VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 18, 2000

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

Serial No. 00-083
SS&L/BAG R0
Docket No. 50-280
50-281
License No. DPR-32
DPR-37

Gentlemen:

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

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

Very truly yours,

E. S. Grecheck, Site Vice President
Surry Power Station

Enclosure

Commitments contained in this letter: None.

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

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

A045

Serial No. 00-083
Surry EPIP Revisions

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

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

REMOVE AND DESTROY:	EFFECTIVE DATE:	INSERT:	EFFECTIVE DATE:
EPIP-4.05, Rev. 03	01/01/94	EPIP-4.05, Rev. 04	02/04/00
EPIP-4.15, Rev. 05	06/07/94	EPIP-4.15, Rev. 06	02/04/00
EPIP-4.16, Rev. 14	07/22/99	EPIP-4.16, Rev. 15	02/04/00

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

VIRGINIA POWER
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.05	RESPIRATORY PROTECTION (With 2 Attachments)	4 PAGE 1 of 5

PURPOSE

To provide guidance for the issuance of respiratory protection.

ENTRY CONDITIONS

Any one of the following:

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

Approvals on File

Effective Date 02/04/00

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 1 INITIATE PROCEDURE:

- By: _____

Date: _____

Time: _____

NOTE: Fuel melt situations may produce a large amount of beta and/or alpha-emitting contaminants not normally seen by analysis.

_____ 2 REVIEW CRITERIA TO DETERMINE IF RESPIRATORY PROTECTION REQUIRED IN AREA OF ENTRY:

IF respiratory protection NOT necessary, THEN GO TO Step 6.

- High airborne concentrations suspected

OR

- Monitoring indicates air concentration greater than 0.30 DAC using the relationship:

$$\Sigma \frac{CONC_i}{DAC_i}$$

OR

- Noxious gases or oxygen deficient air present

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 3 IDENTIFY PROPER RESPIRATOR TYPE FOR SITUATION IAW NORMAL HP PROCEDURES:

a) Consider respiratory hazards

b) Review Attachments:

- Attachment 1, Guidance for Respiratory Protection
- Attachment 2, Protection Factors

c) Assess requirements for assigning stay times and tracking exposure

NOTE:
- Emergency SCBA bottles located in the Auxiliary Building entrance hallway are filled with compressed air.
- Bottles at Gate 19 (Unit 1) and Gate 20 (Unit 2) are filled with a 35/65 gas mixture.
- Alternate locations for obtaining respiratory equipment are the Surry Warehouse and North Anna Power Station.

_____ 4 ASSIGN RESPIRATOR IAW NORMAL HP PROCEDURES

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: SCBAs which have been previously filled with compressed air should not be filled with 35/65 gas mixture as the oil residue may create an explosive situation when enriched air is used.

* *

NOTE: The Fire Protection compressed air bottle charger is located in the Fire Protection Shop off the Unit #1 alleyway. The key can be obtained from Safety & Loss Prevention or Security. When the emergency response organization is fully augmented, there should be a Safety & Loss Prevention Representative in the OSC.

_____ 5 CHECK IF FILLING OF AIR BOTTLES NEEDED:

GO TO Step 6.

a) Verify normal bottle charging area - HABITABLE

a) GO TO Step 5.d.

b) Fill bottles IAW normal HP procedures

c) GO TO Step 6

d) Use any of the following alternative methods to fill bottles:

- Set up cascade charging system (35/65) in another location

  AND

  Fill bottles IAW normal HP procedures

- Use compressed air bottle charger in Fire Protection Shop

- Use installed air compressor in Unit 2 Turbine Building basement

- Use compressed air bottle charger at Training Center

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 6	TERMINATE EPIP-4.05:	
	• Give completed EPIP-4.05, forms and other applicable records to the Radiation Protection Supervisor	• Give to Radiological Assessment Director.
	• Completed by: _____	
	Date: _____	
	Time: _____	

-END-

HAZARDS	RECOMMENDED USE	ACCEPTABLE USE
Oxygen Deficiency	Self-contained breathing apparatus with full face, pressure demand respirator	----------
Radioactive Particulate		
≥ 0.30, but $< 10 \frac{\Sigma CONC_i}{DAC_i}$	Full face respirator with particulate cartridge	No respirator; Record DAC hours; Ensure < 10 hours/week.
≥ 10, but $< 400 \frac{\Sigma CONC_i}{DAC_i}$	Atmosphere supplying (airline) with full face respirator	Full-face respirator with particulate cartridge; Record DAC hours; Ensure < 10 hours/week.
$> 400 \frac{\Sigma CONC_i}{DAC_i}$	Self-contained breathing apparatus with full face, pressure demand respirator	----------
Radioiodines		
≥ 0.30, but $< 10 \frac{\Sigma CONC_i}{DAC_i}$	Full face respirator with iodine cartridge; Record DAC hours; Ensure < 10 hours/week	No respirator; Record DAC hours; Ensure < 10 hours/week.
≥ 10, but $< 400 \frac{\Sigma CONC_i}{DAC_i}$	Atmosphere supplying (airline) with full face respirator	Full-face respirator with iodine cartridge; Record DAC hours; Ensure < 10 hours/week.
$> 400 \frac{\Sigma CONC_i}{DAC_i}$	Self-contained breathing apparatus with full face, pressure demand respirator	----------
Unknown Atmosphere	Self-contained breathing apparatus with full face, pressure demand respirator	----------

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.05	PROTECTION FACTORS	4
ATTACHMENT 2		PAGE 1 of 1

DESCRIPTION	MODES	PROTECTION FACTORS	
		PARTICULATES ONLY	PARTICULATES, GASES & VAPORS
Air Purifying Respirator:			
a. Full-face with particulate canister	Negative Pressure	100	-----
b. Full-face with iodine canister	Negative Pressure	100	-----
c. PAPR	Positive Pressure	1,000	-----
Atmosphere Supplying Respirators:			
a. Airline Respirators: Full-face	Continuous flow		1,000
b. SCBA: Full-face	Pressure demand		10,000

VIRGINIA POWER
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.15	ONSITE MONITORING (With 2 Attachments)	6
		PAGE 1 of 11

PURPOSE

To provide for performance of onsite radiological surveys and confirmation of an effluent release.

ENTRY CONDITIONS

Any of the following:

1. Direction from the Radiological Assessment Director.
2. Direction from the Radiation Protection Supervisor.
3. Activation by another EPIP.

Approvals on File

Effective Date 02/04/00

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 1 INITIATE PROCEDURE:

- By: _____

Date: _____

Time: _____

NOTE: The Monitoring Team should consist of two individuals. Only one individual need be an HP Technician.

_____ 2 ASK RADIATION PROTECTION SUPERVISOR (RPS) FOR BRIEFING (Radiological Assessment Director (RAD) if RPS unavailable):

- Required monitoring locations
- Samples or surveys required
- Anticipated radiation levels
- Protective clothing, dosimetry and/or respiratory protective gear
- Radio talk group: _____

_____ 3 CHECK VEHICLE - REQUIRED: GO TO Step 5.

_____ 4 ASK RPS FOR ASSISTANCE to get VEHICLE (as necessary)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 5 GET EQUIPMENT FROM HP OFFICE (alternate equipment source is HP Instrument Calibration Facility):

a) Normal HP survey map of area to be monitored

OR

Use blank survey form provided on Attachment 1

b) Portable survey meter with minimum range of 0 - 1000 mR/hr

c) Battery powered air sampler (if air sample required)

d) RM-14 with HP-210 probe or similar radiation monitoring device (if field analysis of samples is required)

e) Container for soil sample, container for liquid sample, gas chamber and smears (get as needed for required sample medium)

f) Portable radio (may not be needed if vehicle with mobile radio is assigned)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 6 DO OPERABILITY CHECK (AS APPROPRIATE):

- Battery check
- Current calibration sticker
- Source check (if available)
- Portable radio (if issued):

  a) Move three position toggle switch to B position

  b) Use mode selection knob to select assigned talk group

_____ 7 ESTABLISH COMMUNICATIONS WITH RPS

a) Notify RPS of readiness to depart

b) Assure information about radiological conditions - CURRENT

_____ 8 DO MONITORING:

a) Go to required monitoring location

b) Use specified protective gear

c) Use frisker or dose rate instrument to determine where plume or surface contamination exists

d) Monitor personal exposure periodically

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 9	CHECK DOSE RATE SURVEY - REQUIRED: a) Use portable survey meter with beta window open b) Go through plume in a cross wind direction c) Identify maximum dose rate d) Close beta window e) Identify maximum dose rate with window closed f) Record results on survey map	GO TO Step 10.
_____ 10	CHECK AIR SAMPLE - REQUIRED: a) Insert particulate filter and Silver Zeolite cartridge into air sampler b) Connect sampler to a charged battery c) Go to location of maximum dose rate or to location specified by RPS d) Get sample volume as directed (minimum 2.5 ft^3 sample)	GO TO Step 11. b) IF air sampler has a battery, THEN continue this instruction.

(STEP 10 CONTINUED ON NEXT PAGE)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
10	CHECK AIR SAMPLE - REQUIRED: (Continued)	
	e) Check gas sample - REQUIRED	e) GO TO Step 10.f.
	1) Open top of gas chamber	1) IF plastic gas chamber used, THEN do the following: a) Open petcocks. b) Attach aspirator bulb. c) Aspirate about 10 times. d) Shut petcocks. e) Remove aspirator bulb. f) GO TO Step 10.f.
	2) Wave chamber within plume	
	3) Close chamber	
	f) Go out of plume while sampler is operating (follow good ALARA practices)	
	g) WHEN desired volume is collected, THEN do the following:	
	1) Turn off sampler	
	2) Disconnect cables (if applicable)	
	h) Separate particulate filter and cartridge	
	i) Put sample(s) in separate labeled container(s)	

(STEP 10 CONTINUED ON NEXT PAGE)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

10 CHECK AIR SAMPLE - REQUIRED: (Continued)

j) Record sample data on Attachment 2:

- Team Identification No.
- Air Sample ID
- Sampler Model and Serial number(s)
- Date

- Time
- Location
- Sample volume, ft^3

_____ 11 CHECK SOIL SAMPLE - REQUIRED: GO TO Step 12.

a) Take soil approximately 1/4 to 1/2 inch deep from a 1 (one) ft^2 area

b) Put soil sample in a labeled container

_____ 12 CHECK LIQUID SAMPLE - REQUIRED: GO TO Step 14.

_____ 13 ASSURE SAMPLE IDENTIFICATION INFORMATION RECORDED ON/ATTACHED TO LIQUID SAMPLE CONTAINER

_____ 14 LEAVE PLUME AREA:

a) Determine access control point

b) Monitor for contamination

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 15	ASK RPS FOR FURTHER INSTRUCTIONS: • Stay in field: GO TO Step 16 OR • Return to station: a) Take off protective clothing at access point b) Take samples to Security or to location specified by RPS c) GO TO Step 18	Ask RAD.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 16	DO FIELD ANALYSIS OF AIR SAMPLE: a) Go to a low background area b) Turn on frisker (or similar monitoring instrument) c) Take background count rate d) Record background count rate on Attachment 2 e) Take gross count rate: 1) Hold Silver Zeolite cartridge about 1/4 inch from detector with influent side of cartridge facing the detector for at least 30 seconds to get a good count 2) Record result on Attachment 2 f) Calculate NET count rate: 1) Subtract background count rate from gross count rate 2) Record result on Attachment 2 g) Calculate conversion factor (CF) for specific sample volume collected: $\frac{3.33\ E\text{-}10}{\#\ ft^3} = CF$ h) Calculate activity: NET cpm x CF = Activity, µCi/ml i) Record result on Attachment 2 j) Calculate Thyroid CDE dose rate: Activity, µCi/ml x 1.57E+9 = Thy CDE, mrem/hr k) Record result on Attachment 2 l) Keep samples for later analysis	IF field analysis NOT required, THEN GO TO Step 17.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
_____ 17	ASK RPS IF REPEAT OF SAMPLING OR SURVEYS - REQUIRED: a) Maintain ALARA while remaining in field b) RETURN TO Step 8	GO TO Step 18.
_____ 18	RETURN TO STATION AND DISPOSITION SAMPLES: a) Check samples - LESS THAN 10 mR/hr	a) IF samples GREATER THAN 10 mR/hr, THEN do the following: 1) Have samples sent to Hot Lab. 2) Have EPIP-4.26, HIGH ACTIVITY SAMPLE ANALYSIS, initiated. 3) IF RPS indicates another sample of smaller volume required, THEN RETURN TO Step 8. IF additional sample NOT required, THEN GO TO Step 19.
	b) Send samples to Count Room in clean container	
_____ 19	ASSURE SURVEY FORMS ARE COMPLETED WITH THE FOLLOWING DATA: • Team # • Date • Time • Name • Survey location • Instrument used and serial number	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 20 TERMINATE EPIP-4.15:

- Give completed EPIP-4.15, forms, and other applicable records to RPS
- Completed by: _____

  Date: _____

  Time: _____

-END-

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.15	BLANK SURVEY FORM	6
ATTACHMENT 1		PAGE 1 of 1

Location _____ 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 #		
		[] All GA smears <1000 DPM/100cm^2 except as noted on map or smear worksheet	
		[] All GA smears <1000 DPM/100cm^2	[] All GA smears in DPM/100cm^2
		[] All LA smears <1000 DPM/ft^2	[] All HP smears in HPs/smear
		[] All HP smears < 1 HP/smear	[] All gamma readings in mrem/hr
		[] Air particulates + I_2 < 0.1 DAC	[] All neutron readings in mrem/hr
		[] _____	[] 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; *** Rad Barrier

TEAM IDENTIFICATION No.: ____________________

AIR SAMPLE ID.:	SAMPLER MODEL AND SERIAL NOs.:	
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.:	SAMPLER MODEL AND SERIAL NOs.:	
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.:	SAMPLER MODEL AND SERIAL NOs.:	
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
SURRY POWER STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

NUMBER	PROCEDURE TITLE	REVISION
EPIP-4.16	OFFSITE MONITORING (With 2 Attachments)	15
		PAGE 1 of 15

PURPOSE

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

ENTRY CONDITIONS

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

Approvals on File

Effective Date 02/04/00

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 1 INITIATE PROCEDURE:

- By: _____

  Date: _____

  Time: _____

* *

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

* *

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

_____ 2 GET BRIEFING FROM RPS:

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

CAUTION: Specific authorization is required before ingesting KI.

* *

_____ 3 SEND COMPLETED ATTACHMENT 2, RADIOPROTECTIVE DRUG DOSAGE, SIDE EFFECTS AND MEDICAL STATEMENT TO RAD

_____ 4 GET DOSIMETRY:

- DAD - ON

OR

- SRD - ZEROED

_____ 5 GET EQUIPMENT FROM HP EMERGENCY RESPONSE STORAGE:

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

b) Get respirators

c) Check equipment:

- Battery check
- Calibration sticker
- Response check

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 6 RECORD TEAM DATA ON ATTACHMENT 1:

- Team identification number
- Team Leader and Member names

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

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

_____ 8 INITIATE RADIO COMMUNICATIONS:

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

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

c) Ask for telephone number in case of radio failure

d) Notify emergency center radio operator of the following:

- Current location
- Designated monitoring location

NOTE: Three offsite monitoring emergency kits are stored in the Facilities and Support Building.

_____ 9 GET EMERGENCY KIT

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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

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

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

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

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

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

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

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

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

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

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

* *

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

* *

_____ 15 TAKE PARTICULATE AND IODINE SAMPLE:

a) Ask emergency facility to determine sample volume required

b) Get air sampler

c) Insert particulate filter and silver zeolite cartridge into sampler

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

e) Keep sample away from moisture

f) Notify emergency center of weather conditions

g) Get air sample:

1) Turn on air sampler

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

h) Remove iodine cartridge and particulate filter from sampler

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

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

- Sample ID
- Date
- Time
- Location
- Volume

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

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

(STEP 16 CONTINUED ON NEXT PAGE)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

16 DETERMINE AIR SAMPLE ACTIVITY: (Continued)

i) Calculate conversion factor (CF) for specific sample volume collected:

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

j) Calculate activity:

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

k) Calculate Thyroid CDE dose rate:

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

l) Put sample in labeled plastic bag

m) Record results in Air Sample section of Attachment 1

n) RETURN TO Step 11

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

_____ 17 CONVERT RO-2 MEASUREMENTS TO CPM:

a) Take background reading (mR/hr)

b) Record results on Attachment 1

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

d) Determine gross mR/hr

e) Record results on Attachment 1

f) Calculate net mR/hr:

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

g) Record results on Attachment 1

h) Change mR/hr to approximate CPM:

Net mR/hr x 10,000 = Net CPM

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

j) RETURN TO Step 16.i

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

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

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

-END-

TEAM IDENTIFICATION No.: _____

NAME(s): _____; _____

INSTRUMENT DATA:

INSTRUMENT	MODEL No.	SERIAL No.

MONITORING DATA:

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

ADDITIONAL REMARKS: _____

_____

_____

AIR SAMPLE DATA: NEXT PAGE

AIR SAMPLE DATA:

AIR SAMPLE ID.:		
DATE / TIME:	LOCATION:	
GROSS CPM:	BACKGROUND (BKG) CPM:	NET CPM (GROSS - BKG):
AIR SAMPLE VOLUME (ft^3):		
ACTIVITY, μ Ci/ml = NET CPM x Conversion Factor (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		

NUMBER	ATTACHMENT TITLE	REVISION
EPIP-4.16	RADIOPROTECTIVE DRUG DOSAGE, SIDE EFFECTS AND MEDICAL STATEMENT	15
ATTACHMENT 2		PAGE 1 of 1

SECTION I: DOSAGE AND SIDE EFFECTS

****

CAUTION

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

****

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

SIDE EFFECTS:

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

WHAT TO DO IF SIDE EFFECTS OCCUR:

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

SECTION II:

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

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

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

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