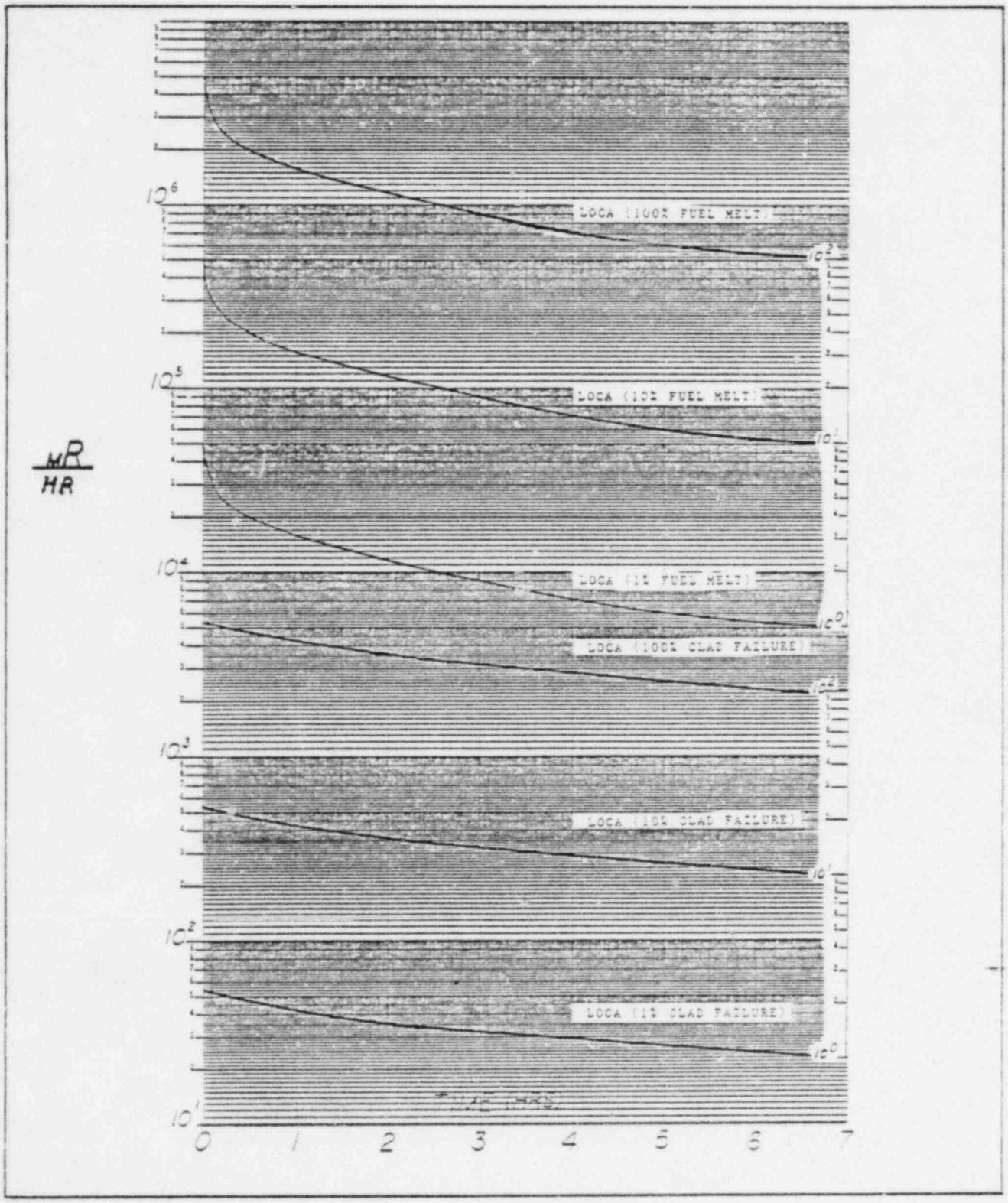
Date: _____

Time: _____

END

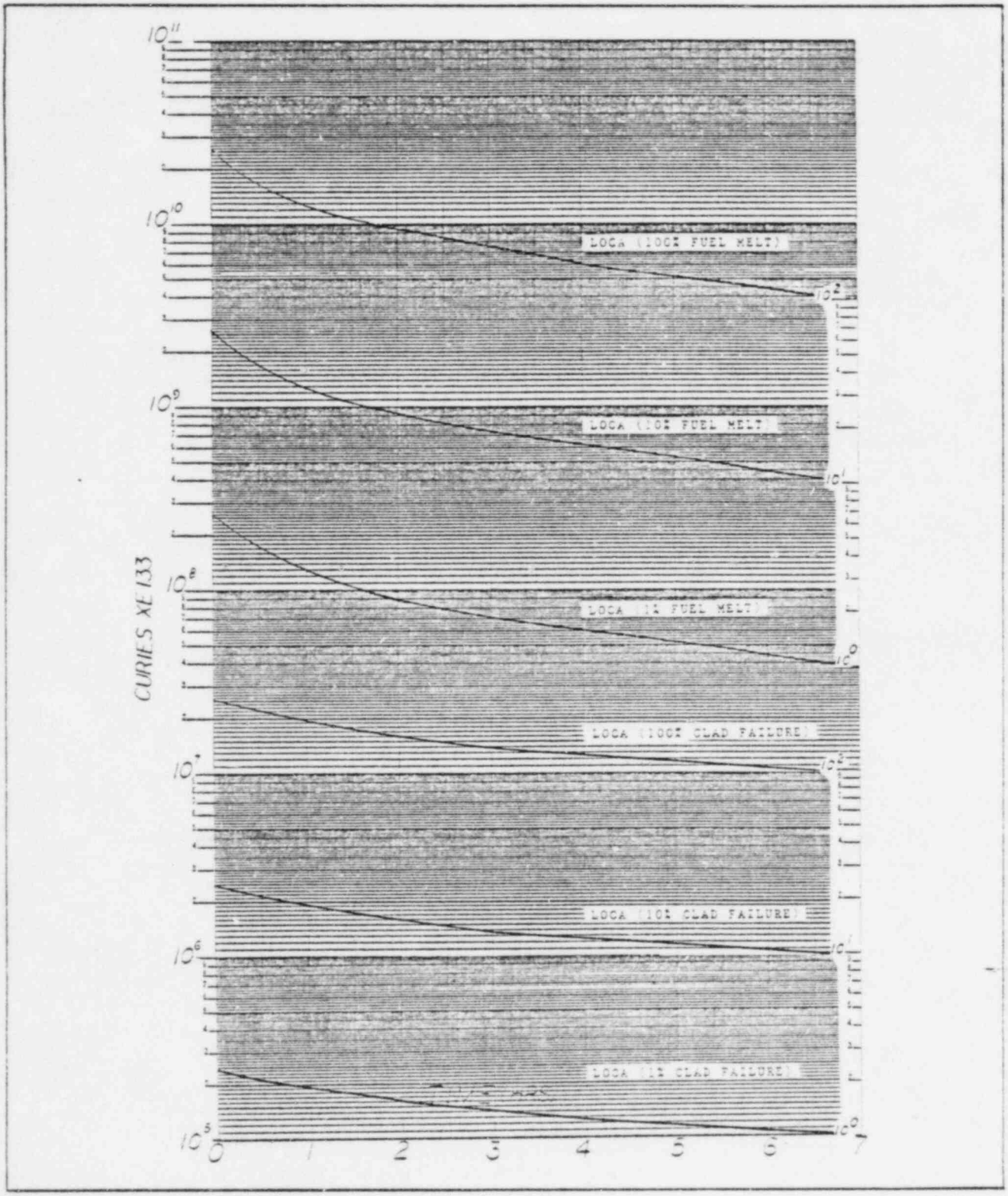
No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | CONTAINMENT HIGH RANGE MONITOR (PERSONNEL HATCH) | 02 |
| ATTACHMENT 4 | | PAGE 1 of 3 |



No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | EQUIVALENT CURIES XE-133 | 02 |
| ATTACHMENT 4 | | PAGE 2 of 3 |



| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.09 | EQUIVALENT CURIES I-131 FOR LOCA ACCIDENT | 02 |
| ATTACHMENT 4 | | PAGE 3 of 3 |

NOTE: Within the first 8 hours following LOCA incident, IODINE decay is insignificant.

| EVENT | EQUIVALENT CURIES I-131 |
|---|---|
| LOCA (1% Clad Failure) | 3.85 E+3 |
| LOCA (10% Clad Failure) | 3.85 E+4 |
| LOCA (100% Clad Failure) | 3.85 E+5 |
| LOCA (1% Fuel Melt) | 5.93 E+5 |
| LOCA (10% Fuel Melt) | 5.93 E+6 |
| LOCA (100% Fuel Melt) | 5.93 E+7 |

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTIONS (With 2 Attachments) | 02 |
| | | PAGE 1 of 8 |

**PURPOSE**

Provide guidance to the Dose Assessment Team to direct Offsite Monitoring Teams to:

1) Confirm radiological release
2) Track release
3) Determine radiological composition of release

**USER**

Dose Assessment Team Members.

**ENTRY CONDITIONS**

Any one of the following:

1. Release of radioactive materials with a SITE or GENERAL emergency condition and EOF is NOT activated.
2. Any other time which the Radiological Assessment Director deems it necessary.
3. Activation by another EPIP.

**REVISION RECORD**

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE: 07-29-82 |
| REV. 01 | PAGE(S): | Page 1, 6, and 7 | DATE: 02-24-83 |
| REV. 02 | PAGE(S): | 1 of 8 through 8 of 8 and Attachment 2 | DATE: SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| F. M. Bailey | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW: Richard Huckman | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTION | 02 |
| | | PAGE 2 of 8 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE:<br><br>a) BY: _____<br><br>DATE: _____<br><br>TIME: _____ | |
| 2. | ACTIVATION UPON SITE OR GENERAL EMERGENCY:<br><br>a) The procedure applicable upon radioactive release and declaration of SITE or GENERAL emergency<br><br>OR<br><br>Whenever Radiological Assessment Director deems necessary<br><br>AND<br><br>The EOF is NOT manned | a) IF EOF is activated and monitoring teams in the field:<br><br>1) Brief Radiological Assessment Coordinator as to the current location of the monitoring teams and data received<br><br>2) Inform Monitoring Teams to receive instructions and report data to the Radiological Assessment Coordinator at the EOF.<br><br>3) GO TO Step 13. |
| 3. | REVIEW PROJECTED DATA:<br><br>a) Review the projected release data<br><br>b) Obtain from the Radiological Assessment Director the current meteorological conditions: | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTION | 02 |
| | | PAGE 3 of 8 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 3. | (CONTINUED) | |
| | 1) Wind speed | |
| | 2) Wind direction | |
| | 3) Stability class | |
| 4. | ASSESS MONITORING NEEDS: | |
| | a) Initially only one monitoring team may be available | |
| | b) Use first monitoring team to initially: | |
| | 1) Confirm release | |
| | 2) Confirm direction of plume | |
| | 3) Determine radiological composition | |
| | c) Minimum of two monitoring teams desirable: | |
| | 1) Locate one team near site and the other team in preselected monitoring location in downwind sector | |
| 5. | ESTABLISH RADIO CONTACT: | |
| | a) Initiate EPIP-4.19, Use of Radios for Health Physics Monitoring: | a) IF radio communications NOT able to be established: |
| | 1) Establish radio communication with team using radiophone | 1) Request assistance from Radiological Assessment Director |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTION | 02 |
| | | PAGE 4 of 8 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 5. | (CONTINUED) | |
| | | AND |
| | | 2) Dispatch teams, instructing them to use public telephone to relay results to the TSC |
| | b) Instruct team to report data to TSC, until instructed otherwise | |
| | c) Give teams TSC telephone number | |
| 6. | ESTABLISH MONITORING LOCATION: | |
| | a) Review Attachment 1 and 2 for for preselected monitoring locations around station | |
| | b) Place teams at preselected location in downwind sector | |
| | 1) Wind direction from Step 3 indicates direction wind is coming from | |
| | c) Instruct teams to find plume centerline | |
| | AND | |
| | Report exact location once centering located | |

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

6. (CONTINUED)

   d) Monitoring can be identified using Attachment 1

      1) Location are specified by use of Sector designation and distance (miles)

         (i.e. distance of 2 miles North of plant: A-2)

7. CONFIRMATION:

   a) Direct first monitoring team to the sector, near site, which is affected by plume

   b) Obtain the following data and/or samples, if appropriate

      1) Exact location

      2) Maximum dose rate (mR/hr)

      3) Air sample - particulate, iodine and gas

      4) Soil sample

   c) Have initial confirmatory samples returned to Security Building

      1) Air sample should be immediately analyzed to determine Iodine/Noble Gas ratio

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTION | 02 |
| | | PAGE 6 of 8 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 7. | (CONTINUED) | |
| | d) GO TO Step 12 upon receipt of monitoring data | d) If monitoring data NOT available, continue. |
| | NOTE: Unexpected readings may result from plume rise, looping or cloud meander | |
| 8. | PLUME TRACKING: | |
| | a) Plume monitoring should continue, obtaining at a minimum, the dose rate at centerline of the plume<br><br>AND<br><br>Report exact location | |
| | b) IF unexpected reading occurs: | |
| | 1) Have team travel downwind a distance until plume is located | |
| 9. | FIXED ENVIRONMENTAL SAMPLERS AND TLD'S: | |
| | a) Fixed air samplers and TLD's provide good information on the TOTAL release. Collection of these samples may provide best information after termination of release | |

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

10. ADDITIONAL SAMPLING:

    a) Additional sampling for chronic exposure pathways is not normally within the scope of initial response

    b) Upon recovery phase of emergency, direct teams to obtain, as appropriate:

        1) Milk

        2) Water

        3) Crop samples

11. CONTINUE MONITORING:

    a) Continue Steps 7 thru 12 until:

        1) EOF MANNED, GO TO Step 2

        OR

        2) Release TERMINATED, GO TO Step 13

        OR

        3) IF monitoring data becomes available, GO TO Step 12.

12. ASSESS DATA:

    a) IF monitoring data becomes available:

        1) Initiate EPIP-4.13, Offsite Release Assessment with Environmental Data

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | OFFSITE ENVIRONMENTAL MONITORING INSTRUCTION | 02 |
| | | PAGE 8 of 8 |

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

13. TERMINATE EPIP-4.12:

a) COMPLETED BY: _____

DATE: _____

TIME: _____

END

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 1 of 3 |

| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 1. | B-2 | 2 miles North on Route 650 at Hog Island Air Sampling Station. |
| 2. | F-1.6 | Low level circulating water pumps at beginning of intake canal. |
| 3. | H-1.9 | 1.9 miles South on Route 650, left at road to public boat landing. Monitoring point 1 mile, under Vepco power lines. |
| 4. | J-2.0 | 2.0 miles South on Route 650; monitoring point at natural gas pipeline signs. |
| 5. | K-2.1 | Route 650 South, right on Route 617, right on Route 10, right on Route 634. Follow signs to Chippokes State Park, enter park and follow signs to historic section. Monitoring point at Chippokes Mansion. |
| 6. | L-2.3 | Route 650 South, right on Route 617, right on Route 10, right on Route 634. Follow signs to Chippokes State Park; enter park and follow signs to Historic section. Monitoring point located at intersection of road and College Run Creek. |
| 7. | H-5.5 | Rushmere Shores. South on Route 650, left on Route 628, left on Route 676. At bend in the road, bear right on Route 686, left on Route 2001 into Rushmere Shores. |
| 8. | J-5 | Route 650 South, left on Route 628. Monitoring point 1.2 miles from intersection of Routes 650 and 628. (Remote Assembly Area). |

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 2 of 3 |

| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 9. | K-5 | Route 650 South, right on Route 10. Monitoring point ¼ mile from intersection of Routes 10 and 650 at bend in road. |
| 10. | L-5 | Route 650 South, right on Route 617, right on Route 10, right on Route 633. Monitoring point ½ North on Route 633. |
| 11. | M-5 | Route 650 South, right on Route 617, right on Route 10 for approximately 5 miles, right on Route 634. Monitoring point 1.3 miles from intersection of Routes 634 and 10. Alliance Air Sampling Station, intersection of Routes 634 and 662. |
| 12. | N-4 | From location 11, monitoring point 2 miles North on Route 662. |
| 13. | P-5 | Scotland Wharf. Surry side on James River Ferry on Route 31 North. |
| 14. | Q-5 | James River Ferry to Jamestown Route 31, right on Route 359. Follow signs to Colonial Parkway, left on Colonial Parkway. Monitoring location 1¼ mile on Colonial Parkway. |
| 15. | R-5 | James River Ferry to Jamestown side, Route 31 East, right on Route 682 "Neck of Land Road", left on Lake Powell Road, 1.3 miles to intersection of Routes 617 and 618. |
| 16. | A-5 | James River Ferry, Route 31 East, right on Route 359, follow signs to Colonial Parkway, left on Parkway. Monitoring point 6.5 miles, ¼ mile past Halfway Creek. |

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.12 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 3 of 3 |

| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 17. | B-5 | Take Colonial Parkway from Jamestown, 7 miles to Route 199 East, Route 60 East, 3 lights, right on Kingsmill Road. Monitoring location 1 mile from Route 60 and Kingsmill Road intersection. |
| 18. | C-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East, Route 60 East, 3½ miles to Ron Springs Road (road prior to Carter's Grove), right on Log Cabin Beach Road to sewage treatment plant. |
| 19. | D-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East, Route 60 East, past Carter's Grove to Badische Corporation, right 1 mile to Vepco Substation. |
| 20. | E-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East. Take Route 60 East to Fort Eustis. Right at Fort Eustis, right at Lee Blvd., right on Kerr Road. Monitoring point located at load dock. |
| 21. | F-4.8 | Take Colonial Parkway from Jamestown, 7 miles to 199 East. Take Route 60 East to Fort Eustis, right at Fort Eustis, right at Taylor Road, left on Harrison Road. Monitoring location 0.6 miles South from intersection of Harrison Road and Back River Road. |

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA (With 5 Attachments) | 01 |
| | | PAGE 1 of 9 |

**PURPOSE**

Confirm onsite dose projections, using Environmental Monitoring data.

**USER**

Radiological Assessment Director or Members of Dose Assessment Team.

**ENTRY CONDITIONS**

Any of the following:

1) Activation by EPIP-4.03, Dose Assessment Controlling Procedure;

OR

2) Activation by EPIP-4.12, Offsite Environmental Monitoring Instructions.

**REVISION RECORD**

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE: 07-29-82 |
| REV. 01 | PAGE(S): | 1 of 9 thru 9 of 9; Att. 3 pg. 1; Att. 5 | DATE: SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| F. M. Cox | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW: Richard Huebner | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA | 01 |
| | | PAGE 2 of 9 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE:<br>a) Initiated By:_____<br>Date:_____<br>Time:_____ | |
| 2. | USE OF ENVIRONMENTAL DATA: | |
| | a) IF environmental data used to confirm dose projections:<br>1) GO TO Step 3 | a) IF environmental data to be used to determine Ci/sec release rate:<br>1) GO TO Step 2.b |
| | b) IF onsite release data from monitors and/or sample analysis NOT available:<br>1) Use Environmental data to determine Source Term (Ci/sec)<br>AND<br>2) GO TO Step 8 | b) IF onsite release data from monitors and/or sample analysis IS available:<br>1) Do NOT estimate Source Term from environmental data<br>AND<br>2) GO TO Step 12. |
| 3. | CONFIRM DOSE PROJECTIONS:<br>a) Use offsite dose rate measurement to confirm projected dose rate<br>OR | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA | 01 |
| | | PAGE 3 of 9 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 3. | (CONTINUED) | |
| | Establish real time dose rate offsite | |
| | b) Insure measurements OR samples are taken at centerline of plume | |
| | c) Dose rate may be obtained from: | |
| | 1) Direct Measurements | |
| | OR | |
| | 2) Sample Analysis Data | |
| 4. | DETERMINE WHOLE BODY DOSE FROM DIRECT RADIATION READINGS: | |
| | a) Obtain from monitoring team centerline dose rate | a) IF dose rates NOT from centerline: |
| | | 1) GO TO Step 6 |
| | b) Log date, time, location and dose rate on Attachment 1 | |
| 5. | DETERMINE THYROID OFFSITE DOSE RATE FROM SAMPLE ANALYSIS: | |
| | a) Determine centerline thyroid dose rate from air sample analysis | a) IF data from air sample is NOT yet available. GO TO Step 12 |
| | | OR |
| | | IF sample NOT from centerline, continue with this instruction |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 5. | (CONTINUED) . | |
| | b) If sample analysis given in counts per minute: | b) IF sample data is given in uCi/ml: |
| | 1) Obtain background count rate (cpm) and volume ($ft^3$) from monitoring team(s) | 1) GO TO Step 5.c. |
| | 2) Determine the net counts per minute: | |
| | SAMPLE (cpm) - BACKGROUND (cpm) = NET (cpm) | |
| | 3) Determine from Attachment 5, the conversion factor vs. volume | |
| | 4) Determine activity: | |
| | NET (cpm) x Conversion Factor = Activity (µCi/ml) | |
| | c) Determine Thyroid dose rate: | |
| | ACTIVITY (uCi/ml) x 1.85 E+9 = MR/HR | |
| | d) IF sample taken at centerline: | d) IF sample taken off-centerline, GO TO Step 6 |
| | 1) Log date, time, location and dose rate on Attachment 1 | |
| 6. | OFF-CENTERLINE DOSE RATES: | |
| | a) IF dose rates from Step 4 and Step 5 were taken off-centerline | a) IF dose rates from Step 4 and Step 5 are taken from centerline, GO TO Step 7. |
| | 1) Initiate EPIP-4.10, Determination of X/Q | |

6. (CONTINUED)

2) Determine centerline X/Q perpendicular to sample location

3) Determine X/Q of the sample location

AND

4) Return to Step 6.b of this procedure

b) Determine centerline dose rate:

$$\frac{\text{X/Q (CENTERLINE)} \times \text{DOSE RATE (MR/HR)}}{\text{X/Q (SAMPLE LOCATION)}} = \text{DOSE RATE (MR/HR) CENTERLINE}$$

c) Log date, time, location and dose rate on Attachment 1

1) Note in the remarks column that the sample was taken off centerline

7. TRANSMIT DATA:

a) Upon completion of Attachment 1:

1) Relay the Attachment to the Dose Assessment Team Leader.

AND

2) GO TO Step 12

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 8. | DETERMINE SOURCE TERM: (Ci/sec) | |
| | a) Use offsite data to determine the Source Term (Ci/sec) of the release | a) If Source Term data is NOT required, GO TO Step 12. |
| | b) Insure measurements or samples taken are from the centerline of the plume | b) If data is NOT from the centerline of the plume:<br>1) GO TO Step 6 to estimate centerline data<br>AND<br>2) Return to Step 8.c. |
| | c) Source Term may be estimated by:<br>1) Direct Measurements, GO TO Step 9<br>OR<br>2) Sample Analysis Data, GO TO Step 10 | |
| 9. | DETERMINE SOURCE TERM FROM DIRECT MEASUREMENTS: | |
| | a) Obtain centerline dose rate measurements from Step 8<br>1) Log location, time and dose rate on Attachment 2<br>AND<br>2) Obtain the current wind speed and stability class | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA | 01 |
| | | PAGE 7 of 9 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 9. | (CONTINUED) | |
| | b) Determine the conversion factor: | |
| | 1) IF measurements taken at preselected monitoring points, determine factor from Attachment 3 | 1) IF measurements are NOT at preselected monitoring points, determine from Attachment 4 |
| | c) Determine source term: | |
| | MR/HR x 2.38 E-5 x WIND SPEED x CONVERSION FACTOR = Ci/sec | |
| | d) Log results on Attachment 2 | |
| 10. | DETERMINE SOURCE TERM FROM SAMPLE ANALYSIS: | |
| | a) Insure sample data is from centerline of the plume | a) If sample data is not from centerline of plume: |
| | | 1) GO TO Step 6 to estimate centerline data (use (uCi/ml) instead of data rate) |
| | | AND |
| | | 2) Return to Step 10.b. |
| | b) Obtain uCi/ml measurements at sample location: | b) IF sample data received in counts per minute: |
| | 1) Log location, time, and activity on Attachment 2 | 1) GO TO Step 5 |
| | 2) Obtain the current wind speed and stability class from Dose Assessment Team Leader | 2) Determine activity (uCi/ml) |
| | | 3) Return to Step 10.b. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 10. | (CONTINUED) | |
| | c) IF sample from preselected points, Obtain the conversion factor from Attachment 3, | c) IF sample not from preselected point, obtain conversion factor from Attachment 4. |
| | d) Determine the source term: | |
| | ACTIVITY x WIND SPEED x CONVERSION FACTOR = Ci/sec | |
| | a) Upon completion of Attachment 2 | |
| | 1) Inform Dose Assessment Team Leader of results | |
| 11. | TRANSMIT DATA: | |
| | a) Upon completion of Attachment 2 | |
| | 1) Inform Dose Assessment Team Leader of results | |
| 12. | CONTINUED ASSESSMENT: | |
| | a) IF monitoring teams are to be relocated: | a) IF teams are to remain in the same location: |
| | 1) GO TO Step 14 to terminate this procedure | 1) GO TO Step 12.b. |
| | AND | |
| | 2) Initiate EPIP-4.12, Offsite Monitoring Instruction | |
| | b) IF EOF NOT activated | b) IF emergency has terminated |
| | OR | OR |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | OFFSITE RELEASE ASSESSMENT WITH ENVIRONMENTAL DATA | 01 |
| | | PAGE 9 of 9 |

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

12. (CONTINUED)

IF release NOT terminated:

1) Return to Step 3 and repeat assessment when data received

IF EOF activated:

1) GO TO Step 13.

13. ADMINISTRATION:

a) Return all procedures and Offsite data to the Radiological Assessment Director

14. TERMINATE EPIP-4.13:

a) COMPLETED BY:_____

DATE:_____

TIME:_____

END

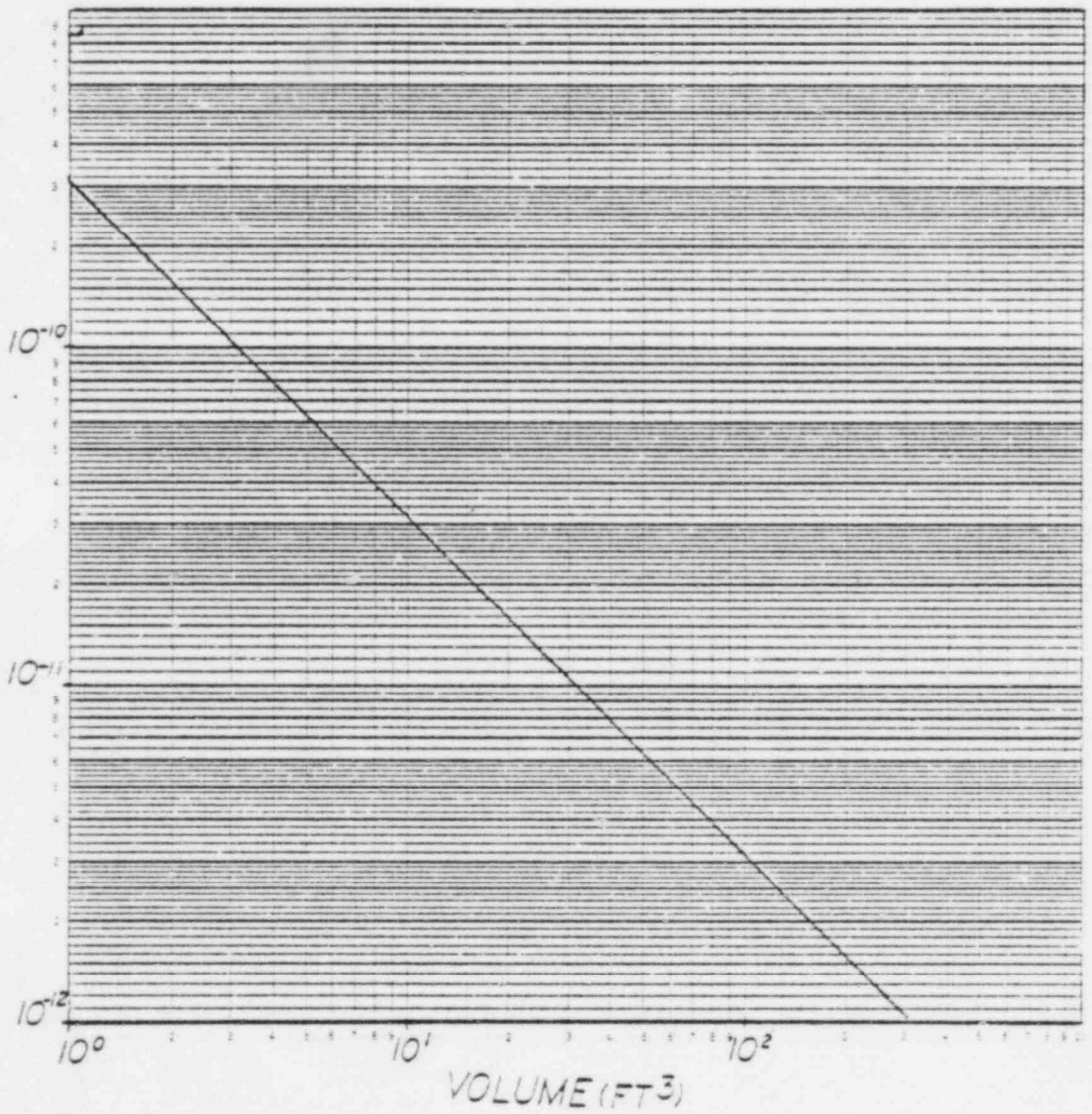
No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | FACTORS FOR PRESELECTED MONITORING LOCATIONS | 00 |
| ATTACHMENT 3 | | PAGE 1 of 1 |

| LOCA | SECT | DIST | STABILITY CLASS A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|---|
| 1 | B - | 2 | 1.51E6 | 5.55E5 | 7.14E4 | 2.08E4 | 1.00E4 | 4.17E3 | 1.72E3 |
| 2 | F - | 1.6 | 1.26E6 | 3.08E5 | 5.13E4 | 1.50E4 | 6.90E3 | 3.17E3 | 1.35E3 |
| 3 | H - | 1.9 | 1.50E6 | 5.50E5 | 7.10E4 | 2.00E4 | 1.00E4 | 4.10E3 | 1.60E3 |
| 4 | J - | 2.0 | 1.51E6 | 5.55E5 | 7.14E4 | 2.08E4 | 1.00E4 | 4.17E3 | 1.72E3 |
| 5 | K - | 2.1 | 1.60E6 | 6.62E5 | 8.00E4 | 2.27E4 | 1.06E4 | 4.54E3 | 1.85E3 |
| 6 | L - | 2.3 | 1.70E6 | 1.32E6 | 1.27E5 | 3.45E4 | 1.51E4 | 6.66E3 | 2.56E3 |
| 7 | H - | 5.5 | 3.85E6 | 2.86E6 | 4.00E5 | 1.00E5 | 3.85E4 | 1.64E4 | 6.24E3 |
| 8 | J - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 9 | K - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 10 | L - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 11 | M - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 12 | N - | 4 | 2.86E6 | 2.13E6 | 2.38E5 | 5.88E4 | 2.50E4 | 1.07E4 | 4.00E3 |
| 13 | P - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 14 | Q - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 15 | R - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 16 | A - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 17 | B - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 18 | C - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 19 | D - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 20 | E - | 5 | 3.45E6 | 2.63E6 | 3.45E5 | 8.33E4 | 3.45E4 | 1.43E4 | 5.26E3 |
| 21 | F - | 4.8 | 3.33E6 | 2.50E6 | 3.13E5 | 7.70E4 | 3.13E4 | 1.35E4 | 5.00E3 |

No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.13 | RM-14 CONVERSION FACTOR | 01 |
| ATTACHMENT 5 | | PAGE 1 of 1 |



NO 97887230
REV A

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.15 | ONSITE MONITORING<br>(With 3 Attachments) | 02<br>PAGE<br>1 of 9 |

**PURPOSE**

Confirm initial offsite releases and provide surveys for personnel protection program onsite.

**USER**

Onsite Monitoring Team Member

**ENTRY CONDITIONS**

Any one of the following conditions:

1. ALERT, SITE or GENERAL emergency.
2. Activation by another EPIP.

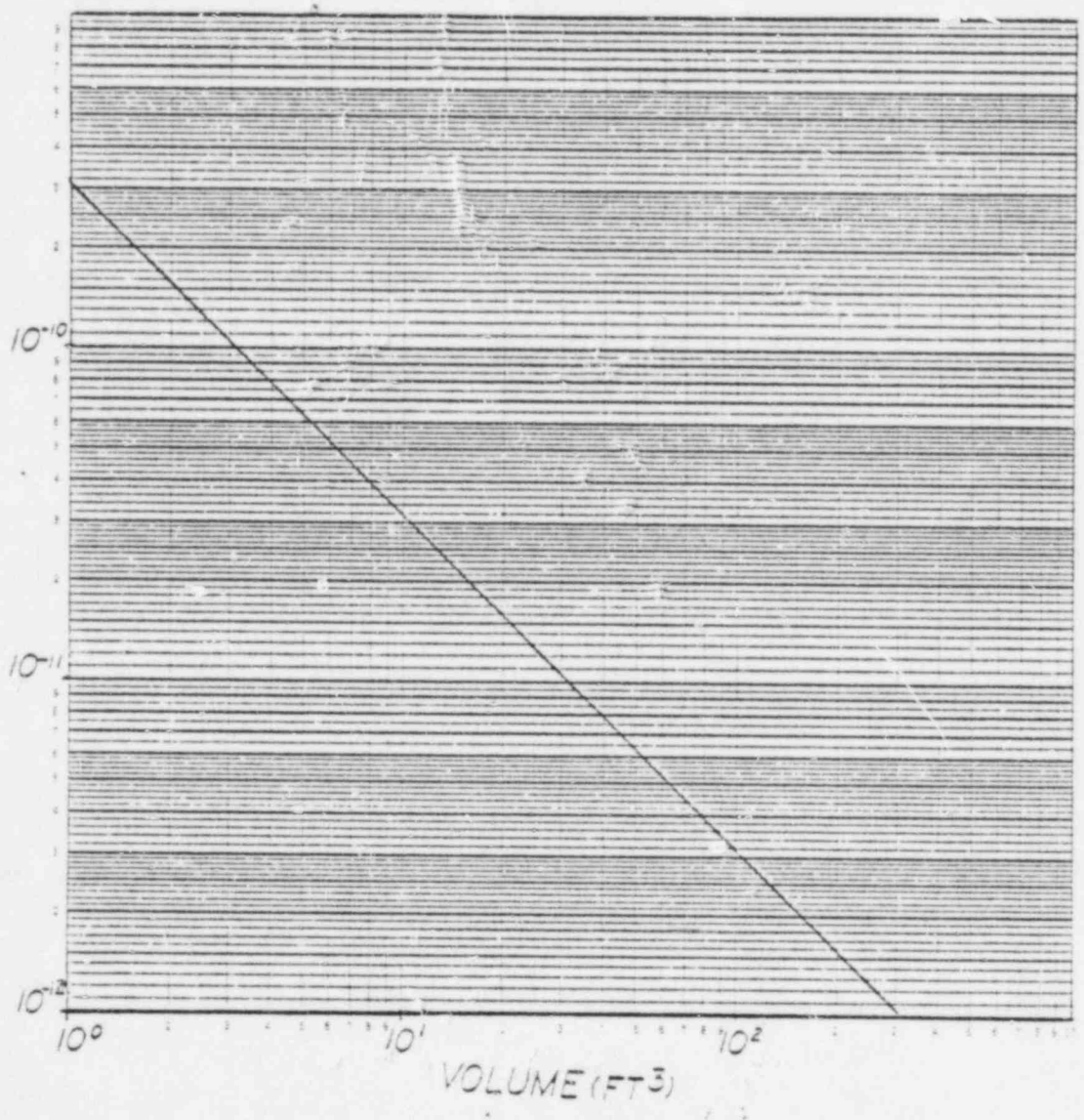
**REVISION RECORD**

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE:07-29-82 |
| REV. 01 | PAGE(S): | 1, 3, 4, 5, 7, 8, Att. 2 p.1, Att. 3 p.1 | DATE:02-24-83 |
| REV. 02 | PAGE(S): | Page 1 of 9 and Attachment 3 page 1 of 1 | DATE:SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| F M Cay | R F Saunders | SEP 2 3 1983 |
| QC REVIEW<br>Richard Hudson | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.15 | RM-14 CONVERSION FACTOR | 02 |
| ATTACHMENT 3 | | PAGE 1 of 1 |



NO 97887230
REV A

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING<br>(With 4 Attachments) | 01<br>PAGE<br>1 of 12 |

**PURPOSE**

Provide guidance for offsite monitoring teams in obtaining equipment, tracking plume, taking samples and transmitting data.

**USER**

Offsite Monitoring Team members.

**ENTRY CONDITIONS**

Initiation by EPIP-4.02, Radiation Protection Supervisor Controlling Procedure.

**REVISION RECORD**

| | | |
|---|---|---|
| REV. 00 | PAGE(S): Entire Procedure | DATE:07-29-82 |
| REV. 01 | PAGE(S): 1, 2, 3, 4, 7, 8, 9, Att. 4 p.1 | DATE:02-24-83 |
| REV. 02 | PAGE(S): 1 of 12 thru 12 of 12; Att. 2; & Att. 4 | DATE:SEP 2 3 1983 |
| REV. | PAGE(S): | DATE: |
| REV. | PAGE(S): | DATE: |
| REV. | PAGE(S): | DATE: |
| REV. | PAGE(S): | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| F. M. Coy | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW<br>Richard Huebner | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 2 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE: | |
| | a) BY: _____ | |
| | DATE: _____ | |
| | TIME: _____ | |
| 2. | TEAM ASSIGNMENT: | |
| | a) Offsite monitoring team shall consist of two individuals: | |
| | 1) Only one need be a H.P. technician | |
| 3. | REQUEST BRIEFING: | |
| | a) Request briefing with the Radiation Protection Supervisor as to the following: | |
| | 1) Required monitoring locations | 1) IF no location OR survey requirements given, proceed to security building and await instructions. |
| | 2) Samples and surveys required | |
| | 3) Anticipated radiation levels | |
| | 4) Protective clothing and dosimetry and/or respiratory gear required | |
| | b) Obtain information on who to report survey data to: | |
| | 1) TSC | |
| | OR | |
| | 2) EOF | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 3 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 4. | OBTAIN VEHICLE: | |
| | a) Health Physics truck will be used as primary transportation for Offsite Teams | a) Request assistance from Radiation Protection Supervisor or Radiological Assessment Director in obtaining vehicles. |
| | b) Insure vehicle has at least 1/4 tank of gas | |
| 5. | OBTAIN MONITORING KIT: | |
| | a) Obtain a monitoring kit specified by Radiation Protection Supervisor | |
| | b) Obtain additional equipment from H.P. Office: | b) Additional equipment available at HP instrument repair shop. |
| | 1) Battery powered air sampler | |
| | 2) RM-14 with H.P. 210 probe | |
| | 3) Package of silver zeolite cartridges and particulate filters | |
| 6. | PERFORM INSTRUMENT CHECK: | |
| | a) Perform operability check: | |
| | 1) Battery check | |
| | 2) Current calibration sticker | |
| 7. | PROCEED TO MONITORING LOCATION: | |
| | a) Obtain and don protective clothing, dosimetry, and respiratory gear as specified in Step 3 | a) IF no gear is specified, continue with this instruction. |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 7. | (CONTINUED) | |
| | b) Use Attachment 1 and 2 to determine:<br><br>1) Initial location<br><br>OR<br><br>2) Location specified by personnel in TSC (EOF) | |
| | c) Proceed to monitoring location specified in Step 3 | c) IF no monitoring location specified:<br><br>1) Report to Security Building<br><br>AND<br><br>2) Await further instructions. |
| 8. | ESTABLISH RADIO CONTACT: | |
| | a) Initial radio communication will be with emergency response personnel in the TSC | |
| | b) IF EOF is activated, radio communication will be with EOF | |
| | c) Establish radio communication with the TSC or EOF by initiation of EPIP-4.19, Use of Radios for Health Physics Monitoring<br><br>1) To transmit:<br><br>"Mobile (Number of Vehicle) to TSC (HP-2) or EOF (HP-3). Our location is _____" | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 8. | (CONTINUED)<br><br>2) Request telephone number of emergency center and use in case of radio failure | |
| | NOTE: Survey reading should increase as you approach center of the plume, then decrease once past centerline. | |
| 9. | PLUME TRACKING: | |
| | a) IF directed to locate plume:<br><br>1) Proceed to location specified by TSC or EOF | a) GO TO Step 10. |
| | b) Obtain portable survey instrument from emergency kit:<br><br>1) Open beta window | |
| | c) Traverse the plume in a crosswind direction:<br><br>1) Hold survey meter out of window<br><br>AND<br><br>2) Observe readings | c) IF NO readings are observed, notify TSC (or EOF).<br><br>1) Request advice on relocation<br><br>AND<br><br>2) Return to Step 9.c. |
| | d) Traverse plume several times until maximum point (centerline of plume) is located | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 6 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 9. | (CONTINUED) | |
| | e) Close beta window: | |
| | 1) Observe readings | |
| | f) Log on Attachment 3: | |
| | 1) mR/hr | |
| | 2) Location | |
| | 3) Date | |
| | 4) Time | |
| | 5) Instrument used and serial number | |
| | g) Inform TSC (or EOF) of monitor readings and location | |
| | h) Relocate to an area outside the plume: | h) IF further monitoring required, stay within the plume until complete. |
| | 1) Await further instructions | |
| 10. | NOBLE GAS SAMPLING: | |
| | a) IF noble gas sample requested, go to the centerline of plume | a) IF noble gas sample is NOT requested, GO TO Step 11. |
| | OR | |
| | Location specified by TSC (or EOF) | |
| | b) Obtain a 100 cc gas bomb from emergency kit | b) IF gas chamber NOT available, request gas chambers be prepared and brought to the survey team. |
| | 1) Remove top and wave chamber in air | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 10. | (CONTINUED) | |
| | 2) Ensure petcocks are closed and replace top | |
| | 3) Place chamber in plastic bag and label with date, time and location | |
| | c) Log information in Step 10.b.3 on Attachment 3 | |
| 11. | PARTICULATE AND IODINE SAMPLE: | |
| | a) IF particulate and/or iodine sample required: | a) IF sample NOT required, GO TO Step 12. |
| | 1) Obtain battery powered air sampler | |
| | 2) Load samples with particulate filter and silver zeolite cartridge | |
| | b) IF sample required during high humidity: | b) Continue with Step 11.c. |
| | 1) Shelter sample from moisture | |
| | 2) Report weather conditions to TSC or EOF | |
| | NOTE: Sample volume should be lessened when sampling high activity airborne concentrations | |
| | c) Obtain an approximate 10 $ft^3$ air sample | |

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

11. (CONTINUED)

1) Connect cables to vehicle battery terminal

2) Turn on air sampler

3) Disconnect cables after sample volume collected

4) Log sample volume on Attachment 3

d) Place iodine cartridge and particulate filter in a plastic bag and label:

1) Date

2) Time

3) Volume

4) Location

e) Log information in Step 11.d on Attachment 3

NOTE: Air sample must have been taken using silver zeolite cartridge to use this method for analysis.

12. ACTIVITY DETERMINATION:

a) IF air sample analysis required:

1) Proceed to a low background area

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 9 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 12. | (CONTINUED) | |
| | b) Turn on RM-14 (frisker)<br><br>1) Obtain a background count rate (cpm) | |
| | c) Hold silver zeolite cartridge one-quarter inch from detector, with influent side of cartridge facing the detector | |
| | d) IF gross count rate on scale, continue | d) IF gross count rate off scale:<br><br>1) Return to Step 11<br><br>AND<br><br>2) Obtain a smaller sample volume |
| | e) Determine net count rate:<br><br>GROSS (cpm) - BACKGROUND (cpm) = NET (cpm) | |
| | f) Determine from Attachment 4 the conversion factor for specific sample volume. | |
| | g) Determine activity:<br><br>NET (cpm) x Conversion Factor = ACTIVITY (uCi/ml) | |
| | h) Log on Attachment 3:<br><br>1) Date<br><br>2) Time | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 10 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 12. | (CONTINUED) | |
| | 3) Location | |
| | 4) Activity | |
| | i) Place sample in poly bag and label: | |
| | 1) Date<br>2) Time | |
| | 3) Volume | |
| | 4) Location | |
| 13. | SOIL DEPOSITION: | |
| | a) IF soil sample IS requested: | a) IF soil sample NOT requested, GO TO Step 14. |
| | 1) Obtain a sample by marking off an approximate one square foot area | |
| | 2) Remove top 1/4 to 1/2 inch layer of soil | |
| | 3) Place soil in a clean poly bag | |
| | b) Label sample with: | |
| | 1) Date | |
| | 2) Time | |
| | 3) Location | |
| | c) Save sample for lab analysis | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 11 of 12 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 14. | TRANSMIT DATA: | |
| | a) Transmit results of all surveys OR sample analysis to TSC (or EOF), as soon as possible | |
| 15. | LABORATORY ANALYSIS OF SAMPLES: | |
| | a) All samples will be saved for future analysis at laboratory facilities | |
| | b) Bag all samples in a clean poly bag | |
| | c) Insure samples are properly labeled | |
| | d) Return all samples to the Security Building, as requested<br><br>OR<br><br>As time and location permit | |
| 16. | CONTINUED SAMPLING: | |
| | a) IF TSC or EOF does NOT request return to station: | a) IF TSC or EOF requests return to station: |
| | 1) Return to Step 9 | 1) GO TO Step 17. |
| | 2) Repeat sampling and surveys as requested | |
| 17. | ADMINISTRATIVE: | |
| | a) All procedures and forms used for offsite monitoring should be returned to the Radiological Assessment Director at TSC or the Radiological Assessment Coordinator at EOF | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | OFFSITE MONITORING | 02 |
| | | PAGE 12 of 12 |

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

18. TERMINATE EPIP-4.16:

a) COMPLETED BY: _____

DATE: _____

TIME: _____

END

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 1 of 3 |

| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 1. | B-2 | 2 miles North on Route 650 at Hog Island Air Sampling Station. |
| 2. | F-1.6 | Low level circulating water pumps at beginning of intake canal. |
| 3. | H-1.9 | 1.9 miles South on Route 650, left at road to public boat landing. Monitoring point 1 mile, under Vepco power lines. |
| 4. | J-2.0 | 2.0 miles South on Route 650; monitoring point at natural gas pipeline signs. |
| 5. | K-2.1 | Route 650 South, right on Route 617, right on Route 10, right on Route 634. Follow signs to Chippokes State Park, enter park and follow signs to historic section. Monitoring point at Chippokes Mansion. |
| 6. | L-2.3 | Route 650 South, right on Route 617, right on Route 10, right on Route 634. Follow signs to Chippokes State Park; enter park and follow signs to Historic section. Monitoring point located at intersection of road and College Run Creek. |
| 7. | H-5.5 | Rushmere Shores. South on Route 650, left on Route 628, left on Route 676. At bend in the road, bear right on Route 686, left on Route 2001 into Rushmere Shores. |
| 8. | J-5 | Route 650 South, left on Route 628. Monitoring point 1.2 miles from intersection of Routes 650 and 628. (Remote Assembly Area). |

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 2 of 3 |

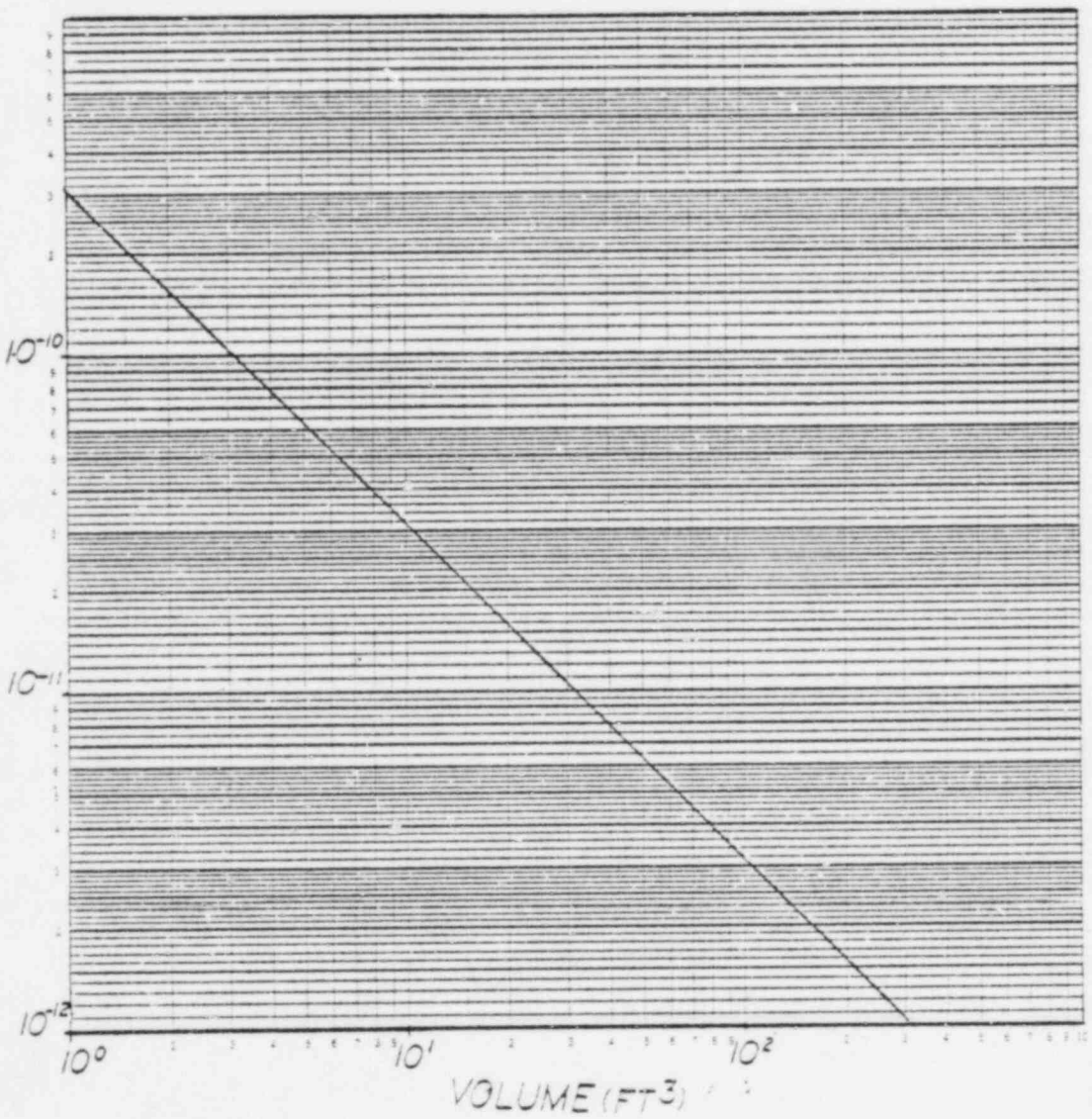
| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 9. | K-5 | Route 650 South, right on Route 10. Monitoring point ½ mile from intersection of Routes 10 and 650 at bend in road. |
| 10. | L-5 | Route 650 South, right on Route 617, right on Route 10, right on Route 633. Monitoring point ½ North on Route 633. |
| 11. | M-5 | Route 650 South, right on Route 617, right on Route 10 for approximately 5 miles, right on Route 634. Monitoring point 1.3 miles from intersection of Routes 634 and 10. Alliance Air Sampling Station, intersection of Routes 634 and 662. |
| 12. | N-4 | From location 11, monitoring point 2 miles North on Route 662. |
| 13. | P-5 | Scotland Wharf. Surry side on James River Ferry on Route 31 North. |
| 14. | Q-5 | James River Ferry to Jamestown Route 31, right on Route 359. Follow signs to Colonial Parkway, left on Colonial Parkway. Monitoring location 1½ mile on Colonial Parkway. |
| 15. | R-5 | James River Ferry to Jamestown side, Route 31 East, right on Route 682 "Neck of Land Road", left on Lake Powell Road, 1.3 miles to intersection of Routes 617 and 618. |
| 16. | A-5 | James River Ferry, Route 31 East, right on Route 359, follow signs to Colonial Parkway, left on Parkway. Monitoring point 6.5 miles, ½ mile past Halfway Creek. |

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | PRESELECTED MONITORING LOCATIONS | 02 |
| ATTACHMENT 2 | | PAGE 3 of 3 |

| LOCATION | SECTOR DISTANCE (mi) | DESCRIPTION |
|---|---|---|
| 17. | B-5 | Take Colonial Parkway from Jamestown, 7 miles to Route 199 East, Route 60 East, 3 lights, right on Kingsmill Road. Monitoring location 1 mile from Route 60 and Kingsmill Road intersection. |
| 18. | C-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East, Route 60 East, 3½ miles to Ron Springs Road (road prior to Carter's Grove), right on Log Cabin Beach Road to sewage treatment plant. |
| 19. | D-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East, Route 60 East, past Carter's Grove to Badische Corporation, right 1 mile to Vepco Substation. |
| 20. | E-5 | Take Colonial Parkway from Jamestown, 7 miles to 199 East. Take Route 60 East to Fort Eustis. Right at Fort Eustis, right at Lee Blvd., right on Kerr Road. Monitoring point located at load dock. |
| 21. | F-4.8 | Take Colonial Parkway from Jamestown, 7 miles to 199 East. Take Route 60 East to Fort Eustis, right at Fort Eustis, right at Taylor Road, left on Harrison Road. Monitoring location 0.6 miles South from intersection of Harrison Road and Back River Road. |

No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.16 | RM-14 CONVERSION FACTOR | 02 |
| ATTACHMENT 4 | | PAGE 1 of 1 |



VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.18 | MONITORING OF EOF<br>(With 4 Attachments) | 02<br>PAGE<br>1 of 8 |

**PURPOSE**

Provide Health Physics coverage for personnel manning the EOF.

**USER**

Member of Inplant Monitoring Team.

**ENTRY CONDITIONS**

Initiation of EPIP-4.02, Radiation Protection Supervisor Controlling Procedure;

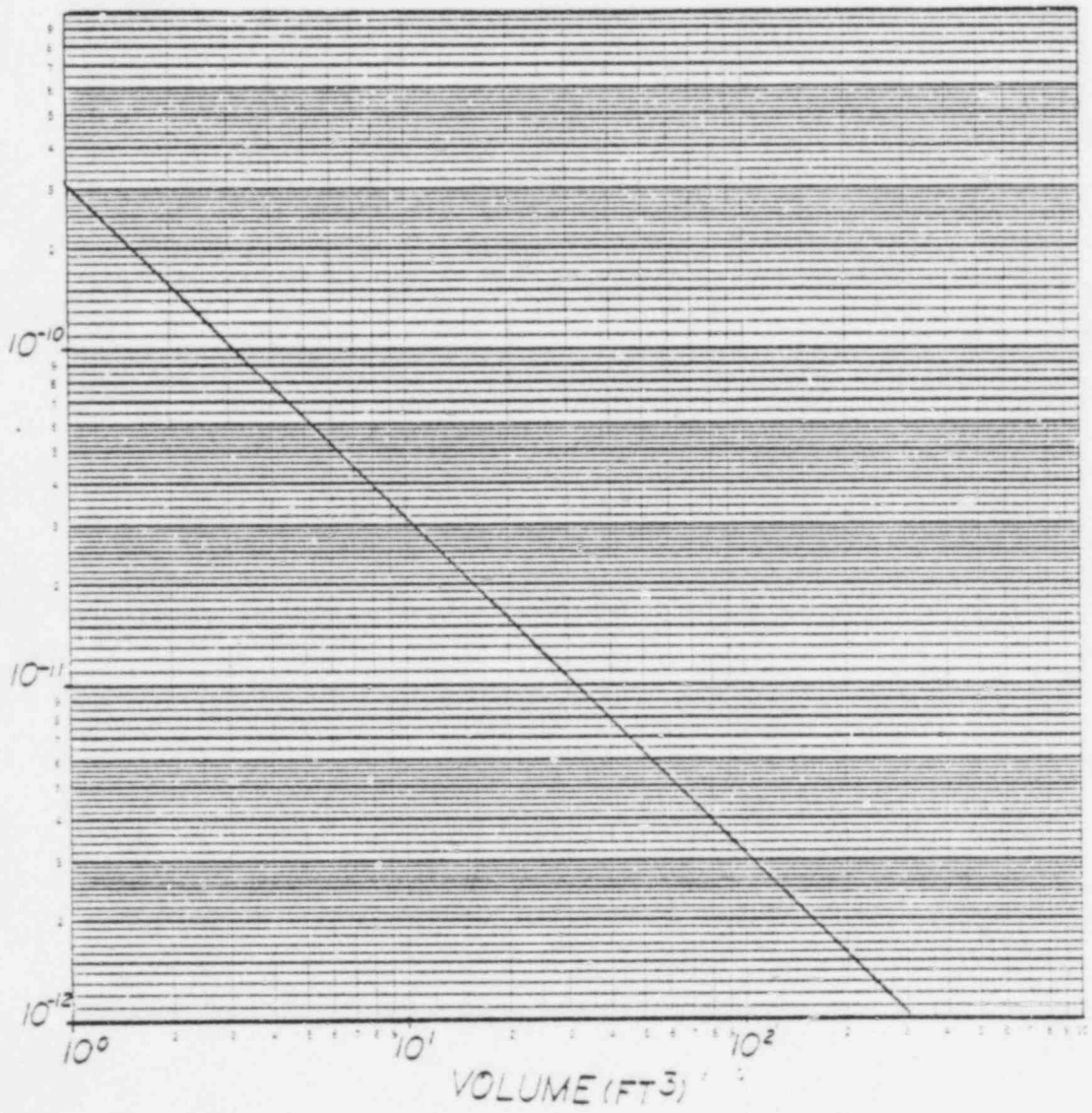
**REVISION RECORD**

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE:07-29-82 |
| REV. 01 | PAGE(S): | 1,4,5,6,7,8, Att. 3 page 1, Att. 4 Page 1 | DATE:02-24-83 |
| REV. 02 | PAGE(S): | Page 1 of 8 and Attachment 3 | DATE:SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| J. M. Coy | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW<br>Richard Huebner | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

No. 97887220

| NUMBER | ATTACHMENT TITLE | REVISION |
|---|---|---|
| EPIP-4.18 | RM-14 CONVERSION FACTOR | 02 |
| ATTACHMENT 3 | | PAGE 1 of 1 |



VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURE

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT (With 1 Attachment) | 02 |
| | | PAGE 1 of 14 |

## PURPOSE

1. To collect a post accident sample of reactor coolant from the hot leg of Unit 1 OR Unit 2 Reactor Coolant Systems.

## USER

Chemistry Team Leader AND Chemistry Team Member.

## ENTRY CONDITIONS

1. Entry directed by Emergency Technical Director

OR

2. Entry directed by Station Emergency Manager

## REVISION RECORD

| | | | |
|---|---|---|---|
| REV. 00 | PAGE(S): | Entire Procedure | DATE:07-29-82 |
| REV. 01 | PAGE(S): | 1, 13, 14 | DATE:02-24-83 |
| REV. 02 | PAGE(S): | Pages 1 of 14 through 14 of 14 | DATE:SEP 2 3 1983 |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |
| REV. | PAGE(S): | | DATE: |

| APPROVAL RECOMMENDED | APPROVED | DATE |
|---|---|---|
| J. M. Cael | R. F. Saunders | SEP 2 3 1983 |
| QC REVIEW | CHAIRMAN STATION NUCLEAR SAFETY AND OPERATING COMMITTEE | |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 1. | INITIATE PROCEDURE:<br>a) By: _____<br>Date: _____<br>Time: _____ | |
| | NOTE: Only one reactor coolant sample may be obtained from this system. | |
| 2. | VERIFY STATION SYSTEMS: | |
| | a) Systems Operable<br>1) Station Service Electrical System per OP-26<br>2) Component Coolant System per OP-51<br>3) Compressed Air Service System per OP-46<br>4) Ventilation System per OP-21<br>5) Radiation Monitoring System per OP-56 | a) IF NOT operable, request operations assistance to insure system operability |
| 3. | DESIGNATE SAMPLING PARTY: | |
| | a) Chemistry team leaders<br>AND<br>b) Chemistry team members | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 3 of 14 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 4. | VERIFY RWP: | |
| | a) RWP issued | a) IF NOT issued, request initiation of RWP. |
| 5. | OBTAIN REQUIRED EQUIPMENT: | |
| | a) 2 adjustable wrenches | |
| | b) Extension wrench | |
| | c) Come-A-Long or equivalent | |
| | d) 5 gallon poly bottle | |
| | e) 10 ft. of 3/4" tygon tubing | |
| 6. | DRESS OUT: | |
| | a) Have sample party dress out IAW RWP | |
| 7. | OBTAIN SAMPLE ROOM RAD LEVEL: | |
| | a) RM-RMS-156, "Sample Area Monitor" | |
| 8. | BRIEF SAMPLING PARTY: | |
| | a) Review sampling procedure | |
| | b) Review entry and exit routes | |
| | c) Review RWP requirements | |
| | 1) Stay times<br>2) Protective clothing<br>3) Dosimetry<br>4) Respiratory equipment<br>5) H.P. monitoring | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT (With 1 Attachment) | 02 |
| | | PAGE 4 of 14 |

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

8. (CONTINUED)

   d) Review cautions

      1) High radiation levels
      2) High sample activity level
      3) High pressure sample
      4) High temperature sample
      5) Open valves slowly

9. NOTIFICATIONS:

   a) Notify Station Emergency Manager sampling party is being dispatched

      AND

      Notify Shift Supervisor sampling party is being dispatched

10. DISPATCH SAMPLE TEAM:

    a) Insure sample party has a copy of this procedure

    NOTE: Refer to attachment 1 for system arrangement

11. PROCEED TO PRIMARY SAMPLE ROOM:

    a) Monitor radiation levels

    b) Follow preplanned routes

    c) Leave rope at Aux. Bldg. entry Door.

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 12. | VERIFY SAMPLE COLLECTION CYLINDER CONNECTED: | |
| | a) Cylinder - IN SHIELDED "PIG" | a) IF NOT, place in "PIG" |
| | b) Quick Disconnect - CONNECTED | b) IF NOT, connect quick disconnect |
| | c) Vent valve 1-SS-237 - CLOSED | c) IF NOT, close valve 1-SS-237 |
| | d) Vent plug on tank 2 - REMOVED | d) IF NOT, remove plug |
| 13. | ENTER PRIMARY SAMPLE ROOM: | |
| | a) Observe radiation readings on RM-RMS-156 "Sample Room Monitor" | |
| 14. | VERIFY DILUTION WATER - TK3: | |
| | a) Insure dilution water checklist on wall is updated | a) IF NOT updated, drain sampling tank<br>AND<br>Add 835 ml of DI water through funnel<br>AND<br>GO TO STEP 15 |
| 15. | VERIFY NITROGEN BOTTLE PRESSURE: | |
| | a) Open isolation valve 1-SS-241 on Nitrogen Bottle | |

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 6 of 14 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 15. | (CONTINUED) | |
| | b) Verify Nitrogen Bottle pressure GREATER THAN 200 PSIG | b) IF NOT, leave area<br>AND<br>initiate Nitrogen Bottle replacement<br>AND<br>GO TO step 16 |
| 16. | VERIFY VALVE LINE UP: | |
| | a) Insure following valves - CLOSED<br>____ 1-SS-229<br>____ 1-SS-230<br>____ 1-SS-233<br>____ 1-SS-236<br>____ 1-SS-238<br>____ 1-SS-239<br>____ 1-SS-240<br>____ 1-SS-241<br>____ 1-SS-242<br>____ valve "K"<br>____ valve "L" | |
| | b) Insure following valve - OPEN<br>____ 1-SS-231 | |
| 17. | VENT AND DRAIN HOLDING TANK - TK1 | |
| | a) Remove vent plug on TK1 | |
| | b) Insure following valves - CLOSED<br>____ 1-SS-234<br>____ 1-SS-235 | |

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

17. (CONTINUED)

c) Attach tygon tubing to 1-SS-234

AND

Attach opposite end to 5 gallon poly bottle

d) Insure following valves - OPEN

____ 1-SS-234
____ 1-SS-235

e) Drain until flow to 5 gallon poly bottle stops

e) IF NO flow detected GO TO Step 18

18. ISOLATE HOLDING TANK:

a) Insure following valves - CLOSED

____ 1-SS-235
____ 1-SS-234

19. DETERMINE UNIT TO BE SAMPLED:

a) IF UNIT 1 to be sampled GO TO NOTE prior to Step 20

a) IF UNIT 2 to be sampled GO TO NOTE prior to Step 21

NOTE: Step 20 is for sampling Unit 1.

20. SAMPLE UNIT 1:

a) Insure control room valves - CLOSED

____ TV-SS-106A
____ TV-SS-106B

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 8 of 14 |

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

20. (CONTINUED)

b) Insure following valve CLOSED

____ 1-SS-228

c) Insure UNIT 1 sample line trip valve (solenoid valve back of sample room) - OPEN

____ HCV-SS-101D

d) Insure following valve - OPEN

____ 1-SS-233

e) Insure control room trip valves - OPEN

____ TV-SS-106A
____ TV-SS-106B

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CAUTION: Flow of high activity reactor coolant will commence when next steps are performed.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

f) Observe sample line pressure gage PI-SS-200

g) Carefully open following valve

____ 1-SS-229

AND

AT 20 PSIG on PI-SS-200 insure following valve - CLOSED

____ 1-SS-229

20. (CONTINUED)

h) Insure following valve - CLOSED

____ 1-SS-233

i) Insure following valves - OPEN

____ 1-SS-236 valve "I"

____ 1-SS-236 valve "J"

j) Observe sample pressure gage PI-SS-200

k) Cycle following valve

____ 1-SS-229

AND

AT 100 PSIG on PI-SS-200 insure following valve - CLOSED

____ 1-SS-229

AND

GO TO Step 22

NOTE: The following step is for sampling UNIT 2

21. SAMPLE UNIT 2:

a) Insure control room valves - CLOSED

____ TV-SS-206A

____ TV-SS-206B

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

21. (CONTINUED)

b) Insure following valve - CLOSED

____ 2-SS-240

c) Insure UNIT 2 sample line trip valve (solenoid valve - back of sample room) - OPEN

____ HCV-SS-201D

d) Insure following valve - OPEN

____ 1-SS-233

e) Insure control room trip valves - OPEN

____ TV-SS-206A

____ TV-SS-206B

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CAUTION: Flow of high activity reactor coolant will commence when next steps are performed.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

f) Observe sample line pressure gage PI-SS-200

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 11 of 14 |

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

21. (CONTINUED)

g) Carefully open following valve

____ 1-SS-230

AND

AT 20 PSIG on PI-SS-200
insure following valve - CLOSED

____ 1-SS-230

h) Insure following valve - CLOSED
____ 1-SS-233

i) Insure following valves - OPEN

____ 1-SS-236 valve "I"

____ 1-SS-236 valve "J"

j) Observe sample pressure
gage PI-SS-200

k) Cycle following valve

____ 1-SS-230

AND

AT 100 PSIG on PI-SS-200
insure following valve - CLOSED

____ 1-SS-230

22. ISOLATE AND TRANSFER
CALIBRATED SAMPLE:

a) Insure following valves - CLOSED

____ 1-SS-236 valve "I"
____ 1-SS-236 valve "J"

21. (CONTINUED)

g) Carefully open following valve

____ 1-SS-230

AND

AT 20 PSIG on PI-SS-200
insure following valve - CLOSED

____ 1-SS-230

h) Insure following valve - CLOSED
____ 1-SS-233

i) Insure following valves - OPEN

____ 1-SS-236 valve "I"

____ 1-SS-236 valve "J"

j) Observe sample pressure gage PI-SS-200

k) Cycle following valve

____ 1-SS-230

AND

AT 100 PSIG on PI-SS-200
insure following valve - CLOSED

____ 1-SS-230

22. ISOLATE AND TRANSFER CALIBRATED SAMPLE:

a) Insure following valves - CLOSED

____ 1-SS-236 valve "I"
____ 1-SS-236 valve "J"

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 12 of 14 |

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

22. (CONTINUED)

b) Insure following valves - OPEN

____ valve "K"

____ valve "L"

____ 1-SS-236

c) Verify valve 1-SS-238 - OPEN until pressure on sample bottle is appx. 50 PSIG

AND

Wait appx. one minute to complete transfer.

d) Insure following valves - CLOSED

____ 1-SS-238

____ valve "K" 1-SS-236

____ valve "L" 1-SS-236

23. DISCONNECT SAMPLE CYLINDER:

a) Use adjustable wrench

b) Disconnect quick disconnect

c) Lower lid onto sample "pig"

24. SURVEY SAMPLE PIG:

a) Survey sample "pig" to determine rad levels and hot spot locations

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

25. TRANSPORT PIT:

a) Unlock wheel brakes

b) Use preplanned exit route

c) Avoid hot spots on pig

d) Roll sample pig to Aux. Bldg. exit door

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CAUTION: The sample pig is extremely heavy and may present a hazard if allowed to roll down the ramp unrestrained. Use caution in lowering.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

26. LOWER PIG DOWN RAMP:

a) Use come-a-long to lower sample pig down ramp

27. TRANSPORT PIG TO HOT LAB:

a) Roll pig to Chemistry Hot Lab

b) Place shielded sample pig in corner by the A.A.

28. RECORD SAMPLE DATE/TIME

a) Date_____

b) Time_____

| NUMBER | PROCEDURE TITLE | REVISION |
|---|---|---|
| EPIP-4.23 | POST ACCIDENT SAMPLING OF REACTOR COOLANT<br>(With 1 Attachment) | 02<br>PAGE 14 of 14 |

| STEP | ACTION/EXPECTED RESPONSE | RESPONSE NOT OBTAINED |
|---|---|---|
| 29. | HAVE SAMPLE TRIP VALVES SHUT: | |
| | a) Notify Shift Supervisor that sampling completed | |
| | b) IF sampling Unit 1, have Control Room shut TV-SS-106A AND TV-SS-106B | a) IF sampling Unit 2, have Control Room shut TV-SS-206A AND TV-206B |
| 30. | NOTIFICATIONS: | |
| | a) Notify following that sampling completed | |
| | 1) Shift Supervisor | |
| | 2) Station Emergency Manager | |
| 31. | SAMPLE ANALYSIS: | |
| | a) Request initiation of RWP to dilute sample | |
| | b) Consider initiation of EPIP-4.26, High activity Sample Analysis, upon termination of procedure | |
| 32. | TERMINATE EPIP-4.23: | |
| | a) COMPLETED BY: _____<br>TIME: _____<br>DATE: _____ | |
| | b) Forward procedure to SNSOC for review | |

END