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ER5.2

029/C01

ISSUE PRV RETURN

1 0 - -

REPLACE ENTIRE PROCEDURE-SSER

*** FOR PLANNING & SCHEDULING USE ONLY ***

WORK COMPLETED (STATUS) _____
OTHER (EXPLAIN) _____

RECEIPT ACKNOWLEDGMENT
NOT REQUIRED

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RECEIVED BY: _____ DATE: _____

SIGN AND RETURN THIS TRANSMITTAL TO: RECORDS MANAGEMENT DEPARTMENT 02-85
SEABROOK STATION
P. O. BOX 300
SEABROOK, NH 03874

NARM TRANSMITTAL
3-10B/DDS WORK ORDER NO: 291867

ADD

**SEABROOK STATION
ADMINISTRATIVE PROCEDURE**

**Site Perimeter and Offsite Monitoring
and Environmental Sampling**

ER 5.2

Rev. 29 Chg. 01

SORC Review: N/A (Non-intent) Date: N/A

Effective Date: 3-19-03

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Procedure Owner:
S. Perkins-Grew

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1.0 OBJECTIVES

This procedure specifies the emergency response actions to accomplish site-perimeter and offsite radiological monitoring and environmental sampling.

2.0 RESPONSIBILITIES

2.1 Offsite Monitoring and Sampling Personnel

Perform emergency environmental sampling and monitoring as directed by the Offsite Monitoring Coordinator.

3.0 PRECAUTIONS

Monitor exposure by frequently reading pocket dosimeters during monitoring and sampling actions.

4.0 PREREQUISITES

None

5.0 ACTIONS

5.1 Offsite Monitoring and Sampling Personnel

5.1.1 Pre-deployment Actions

1. Ensure you have signed in on the EOF personnel roster.
2. Obtain an Offsite Monitoring Team emergency materials tote box from the dispatch area.
3. Obtain your position badge from the tote box and place Protected Area badge over your position badge.
4. Report to the Offsite Monitoring Coordinator at the EOF for team assignments.
5. Obtain the Nextel phone corresponding to the team number from the dispatch area.
6. Obtain a mobile field team radio from the dispatch area.
7. Complete the checklist steps listed in form ER 5.2A, Offsite Monitoring and Sampling Personnel Pre-deployment Checklist. Exact inventory of consumable supplies in kit is not necessary. Assess adequacy of stock on hand.

- Additional sampling equipment and specific pre-deployment actions may be necessary depending on the samples requested by the Offsite Monitoring Coordinator.
 - Ensure you have sufficient forms to complete assigned tasks. If uncertain about number of forms required, confirm requirements with the Offsite Monitoring Coordinator.
8. Obtain maps from the dispatch area bookcase.
 9. Check with the Offsite Monitoring Coordinator to determine if and when rental vehicles will be available for use. If rental vehicles are unavailable initially, coordinate use of team personal vehicles until rental vehicles are available.
 10. Proceed to vehicle with kit, emergency materials tote-box, forms, maps and communications.
 11. Place all survey equipment and other emergency materials in survey vehicle.
 12. When the pre-deployment checklist has been completed and personnel are ready to be dispatched, contact the Offsite Monitoring Coordinator to receive a pre-deployment briefing. Complete form ER 5.2B during the briefing.
 13. With the Offsite Monitoring Coordinator, establish codes for radio reports to the field of changes to emergency classification and radiological release status (e.g., X = Site Area Emergency; Z = Release in Progress). Record the codes and updated status reports in a blank space on form ER 5.2B.

5.1.2 Monitoring Actions En Route to Survey Locations

1. While en route to the assigned survey location, monitor the radiation levels.
2. When requested by the Offsite Monitoring Coordinator, report any readings and locations.
3. When the assigned survey area has been reached, determine the sample location using Global Positioning System (GPS) unit.
4. Record the sample location on Form ER 5.2D, Field Team Survey/Air Sample Data Form, using longitude/latitude.
5. Complete the appropriate steps in §5.1.3 as directed by the Offsite Monitoring Coordinator.

5.1.3 Monitoring and Sampling Actions at the Assigned Locations (Protected: Ref. 6.4)

1. Beta-Gamma Dose Rate Survey
 - a. Immediately report dose rates equal to or greater than 500 mR/hr to the Offsite Monitoring Coordinator.
 - b. At each location, survey for the following and record readings on form ER 5.2D, Field Team Survey/Air Sample Data Form:
 - (1) gamma radiation levels at waist level;
 - (2) beta and gamma radiation levels at waist level, and
 - (3) the highest beta and gamma radiation level indicated by a square meter scan about two inches above the ground.
 - c. If no further samples were requested, report the results to the EOF.
2. Air Sampling Using Portable Air Sampler
 - a. Connect the portable air sampler to the vehicle battery.
 - (1) Leave the engine running,
 - (2) Match the RED clamp to the positive terminal,
 - (3) Attach the BLACK clamp to a ground (i.e., engine block).
 - b. Check the air sampler head for proper loading of silver zeolite cartridge and paper filter.
 - c. Air samples should be taken in open areas away from trees, buildings, and shielded from weather conditions.
 - d. Unless otherwise directed, obtain a minimum 7 cubic feet (196 liters) sample. Record start and stop times and flow rate (use the calibration flow rate from the attached sticker) on form ER 5.2D, Field Team Survey/Air Sample Data Form.
 - e. After the sample is collected, measure background count rate using the E-140 W/HP 210 probe. If the background is >300 CPM, move to an area of lower background; record on form ER 5.2D.
 - f. Remove the sampler head and separate the filter holder from the cartridge holder.

- g. Using the filter holder as the counting geometry, count the filter and record the results on form ER 5.2D.
- h. Count the silver zeolite cartridge (on contact) and record results on form ER 5.2D.
- i. Place the samples in a labeled plastic bag(s) for storage (label by location and time).
- j. Report the results to the EOF. Read the information from form ER 5.2D using the letter designation of each entry. Do not relay any units over the radio.
- k. Remain in low background area and wait for further instructions. Inform the EOF in the event radiological conditions warrant changing your location.
- l. A projected thyroid dose may be estimated from the measured I-131 concentration through the field analysis of silver zeolite cartridges by using the formula located at the bottom of form ER 5.2D.

5.1.4 Return to the EOF

1. When directed to return to the EOF by the Offsite Monitoring Coordinator, park the vehicle in the vehicle monitoring area.
2. Notify the Communicator by radio of your arrival at the EOF.
3. Dispose of all radioactive waste in drum provided inside the vehicle monitoring area:
4. Monitor hands, head and feet for contamination. If contaminated, report to the Radiological Assistant.
5. Deliver sample bags and data sheets to the Radiological Assistant.
6. Return to your vehicle and monitor the inside and outside for contamination. Survey for smearable and fixed contamination inside and out paying close attention to the air filter and radiator.
7. Document vehicle survey in accordance with Procedure ER 4.6, Offsite Monitoring and Decontamination, documenting all contamination levels greater than 1,000 dpm/100cm² beta gamma smearable and 100 cpm/probe area beta gamma fixed.
8. Remove remaining protective clothing and step into the personal monitoring area at the Radiological Assistant control point.

9. Perform a whole body frisk at the Radiological Assistant control point.
10. Use Procedure ER 4.6 to document and report all personnel contamination greater than 100 cpm/probe area above background beta gamma to the Radiological Assistant.
11. For dosimetry processing report to the dosimetry records workstation with thermoluminescent dosimeters (TLD) and self-reading pocket dosimeters (SRPD).
12. Await further assignments. While waiting, assist the Radiological Assistant, as necessary, recheck your survey kit and prepare it for further use. When ready for redeployment report to the dosimetry records workstation for current-quarter exposure update and issue of dosimetry.
13. If directed to deactivate, submit documentation to the Monitoring Team Coordinator.

5.1.5 Subsequent Sampling Actions

1. Air Sampling Using Installed Environmental Air Samplers
 - a. Obtain Health Physics Department procedure HX0956.01. The equipment necessary to complete the procedure is listed in the procedure and provided at the EOF.
 - b. Obtain necessary equipment from the Environmental Sampling Locker prior to leaving EOF. Also obtain a small step ladder.
 - c. Obtain keys to the installed environmental air samples from the environmental sampling locker. The keys are labeled with the applicable locations.
 - d. Proceed as directed by the Offsite Monitoring Coordinator to the location from which environmental air samples are to be obtained.
 - e. Complete the steps for obtaining the sample in HX0956.01.
 - f. Report any problems encountered to the Offsite Monitoring Coordinator.
 - g. When samples have been collected, labeled, and packaged, complete form ER 5.2E and forward the samples to the Radiological Assistant at the EOF.

2. Smear Sampling

- a. When requested by the Offsite Monitoring Coordinator, obtain a smear sample of approximately 100cm² in the sampling area.
- b. Count the smear using an E140 or equivalent count rate meter.
- c. Record the results on form ER 5.2D. Report the results to the EOF.
- d. Place the smear in a labeled envelope for possible further analysis at the EOF.

3. Grass Sampling

- a. Obtain Health Physics Department procedure HX0956.04. The equipment necessary to complete the procedure for sampling grasses is listed in the procedure and provided at the EOF.
- b. Obtain necessary equipment from the environmental sampling locker prior to leaving EOF.
- c. Select a sufficient number of plastic bags to accommodate the numbers of locations and the media specified by the Offsite Monitoring Coordinator.
- d. Using an indelible marker, identify each bag with the name of the sample location, sample date, sample volume, and the appropriate sample submission code determined in accordance with Figure 3.
- e. Proceed as directed by the Offsite Monitoring Coordinator to the location from which grass samples are to be obtained.
- f. Complete the steps for obtaining grass samples in HX0956.04 and collect the amount indicated in step 5.i.
- g. Report any problems encountered to the Offsite Monitoring Coordinator.
- h. When samples have been collected, labeled and form ER 5.2E completed, forward the samples to the Radiological Assistant at the EOF.

i. Sample Table

<u>TYPE</u>	<u>RECOMMENDED AMOUNT</u>	<u>NOTES</u>
Grasses	5 lbs.	Stake off 2 meter by 2 meter plot in an open area. Cut grass approximately one inch above ground level. Gamma and I-131 analysis may be required.

Exact weighing of sample material should be performed at the EOF.

4. Water Sampling

- a. Obtain Health Physics Department procedure HD0956.03. The equipment necessary to complete the procedure is listed in the procedure and provided at the EOF.
- b. Obtain necessary equipment from the environmental sampling locker prior to leaving EOF.
- c. Obtain one-gallon sample containers as needed to accommodate the number of locations specified by the Offsite Monitoring Coordinator.
- d. Using an indelible marker, identify each container with the name of the sample location, sample date, sample volume, collector's initials, and the appropriate sample submission code determined in accordance with Figure 3.
- e. Proceed as directed by the Offsite Monitoring Coordinator to the location from which water samples are to be obtained.
- f. Complete the steps for obtaining water samples in HD0956.03.
- g. If samples from more than one sample point are mixed together, ensure composite sample is checked on form ER 5.2E.
- h. Report any problems encountered to the Offsite Monitoring Coordinator.
- i. When samples have been collected, labeled, and packaged, complete form ER 5.2E and forward the samples to the Radiological Assistant at the EOF.

5. Snow Sampling

- a. Obtain a meter stick, scoop and plastic bag for snow sampling.
- b. At sampling locations specified by the Offsite Monitoring Coordinator, stake off a one meter square plot in an open area.
- c. Using a scoop, obtain a one inch deep sample from the surface of the entire 1 meter by 1 meter area (avoid any debris such as leaves, twigs, and soil in the sample).
- d. Place snow in a plastic bag for transport to the preparation area. Mark the bag indicating the sample location, date, time, and other relevant information.
- e. After allowing the snow to melt, transfer the water into a one-gallon container. Using an indelible marker, identify each container with the name of the sample location, sample date, sample volume, collector's initials, and the appropriate sample submission code determined in accordance with Figure 3.
- f. Complete form ER 5.2E, identify as snow, and forward the samples to the Radiological Assistant.

6. Soil Sampling

- a. Choose an open area that is free of manmade or environmental disturbances such as mining, erosion or flooding. The area should be easily sampled, free of large stones, trees and other heavy vegetation.
- b. Select a sample container capable of holding the volume of soil collected.
- c. Label the sample container using a waterproof marker indicating the sample location, date, time, and any other relevant information.
- d. Mark off a 20 inch by 20 inch area. Remove vegetation, stones larger than a half inch in diameter, and other debris from the area.
- e. Remove the dirt outlined with a sampling scoop to a depth of approximately 1 inch.
- f. Transfer the dirt to the sample container, weigh sample, and seal securely.
- g. Label samples (location, date, time). Complete form ER 5.2E and forward the samples to the Radiological Assistant.

6.0 REFERENCES

1. SS# 25564, Establishing Efficiencies for Field Calculations of Radioactive Activity on Air Sample Cartridges, June 16, 1986
2. ER 2.0, Emergency Notification Documentation Forms Procedure
3. ER 4.6, Offsite Monitoring and Decontamination
4. NRC Inspection Report 50-443/90-85
5. NRC Inspection Report 50-443/95-04
6. HX0956.01, Radiological Environmental Sampling of Air Particulates and Radioiodine
7. HX0956.02, Radiological Monitoring of Direct Radiation
8. HD0956.03, Radiological Environmental Sampling of Ground Water
9. HX0956.04, Radiological Environmental Sampling of Food Crops and Vegetation

Figure 1 Analysis Matrix

Minimum Analysis for each sample type.

	Air Particulate	Silver Zeolite	Water	Food Crops	Broadleaf Vegetation	Milk
Gross B	X		X			
Tritium(H)			X			
Sr-89, 90						
I-129/131		X			X	X
Gamma (G)	X	X	X	X	X	X

Figure 2
Environmental Lab Sample Submission
Form Instructions

(Sheet 1 of 2)

Complete form ER 5.2E as follows:

1. Client Name, Purchase Order/ Contract No., Date of Shipment, Shipping Method, Requested Turnaround Time.
2. Name/Address of Client Representative - Fill in name, address, telephone number, telefax number of person(s) who should receive results.
3. CLIENT CODE - Enter the letter "S" for Seabrook.
4. MEDIA CODE - Enter the two-letter code from Figure 3 that corresponds to the sample type.
5. LOCATION CODE - The location code identifies the type of EPZ area that was sampled and the sampling coordinates. Determine the code as follows:
 - a. EPZ Area - Enter either "T" or "F" to correspond to the Ten-Mile EPZ area or the Fifty-Mile EPZ area from which the sample collection locations were determined.
 - b. Sampling Grid Coordinates - Provide the latitude and longitude in Location and Sample Type Description and/or Comments.
6. WEEK NO. - Enter the week of the year in which the sample was collected. The first week of every year (whether or not it is a full week) will be Week No. 1.
7. YEAR - Enter the last two digits of the year.
8. DESEL LSN - Leave blank - will be assigned at the laboratory.
9. STATION AND SAMPLE TYPE DESCRIPTION AND COMMENTS - Provide as much descriptive information as available, on the location and/or type of sample.
10. COLLECTION PERIOD - Enter the start and stop times for all sample collections. "M", "D," "YR" and "HR" correspond to "month," "day," "year" and "hour," respectively.

NOTE

Accurate information for the "Collection Period" is required as to the duration of the collection and for the exact time of sampling for grab samples or multiple grab samples that are field composited so the proper correction can be made for decay of activity from the collection time, or midpoint of the collection period, to the time of analysis.

Figure 2
Environmental Lab Sample Submission
Form Instructions
(Sheet 2 of 2)

11. **TOTAL SAMPLE AMOUNT SHIPPED** - The volume or weight of the sample is needed to ensure adequate sample size and to calculate the correct activity by unit volume in the case of charcoal filters and air particulate. All specified samples should be followed by the appropriate units (e.g., L, Kg, etc.)
12. **REPORTING UNITS** - Specify reporting units requested. Results for environmental bioassay samples are routinely specified in units of pico Curies (pCi) per weight or volumes. Results for 10 CFR 50/61 samples are routinely specified in units of microCuries (μ Ci) per weight or volume.
13. **RADIOLOGICAL ANALYSES** - Gamma (G) is the minimum analysis that should be performed. Mark other columns as appropriate per Figure 1.
14. **QUARTERLY COMPOSITE** - For water samples only, check the "Composite" or "Grab" block as applicable.
15. **CHAIN-OF-CUSTODY** - Self-explanatory.
16. **FIELD TREATMENT/COMMENTS** - Document sample preparation provided. Preparation includes addition of acids or stabilizers such as sodium bisulfite or preservatives such as formaldehyde and methimazole. Indicate if a sample has been frozen and sectioned. If no field treatment was performed, write in "None."

Figure 3
Environmental Sample Type Codes

AIR

- AP Air Particulate
- CF Charcoal Filter (Silver Zeolite)

CONTAMINATION ASSESSMENT

- SM Smear or wipe samples

WATER

- WP Precipitation, Rain or Snow
- WF Fresh Water, Lakes or Ponds
- WR River Water
- WE Estuary Water
- WS Seawater
- WG Ground Water

TERRESTRIAL

- TM Milk
- TF Edible Food Crop, except green leafy vegetables (identify - edible) (e.g., cranberry, beans)
- TG Non-edible Mixed Vegetation (e.g., grass)
- TV Edible Green Leafy Vegetable (e.g., lettuce)
- TJ Juices from TV samples, if any
- TC Cattle Feed (identify - pellets, silage)
- TS Soil - Specify exact depth(s) Gamma
- TB Biological Organisms (identify)
- TZ Special Terrestrial Sample (identify)
- ZZ Miscellaneous

Figure 4
Summary of Changes
(Sheet 1 of 2)

Rev. 29:

In §5.1, added instructions on location of offsite monitoring team materials, use of both the NEXTEL telephones and mobile radio units, obtaining and securing monitoring instrument check sources and use of rental vehicles or, if necessary, personal vehicles (CR 02-15509).

In §5.1, deleted instructions and procedure references for TLD collection and analysis, milk sampling and food crop sampling (CR 02-02164).

On form ER 5.2A, added references to additional supplies for use by offsite monitoring teams.

On form ER 5.2B, listed cellular telephone numbers and EOF contact numbers for offsite monitoring teams and identified codes use to communicate changing conditions (CR 02-01613).

On forms ER 5.2C and ER 5.2D, clarified form entries for longitude/latitude numbers and for monitoring instrument readings.

Rev. 29 Chg. 01:

Form ER 5.2D is referenced through out this procedure. The proper form to be used by the field teams was ER 5.2C. Because the forms ER 5.2C and ER 5.2D are also referenced incorrectly (ie. flip-flopped) in other procedures, the two forms in this procedure have been swapped to now have the correct forms referenced in all procedures (CR 03-02267).

Rev. 28:

In §5.1 consolidated initial pre-deployment actions for Offsite Field Monitoring Teams to eliminate redundancy.

In §5.1.5 added instructions to use pertinent Health Physics Department procedures for collecting environmental samples.

In §6.0 added HP Department procedures as references.

In Figure 1 revised sample analysis matrix to show minimum analysis to be requested for each sample type and to conform to revised DE&S environmental sample submission form.

In Figure 2 revised the instructions for completing the environmental lab sample submission form.

On form ER 5.2A revised the checklist to add instructions for obtaining an RO-2 survey meter, clarified instructions for source checking instruments, specified respiratory protection equipment, referenced environmental sampling procedures and equipment, and added instructions to obtain a cell phone and provide the cell phone number to the Offsite Monitoring Communicator.

Figure 4
Summary of Changes
(Sheet 2 of 2)

On form ER 5.2B added line for Administrative Dose Extension.

On form ER 5.2D deleted "MCA Disk #" because it is an obsolete reference. Revised form ER 5.2E in its entirety and renamed it.

Rev. 27:

In §5.1.1, step 7, changed mapbook to maps.

In §5.1.2 deleted old step 3 and added new steps 3 and 4 regarding determining sample location.

In §5.1.3 added step protection.

In §5.1.4, step 8, changed "perform a whole body frisk" to "step into the portal monitor." Added step 9 regarding whole body frisk.

In §6.0 added references 4 and 5.

In Figure 2 updated step 4 with new information on identifying sample station codes.

On form ER 5.2A deleted step 1.b to insert batteries in survey meters. In step 3.c changed "ten- and/or fifty-mile EPZ grid map books" to "maps." Added step 3.d regarding GPS unit.

On forms ER 5.2C and D changed titles of the forms, added lines to record latitude and longitude, and deleted lines to record edge locations.

OFFSITE MONITORING AND SAMPLING PERSONNEL PREDEPLOYMENT CHECKLIST

Monitoring and Sampling Team Number _____ Date _____

NOTE

Check that the kit is lead sealed. If the seal is broken, inventory the kit using the Emergency Operations Facility Radiological Emergency Supplies Inventory Checklist for Offsite Monitoring Team Kits.

1.0 Obtain the following equipment from the dispatch area store room.

PORTABLE AIR SAMPLER

INITIALS

- a. Record serial number here: _____
- b. Install a silver zeolite cartridge and particulate filter (rough side out) in the filter head. _____
- c. Ensure the sampler is operational. _____

NOTE

The sources needed to check the survey meters are kept in the file cabinet next to the Radiation Assistant's work area. To open the file, key 9 from the Security Desk key box is needed. It is imperative that each source removed from the cabinet is immediately returned to the cabinet following use.

E-140 OR EQUIVALENT COUNT RATE METER

- a. Record serial number here: _____
- b. Battery check - SAT/UNSAT (circle one) _____
- c. Instrument Source check - SAT/UNSAT (circle one) _____
- d. If case is opened to replace batteries, ensure the speaker wire is re-connected to the speaker contact on the meter circuit board. (Protected: Ref. 6.5) _____

R02 OR EQUIVALENT BETA-GAMMA INSTRUMENT

- a. Record serial number here: _____
- b. Battery check - SAT/UNSAT (circle one) _____
- c. Instrument Source check - SAT/UNSAT (circle one) _____

R02-A OR EQUIVALENT BETA-GAMMA INSTRUMENT

- a. Record serial number here: _____
- b. Battery check - SAT/UNSAT (circle one) _____
- c. Instrument Source check - SAT/UNSAT (circle one) _____

OFFSITE MONITORING AND SAMPLING PERSONNEL PREDEPLOYMENT CHECKLIST
(Continued)

2.0 COMMUNICATIONS CHECK

Install mobile field radio in vehicle in accordance with SM 97-09 and perform a radio check as follows:

- a. In a normal voice say "EOF, THIS IS ERO (team #) _____
REQUESTING A RADIO CHECK. DO YOU READ ME OVER?" _____
- b. Acknowledge EOF response by saying "EOF, THIS IS ERO
(team #) _____, RADIO IS OPERATIONAL OUT." _____

Check the operability of both primary and backup NEXTEL phones per SM 02-03. _____

3.0 MISCELLANEOUS

- a. Obtain respirator mask and two canisters. _____
- b. Obtain environmental sampling procedures and equipment as directed by the Offsite Monitoring Coordinator. _____
- c. Obtain maps as directed by Offsite Monitoring Coordinator. _____
- d. Check operability of the Global Positioning System (GPS) unit in the kit. _____
- e. Obtain dosimetry and exposure status from Dosimetry Records personnel, and record current RAE. _____
Leader _____ mrem Driver _____ mrem
- f. Check dosimeter charger in kit. _____
- g. Select supply of whirl-packs and RAM bags in addition to kit supplies. _____
- h. Select protective clothing supplies that meet the physical needs of the team. _____
- i. Obtain a "drill" A-frame sign and road hazard kit. _____

OFFSITE MONITORING AND SAMPLING PERSONNEL BRIEFING FORM

Monitoring/Sampling Team Number: _____ Time: _____ Date _____

Leader (Name): _____ Driver (Name): _____

1. Plant Status: _____
2. Radiological Release: _____ in progress _____ expected _____ terminated
3. Source of Release: _____
4. Current Wind Direction from _____ (degrees)
5. Current Wind Speed: _____ mph
6. Projected dose rates at survey locations (when available):

Location	Dose Rate	
	<u>TEDE</u>	<u>CDE</u>
_____	_____ mrem/hr	_____ mrem/hr
_____	_____ mrem/hr	_____ mrem/hr
_____	_____ mrem/hr	_____ mrem/hr

7. Instructions: _____

8. Current RAE: Leader _____ mrem Driver _____ mrem
 Administrative Dose Extension: yes no (Leader); yes no (Driver)
 Revised RAE: Leader _____ mrem Driver _____ mrem
 _____ mrem _____ mrem

NOTE

In the event of radio failure, refer to page 3 of SM 02-03 for other monitoring team cell phone numbers and EOF contact.

NOTE

The following codes will be used by the Offsite Monitoring Communicator to report changed conditions to the monitoring teams.

X-Ray = Site Area Emergency Zulu = Release in Progress
 Whiskey = General Emergency

EOF SURVEY/AIR SAMPLE CALCULATION WORKSHEET

DATE _____ TIME _____

Team (A) _____ Location of Sample
 Latitude (B) N _____
 Longitude (C) WO _____

SURVEY METER DOSE RATES

CLOSED WINDOW
 Waist Level mR/hr (D) _____
 2 Inch Level mR/hr (E) _____

OPEN WINDOW
 Waist Level mR/hr (F) _____
 2 Inch Level mR/hr (G) _____

FRISKER COUNT RATES

Waist Level cpm (H) _____
 2 Inch Level cpm (I) _____

AIR SAMPLE DATA

Stop Time (hh:mm) (J) _____

Sample Volume (K) _____
 Background (cpm) (L) _____
 Filter Paper (Gross cpm) (M) _____
 SZ Cartridge (Gross cpm) (N) _____

Direct Reading Dosimeter (mR)
 Driver (O) _____
 Leader (P) _____

Optional, Smear Sample (cpm) (Q) _____

AIR SAMPLE CALCULATIONS

PARTICULATE

$$\boxed{} - \boxed{} = \text{NCPM} \quad \boxed{} \times 1.6\text{E-}10 = \mu\text{Ci/cc}$$

Gross cpm (M) Background (L) Volume (K)

IODINE (Adult Thyroid CDE Rate)

$$\boxed{} - \boxed{} = \text{NCPM} \quad \boxed{} \times 6.4\text{E-}9 = \mu\text{Ci/cc} \times 1.25\text{E+}6 = \text{Rem/hr.}$$

Gross cpm (N) Bkg. (L) Volume (K)

Approximate Distance and Direction from Plant: _____ miles _____ degrees.

NOTE
 Air concentrations of radioiodine can be rapidly approximated for 7-cubic foot air sample by using the ratio 100 cpm/1E-7 μCi/cc I-131.

FIELD TEAM SURVEY/AIR SAMPLE DATA FORM

DATE _____ TIME _____

REPORT LETTERED ITEMS ONLY

Team (A) _____ Location of Sample
Latitude (B) N _____
Longitude (C) WO _____

SURVEY METER DOSE RATES

CLOSED WINDOW

Waist Level mR/hr (D) _____
2 Inch Level mR/hr (E) _____

OPEN WINDOW

Waist Level mR/hr (F) _____
2 Inch Level mR/hr (G) _____

FRISKER COUNT RATES

Waist Level cpm (H) _____
2 Inch Level cpm (I) _____

AIR SAMPLE DATA

Stop Time (hh:mm) (J) _____
Start Time (hh:mm) _____
Total Run Time _____
Sample Flow Rate (cfm) _____
Sample Volume (K) _____
Background (cpm) (L) _____
Filter Paper (Gross cpm) (M) _____
SZ Cartridge (Gross cpm) (N) _____

Direct Reading Dosimeter (mR)
Driver (O) _____
Leader (P) _____

Optional, Smear Sample (cpm) (Q) _____

Projected Adult Thyroid CDE dose estimation: _____

$$\begin{array}{l} \boxed{} \text{ -- } \boxed{} = \text{NCPM} \quad \times \quad \frac{6.4\text{E-}9}{\boxed{}} = \quad \mu\text{Ci/cc} \times 1.25\text{E+}6 = \quad \text{Rem/hr} \\ \text{Gross cpm (N)} \quad \text{Bkg. (L)} \qquad \qquad \qquad \text{Volume (K)} \end{array}$$

COMPLETED BY LABORATORY PERSONNEL

Analysis Performed By: _____

Date/Time Analyzed: _____

_____ Cartridge Spectrum File# _____

_____ Filter Spectrum File# _____

Particulate Filter Activity: _____ $\mu\text{Ci/cc}$ Total

Iodine Cartridge Activity: _____ $\mu\text{Ci/cc}$ Total

SAMPLE ANALYSIS DATA ATTACHED

Remarks: _____

