FENOC
Davis-Besse Power Station
Transmittal Report

Data Date Time: 08/23/2016 06:31:30 AM

Copy Holder Number: 1665
Name: DOC. CONTROL DESK
Location / Address: OFFSITE / USNRC DIVISION OF EMERGENCY PREPAREDNESS
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Transmittal Number: DB-08232016-259294
Transmittal Date: 8/23/2016 6:29:13 AM

Unit	Document Number	Doc Type	Sheet/Section	Revision	Version	Change Type	Change Number	Document Status	HC	AC	CD	TOC1	TOC2	Changes
DB1	NOP-LP-5015	PROC		0002		SIMPLE CHANGE		REVISED	1	0	0	EPIB		
DB1	NOP-LP-5015	PROC		0003		PROCEDURE CORRECTION		APPROVED	1	0	0	EPIB		

Use this document transmittal to update the identified documents and remove the superseded documents from use.

FENOC
FIELD MONITORING TEAMS
RADIATION MONITORING TEAMS
FIELD SURVEYS

Effective Date: 08/23/16

Approved: _____ 8/12/16
Program Manager Date

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1.0 PURPOSE

To provide instructions for conducting and evaluating radiological surveys to be performed by Offsite Field Monitoring Teams/Radiological Monitoring Teams (FMT/RMT's) at and beyond the Exclusionary Area Boundary/Site Boundary as a result of an actual or potential radiological release to the environs.

2.0 SCOPE

2.1 Applicability

This procedure is applicable to all FENOC personnel responsible for performing environmental radiological surveys due to a nuclear accident

2.2 Exceptions

None

3.0 DEFINITIONS

3.1 Field / Radiation Monitoring Team (FMT/RMT) – Individuals who perform radiological monitoring outside the Protected Area during emergencies including, Davis-Besse Administrative Building (DBAB).

3.2 Release In Progress – An unanticipated release of radioactive material attributed to the Emergency Plan classifiable event. See NORM-LP-5001 for BWR / PWR 'Release In Progress Determination Guidance'.

3.3 Turn Back Dose – Whole body dose of an individual as indicated by a direct reading dosimeter that when reached, the individual must exit the area and go to a low background area to preclude exceeding an administrative dose limit.

- Turn back dose is calculated by determining the team member with the lowest available dose, dividing by 2 to allow for entry and exiting from the plume, and finally dividing by the - TEDE/EDE at TEDE Rate conversion factor obtained from the MIDAS FENOC Follow-Up/Periodic Update Notification Form located in the dose results section.

4.0 PROCEDURE DETAILS

Procedure details are described in the following site specific attachments:

- Attachment A: BVPS Radiological Surveys for Emergencies
- Attachment B: DBNPS Radiological Surveys for Emergencies
- Attachment C: PNPP Radiological Surveys for Emergencies

5.0 RECORDS

Attachments and Forms become a QA Record in the event of a Declared Emergency.

5.1 Records Handling

The records generated by Emergency Response Organization (ERO) personnel will be collected and maintained by Emergency Response Section (ERS) pursuant to site procedures, i.e., RA-EP-02720, Recovery Organization, (DB) or EPI-B-0009, Emergency Records, (PY).

The Emergency Records Package will be transferred to Records Management pursuant to NOP-SS-3300, FirstEnergy Enterprise Records Management Program.

5.2 Records Capture

The following records are completed/generated by this document:

Quality Records

Only actual event records are quality records.

- RMT Mobilization Checklist Form (NOP-LP-5015-01)
- RMT Field Data Transfer Sheet Form (NOP-LP-5015-02)
- RMT Status Briefing Form (NOP-LP-5015-03)
- RMT Air Sampling Label Form (NOP-LP-5015-04)
- RMT Field Data Report Form (NOP-LP-5015-05)

- Field Monitoring Team Dosimetry Record – (BV) (NOP-LP-5015-06)
- FMT Plant Status Update (NOP-LP-5015-07)
- Potassium Iodide (KI) Tracking Form (NOP-LP-5015-08)
- Field Monitoring Team (FMT) Pre-Job Briefing Checklist (NOP-LP-5015-09)
- Field Monitoring Team Field Survey Log (NOP-LP-5015-10)
- Field Monitoring Team Checklist (NOP-LP-5015-11)
- Emergency Radiological Survey Form (DBEP-038)
- RTL Inventory Form (DBEP-103)
- RMT Field Survey Form (DBEP-105)
- Potassium Iodide (KI) Administrative Form (DBEP-106)
- Dosimeter Record Form (DBEP-107)
- Estimate of CEDE From Radio-Iodine Form (DBEP-0117)
- Instrument Check Form (DBEP-0120)
- Radiation Monitoring Team (RMT) Pre-Job Briefing Checklist Form (DBEP-0121)
- Potassium Iodide (KI) Tracking Form PNPP No. 9177

Non-Quality Records

- All forms and paperwork generated via ERO training drills.

6.0 REFERENCES

6.1 Discretionary

NORM-LP-5001, FENOC Position on "Release in Progress" for Emergency Response Organization

Developmental

BV

- 1/2-EPP-IP-2.1, 'Emergency Radiological Monitoring'
- "Airborne Radioactivity Sampling" HPM RP 7.3.
- Portable Air Samplers – Model H-809C, H809V, H-809B2 (RADECO). HPM RIP-6.6.
- BV Emergency Preparedness Plan, A5.735A - Section 5
- 1/2-EPP-IP-2.6, "Environmental Assessment and Dose Projection

DB

- Davis-Besse Nuclear Power Station Emergency Plan
- DB-HP-01103, Use of Portable Radiation, Contamination, and Airborne Survey Equipment

PY

- Emergency Plan for PNPP Docket Nos. 50-440
- EPI-A7, Operations Support Center Activation
- EPI-A8, Emergency Operations Facility Activation
- NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- FEMA-REP-2, Guidance on Offsite Emergency Radiation Measurement Systems (September 1980)

6.2 Obligations

BV

None

PY

<P00042>

DB

O 07407	O 13617	O 14325

6.3 Implementation

6.3.1 Multi-site

NOP-LP-5007 Perry MIDAS Dose Assessment Software

NOP-LP-5401 Beaver Valley Midas Dose Assessment Software

NOP-LP-5402 Davis Besse MIDAS Dose Assessment Software

6.3.2 BV

1/2-EPP-IP-2.1 Emergency Radiological Monitoring

1/2-EPP-IP-2.3 Offsite Monitoring For Airborne Release.

6.3.3 DB

RA-EP-02252, DBAB Radiation Monitoring Team Surveys.

RA-EP-02260, Radiological Controls in the DBAB

RA-EP-02550, Offsite Personnel and Vehicle Monitoring and Decontamination

RA-EP-02620, Emergency Dose Control and Potassium Iodide Distribution

RA-EP-02720, Recovery Organization

6.3.4 PY

EPI-B-0010, Emergency Radiological Environmental Monitoring Program (EREMP)

7.0 SCOPE OF REVISION

1. Changed NUCPERRY to xFENOCPY step 4.2.5.4 and ATTACHMENT C2, step 1.b.

BVPS RADIOLOGICAL SURVEYS FOR EMERGENCIES

TABLE OF CONTENTS

1.0 PURPOSE

To provide instructions for conducting and evaluating radiological surveys to be performed by Offsite Field Monitoring Teams Radiological Monitoring Teams (FMT/RMT's) at and beyond the Exclusionary Area Boundary/Site Boundary (EAB/SB) as a result of an actual or potential radiological release to the environment.

1.1 Responsibilities

1.1.1 This procedure is to be performed by the designated offsite Field Monitoring Teams(s).

1.2 Precautions

NOTE

Owners volunteering the use of their personal vehicles shall be alerted to the fact that most insurance companies will deny any claim for damage due to radioactive contamination. In addition, any personal vehicles shall have the same level of liability insurance as company

1.2.1 Designated vehicles shall be used for FMT team purposes. Personal vehicles should not be used, unless no other suitable vehicles are available.

1.2.2 All monitoring equipment shall be stowed in the vehicle such that it will not affect the safe operation of the vehicle.

1.2.3 FMT vehicles shall be operated in compliance with all motor vehicle laws, including speed limits and the use of seat belts.

1.2.4 During siren activation, FMT(s) will not activate radio transmitters.

1.2.5 If the site is inaccessible, FMT personnel will report to the EOF and be briefed by EA&DP.

1.3 Limitations

1.3.1 If any of the following cannot be met, request assistance from the Technical Support Center (TSC) 724-682-5651, Emergency Operations Facility (EOF) 724-891-1985, or the Operations Support Center (OSC) 724-682-5391.

1.3.2 Satisfactory inventory of the FMT kit, and

1. Hi-band Communications Radio and antenna, and/or,

   a. Cell phone, and

   b. Personnel dosimetry, and

   c. Ensure PL Switch located at the U1 Communication Panel, in the Control Room is in proper position, and,

   d. BVPS vehicle, or another vehicle, meeting the following criteria:

1.3.3 Enclosed vehicle with sufficient room for the FMT Kit and fixed seating, with seat belts, for all team members, and,

1. Operable cigarette lighter receptacle, and/or power adapter, and,

   a. At least 1/2 tank of gas, and,

   b. Current State motor vehicle inspection sticker (if applicable),

1.3.4 If personal vehicle, ensure insurance is in effect, per requirements of – PRECAUTIONS, Note Section 1.2.

1.4 Prerequisites

1.4.1 The offsite FMT(s) are organized and directed to perform offsite field monitoring.

1.4.2 Personnel assigned to the FMT(s) have signed onto the appropriate High Rad Radiation Work Permit (RWP).

2.0 SCOPE

2.1 Applicability

This procedure is applicable to all FENOC personnel responsible for performing environmental radiological surveys due to a nuclear accident

3.0 DEFINITIONS

None

4.0 PROCEDURE DETAILS

4.1 Preliminary Actions

NOTES

- These preliminary steps are written with the assumption that the offsite FMT will be dispatched from the Operations Support Center (OSC) or another in-plant location, at the request of EA&DP personnel at the TSC or EOF.
- If the TSC or EOF is not activated, all communications specified for EA&DP shall be directed to the Control Room.
- If the offsite FMT(s) are dispatched from an offsite location, (e.g., Emergency Response Facility (ERF), Joint Public Information Center (JPIC), home, etc.), the FMT(s) is authorized to deviate from the preliminary steps provided below, as necessary, provided that the PREREQUISITE's listed above are met.

4.1.1 Prior to leaving the OSC or the Station, fill out and complete Form, NOP-LP-5015-06, "Field Monitoring Team Dosimetry Record".

1. If any of the above data is not readily available, a reasonable estimate should be entered until data is available.

NOTES

- FMT team members will retain their dosimetry when they exit the Station and use this dosimetry while performing offsite monitoring.
- If dispatched from other locations, e.g., Emergency Response Facility (ERF), Home, etc., FMT team members shall use dosimetry provided in FMT kits.
- Check with OSC for any precautions to transit from the OSC to ERF, i.e., dose rates.

4.1.2 Exit station via the Primary Access Facility (PAF) and proceed to ERF.

4.1.3 If not already in their possession, FMT members shall obtain and don personal dosimetry.

NOTE:

An extra set of vehicle keys are maintained in OSC Key Cabinet if ERF cannot be accessed.

4.1.4 Report to the TSC and notify the Radcon Coordinator of your arrival.

4.1.5 Obtain a copy of the Form NOP-LP-5015-11, "Field Monitoring Team Checklist" and follow the instructions.

1. Record the following information:

   a. Procedure Start Date:

   b. Procedure Start Time:

4.1.6 Call EA&DP at the EOF for a briefing and record the following information on Form NOP-LP-5015-07," FMT Plant Status Update". If the TSC or EOF is not yet activated, THEN obtain this information from the OSC or the Control Room.

4.1.7 Locate one of the vehicles for the keys obtained. This vehicle shall meet the requirements of Section 1.2.

- If no vehicles are readily available, request the assistance of the OSC or the EA&DP personnel in obtaining a suitable vehicle.
- If a vehicle cannot be obtained, a volunteered personal vehicle may be used if it meets the requirements of Section 1.2.

NOTE

EA&DP will designate which communications device is the primary, i.e., cell phone or radio.

4.1.8 Obtain monitoring equipment and prepare vehicle as follows:

1. Obtain a cell phone and phone number to call from EA&DP
2. Verify that EA&DP has cell phone number for each Offsite FMT.

NOTE

An inventory of the FMT Kit is only required if the seal is broken.

4.1.9 Perform all required instrument checks for the radiation detection instruments in the FMT Kit, prior to leaving the ERF.

1. If any piece of equipment fails its operability check, obtain a calibrated replacement from other FMT Kits or from other station sources.

4.1.10 Obtain a 60-watt monitoring team radio unit with magnetic mount antenna from the Decon Room in the ERF.

4.1.11 If the OSC has explicitly directed the use of protective clothing and/or respirators, this equipment shall be donned prior to leaving the station.

4.1.12 Remove the survey maps, survey logs, procedures, the beta-gamma survey instrument, radios, and other equipment that may be needed enroute, from the monitoring kits and stow in a location accessible to the team leader while enroute. Remove and don Personal Ion Chamber, (PIC) zero as necessary.

4.1.13 Load monitoring team equipment into the vehicle so that it is safely restrained and will not affect the operation of the vehicle.

4.1.14 Install radio equipment on the vehicle.

4.1.15 Prior to leaving site perform a cell phone and/or radio check with EA&DP, to verify the operability of the communications equipment.

1. If radio equipment and/or cell phone is inoperable, obtain replacement equipment.

4.1.16 Provide the following information to the EA&DP personnel and record on Form NOP-LP-5015-06 "Field Monitoring Team Dosimetry Record".

1. Name and badge number of team members.

2. Current pocket dosimetry reading and exposure limits.

4.1.17 Obtain FMT personal Turn Back dose limits from EA&DP.

4.1.18 Obtain a copy of Form NOP-LP-5015-10, "FMT Field Survey Log" and follow instructions provide on this form.

4.1.19 Proceed to the first survey location when directed.

4.1.20 Perform requested surveys in accordance with the remaining steps of this procedure.

1. **IF** the TSC/EOF is not yet activated, and the OSC or Control Room has not specified a first survey location, **THEN** the monitoring team shall proceed as described in Section 4.3.

4.2 Continuous Actions

> NOTE
>
> The instructions in this section are applicable during all offsite monitoring team activities, and shall be performed in conjunction with other steps as appropriate.

4.2.1 Team members shall periodically read their pocket dosimeter and report their cumulative radiation reading to EA&DP no less than every 30 minutes or as directed

4.2.2 Team members shall take appropriate actions to prevent the spread of detected contamination to their skin, clothing, survey equipment, and/or vehicle to the extent possible.

4.2.3 Team members shall not eat, drink, or smoke in areas with greater than background contamination or airborne activity.

> NOTE
>
> Periodically check communication with EA&DP. The cell phone may disconnect if you pass through a 'weak signal' area.

4.2.4 Keep the communications equipment turned on at all times while away from the station.

4.2.5 All communications between the monitoring teams and EA&DP shall follow standard radio protocol (Attachment A6).

1. Identify survey location using pre-designed survey locations to the extent possible.

2. All survey data reports to EA&DP shall use the following format:

> NOTE
>
> To facilitate the transfer of data, form NOP-LP-5015-F10, "Field Monitoring Team Field Survey Log" should be used by the FMT and EA&DP to document field data results. It is only necessary to transfer the variable information. Fixed information such as Column Headings need not be relayed. This protocol will minimize communication errors.

3. Report all survey data on the FMT Field Survey Log in relation to its block number rather than its parameter name. i.e., "Block #1 is A point. One point one; Block 5 is four zero, zero, zero; Block 3 is zero point five,...".

4. Do not report units such as mR/hr, cu.ft.

OR

IF using FMT field data survey information for MIDAS input, proceed to Section 4.6 – Airborne Activity Sampling. Otherwise, proceed to next step.

4.2.6 If members of the public or news media solicit information from the FMT team, the FMT members shall:

1. Be courteous.

2. Explain that the survey is precautionary measure and that the survey data are raw data that have not been evaluated, and that significant final data will be reported to State and local authorities.

3. Direct additional public questions to the local county information line. The telephone number is provided in the emergency response section (blue pages) of the telephone directory.

4. Direct additional news media questions to the Chief Company Spokesperson at 412-604-4923.

4.2.7 Remain alert to the status of consumable supplies, such as vehicle gas, sample media and survey meter batteries, and notify EA&DP of any pending shortfalls.

4.2.8 In the event of a monitoring team shift change associated with a longer term emergency response, the off-going monitoring team will complete Section 4.7, "Final Conditions" of this procedure. The oncoming team will initiate a new copy of this procedure, re-performing or verifying the preliminary steps above, as directed by EA&DP or the OSC.

4.3 Default Survey

NOTE

The steps in this section are performed whenever the OSC or the Control Room does not provide an initial survey assignment. This may occur during a quickly breaking incident prior to activation of the OSC or TSC/EOF. Generally, by the time that the team has completed the preliminary steps of this procedure, the TSC/EOF will have been activated.

4.3.1 Locate the survey map and the survey point index for the assigned map quadrant. (Attachments A1 through A4)

4.3.2 **IF** the quadrant was not assigned, **THEN** select the quadrant into which the wind is blowing:

Wind Direction	Quadrant	Attachment
0 – 90	SW	C
90 – 180	NW	B
180 – 270	NE	E
270 – 360	SE	D

4.3.3 **IF** weather permits, **THEN** perform a "Moving Dose Rate Survey" – Section 4.4, while enroute to the first survey location.

1. IF there is a BVPS field monitoring team at that location, **THEN** proceed to the next location on the survey route.

2. The first survey location is indicated on each quadrant attachment (Attachments A1 through A4).

4.3.4 Perform a "Stationary Dose Rate Survey" - Section 4.5, at this location.

4.3.5 IF the open window dose rate is greater than the closed window dose rate, **THEN** obtain a 10 cubic foot air sample and perform field screening on the sample media as described in Step 4.6.

1. Use a silver zeolite cartridge for iodine sampling. Ensure cartridge shelf life is not expired.

4.3.6 Record all data on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log" or Attachment A7, MIDAS Back Calculation Field Survey.

4.3.7 Report the data to the OSC or Control Room.

4.3.8 Proceed to the next survey point on the route.

4.3.9 Repeat Steps 4.3.3 to 4.3.8 until directed otherwise.

4.4 Moving Dose Rate Survey

NOTES

- Moving dose rate surveys are performed to determine plume boundaries and centerline. The steps in this section are performed when in enroute to the first survey location, while enroute between survey locations, and as directed by EA&DP.
- Whenever possible an ion chamber instrument such as the Eberline RO-series or equivalent should be used for making dose rate measurements. However, an instrument with an energy-compensated Geiger-Mueller (GM) probe such as the Eberline HP-270 is an acceptable substitute for gamma exposure measurements.
- FMT team members SRD reading should be reported to EA&DP approximately every 30 minutes or in higher dose rate areas every 100 mrem.

4.4.1 Select a beta-gamma instrument.

4.4.2 Close the beta window.

4.4.3 Open the vehicle window and hold the instrument at the opening.

4.4.4 Travel along the designated survey route at a low rate of speed (within speed limits, no greater than 30 mph).

4.4.5 Monitor instrument read-out and note changes in instrument response.

1. Report the first increase (>1.0 mrem/hr) in ambient dose rate above background to EA&DP and log the location on Form NOP-LP-5015-10, "Field Monitoring Team Log".

2. If the ambient dose rate increases to 100 mR/hr, then:

   a. Immediately move away to an area of lower dose rate.

   b. Notify EA&DP and request instructions.

4.4.6 If the survey is being performed to locate the leading and trailing edges of the plume also report significant decreases in ambient dose rates.

4.5 Stationary Dose Rate Survey

NOTE

- Whenever possible an ion chamber instrument such as the Eberline RO-series or equivalent should be used for making dose rate measurements. However, an instrument with an energy-compensated Geiger-Mueller (GM) probe such as the Eberline HP-270 is an acceptable substitute for gamma exposure measurements.

4.5.1 Take a closed window reading.

1. Check the beta window closed.

2. Hold the instrument, or instrument probe parallel to, facing, and about 3 feet (e.g., waist height) above the ground.

3. Allow sufficient time for the instrument reading to stabilize.

4. Record reading, in Column 3 (in mR/hr), on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log".

4.5.2 Take an open window reading.

1. Open the beta window.

2. Hold the instrument, or instrument probe parallel to, facing, and about 3 feet (e.g., waist height) above the ground. Allow sufficient time for the instrument reading to stabilize. Note the reading.

3. Rotate the instrument beta window to face upwards. Allow sufficient time for the instrument reading to stabilize. Note the reading.

4. Record the higher reading, Column 4 (in mR/hr), on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log".

5. Vary the height of the instrument, or probe, between waist height and 3 inches above the ground.

6. If the open window reading is higher, closer to the ground, record and label the 3 inch reading in the REMARKS Column.

4.5.3 If an air sample was requested for this location, proceed to Step 4.6

4.5.4 When all measurements required at this location have been obtained, report the data (blocks 1 - 11) to EA&DP. Await further instructions.

4.6 Airborne Activity Sampling

NOTES

- Obtain air sample from the centerline reading of plume.
- If the open window dose rate measurement is about equal to the closed window reading, the survey location is not submerged in the plume and air samples will underestimate the plume concentration. Notify EA&DP if this is the case and request instructions.
- Silver zeolite is the **preferred** cartridge for air sampling in an actual event.

4.6.1 Prepare sampler:

1. If not already present, mark a flow arrow on the side of the silver zeolite and/or charcoal cartridge.
   a. EA&DP will direct which iodine sample media to use.
2. Place a clean particulate filter, and the iodine sample cartridge, in the sample holder and install on the sampler.
   a. Air flow shall pass through the particulate paper first and then the cartridge in the direction of the arrow marked on the cartridge.
   b. If EA&DP does NOT request an iodine sample, use a single charcoal cartridge as a place-holder. Re-use this cartridge for all subsequent particulate sample.
3. Position the sampler so that the intake is not in close proximity to potentially contaminated surfaces. Protect the filter paper and iodine cartridge from rain.
4. If the air sampler has an integral battery, proceed to Step 4.6.3.

CAUTIONS

- Use caution when connecting the air sampler power leads to the vehicle battery.
- Avoid any potential moving parts when positioning and connecting power leads.
- Avoid contact with battery acid corrosion residue.

4.6.2 Connect the sampler to the vehicle battery by performing the following:

1. Shut off car, if not already done.
2. Put on eye protection.
3. Self-check to determine positive and negative battery terminals.
4. To minimize the potential for hydrogen explosion, do NOT connect or disconnect the sampler power leads while the sampler is turned on.
5. Place the positive clamp of the air sampler on the positive battery terminal, the negative clamp of the air sampler on the negative battery terminal making sure that proper connections are made.

4.6.3 Obtain the sample, perform the following

NOTES

- The desired air sample volume is 10 cubic feet, unless directed otherwise by EA&DP personnel.
- Obtain air sample from centerline reading of plume

1. Turn on the sampler.
2. Record the sample start time on Attachment A5 "Air Sampler Record Card'.
3. Read the flow rate and determine the sampling time:
   a. Desired Volume (cu. ft.) / Sample Flow Rate (CFM = Sample Time in minutes)

4. When the sample time has elapsed.

   a. Turn off the sampler.

   b. Disconnect the negative sampler clamp.

   c. Disconnect the positive sampler clamp.

5. Record the stop time and other data on Attachment A5, "Air Sample Record Card'.

4.6.4 Using the E140N or equivalent with a HP-210 probe, obtain a background reading.

1. Check that the RESPONSE control is set for the slowest response. If instrument has a speaker, ensure it is turned on.

2. Position the probe over the location where the sample media will be counted.

3. Evaluate background count rate.

   a. If the background exceeds 300 cpm, notify EA&DP and request clearance to move to an area of lowest background.

4. Note and record the background count rate in Column 7 in (cpm) on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log".

4.6.5 Perform field screening of the sample media.

4.6.6 Count the filter paper and the iodine cartridge separately.

(INTENTIONALLY BLANK)

NOTES

- Handle sample media in a manner that minimizes cross-contamination of sample media or the removal of activity from the sample media.
- Handle all sample media by the edges.
- Place, do not slide sample media into sample bags.
- Do not shake sample bags, or squeeze sample bags together.

1. Remove the sample media from the sample holder.
2. Place the filter paper on a clean surface.
3. Hold the HP-210 probe about 0.5 inches above the filter paper.
4. Record the gross instrument reading, in Column 5 (in cpm), on Form NOP-LP-5015-10, "Field Monitoring Team Log".
5. Place the iodine sample cartridge on a clean surface, flow arrow pointing downward.
6. Hold the HP-210 probe about 0.5 inches above the face of the sample cartridge.
7. Record the gross instrument reading, in Column 6 in (cpm), on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log".

4.6.7 Ensure all information for each survey point or air sample is documented on Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log".

4.6.8 When all measurements required at this location have been obtained, report the data from Form NOP-LP-5015-10, "Field Monitoring Team Field Survey Log" to EA&DP and await further instructions.

4.7 Final Conditions

4.7.1 All sample media are properly bagged, labeled, and have been returned to the station for possible laboratory analysis.

4.7.2 All survey logs are complete, and signed by the team leader.

4.7.3 Survey logs shall be attached to this procedure, and the procedure forwarded to the EA&DP Coordinator, and then upon termination of the emergency, to the Communications and Records Coordinator.

4.7.4 If the team has been directed to turnover to a relief team, the oncoming offsite FMT has been briefed by the off-going team regarding the status of monitoring equipment, supplies, the vehicle, and other pertinent information.

4.7.5 If the team has been directed to return to the station without turnover, all monitoring equipment, including the vehicle, has been returned to the original storage location, or another location designated by EA&DP.

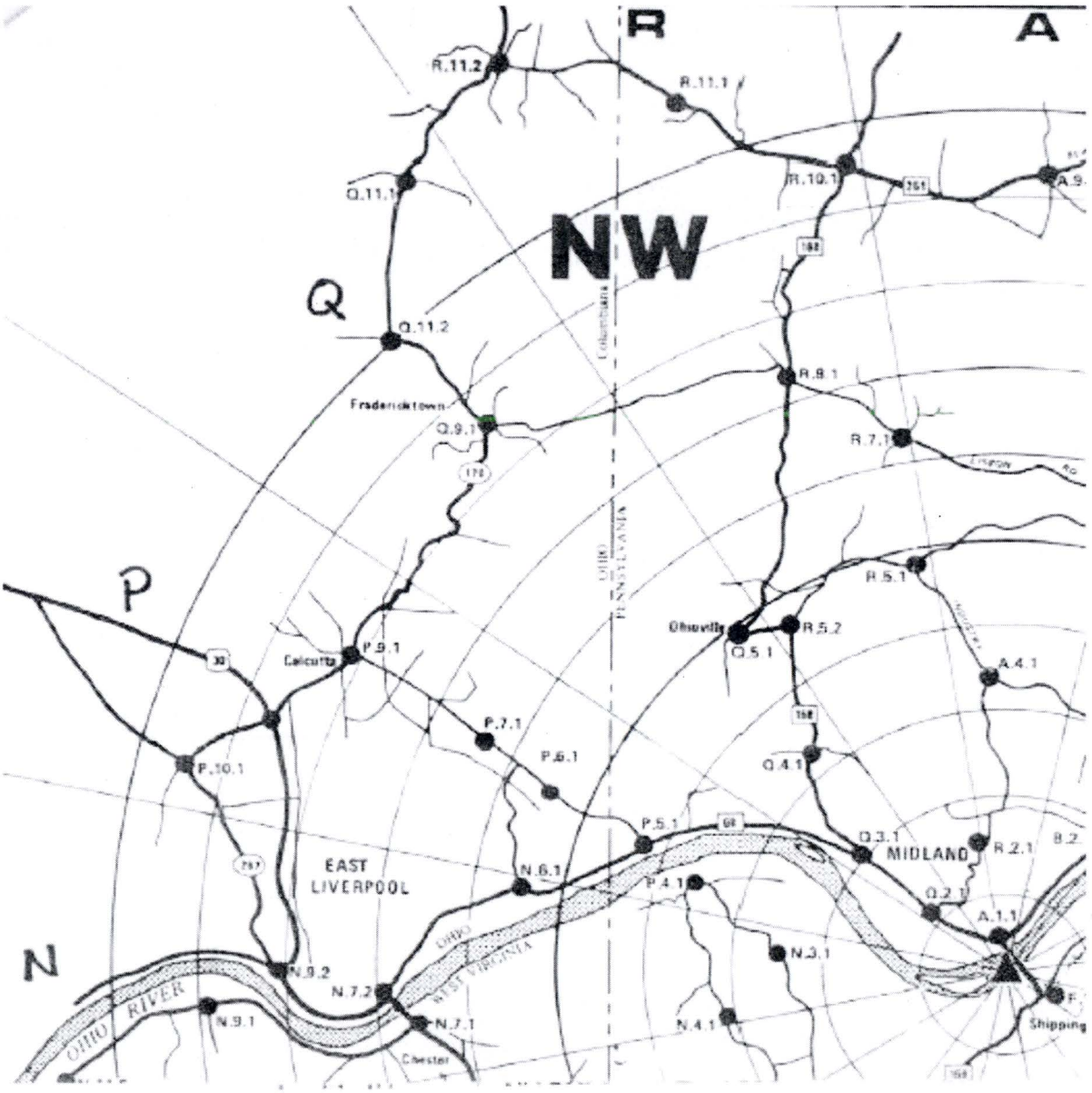
4.7.6 Procedure Complete

4.7.7 Date/Time: _____

4.7.8 Team Leader: _____

ATTACHMENT A1 NW OFFSITE SURVEY MAP

Page 1 of 3



ATTACHMENT A1 NW OFFSITE SURVEY MAP
Page 2 of 3

NORTHWEST 5 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
Q.3.1	Intersection of Rt's 168 & 68	Good
P.5.1	Intersection of Rt. 68 and Calcutta-Smith Ferry Rd.	Good
P.6.1	Top of Hill Calcutta-Smith Ferry Rd. East of Fisher Ave.	Good
N.6.1	Intersection of Parkway Rd. & Ohio Rt. 39	Good

NORTHWEST 10 MILE ROUTE

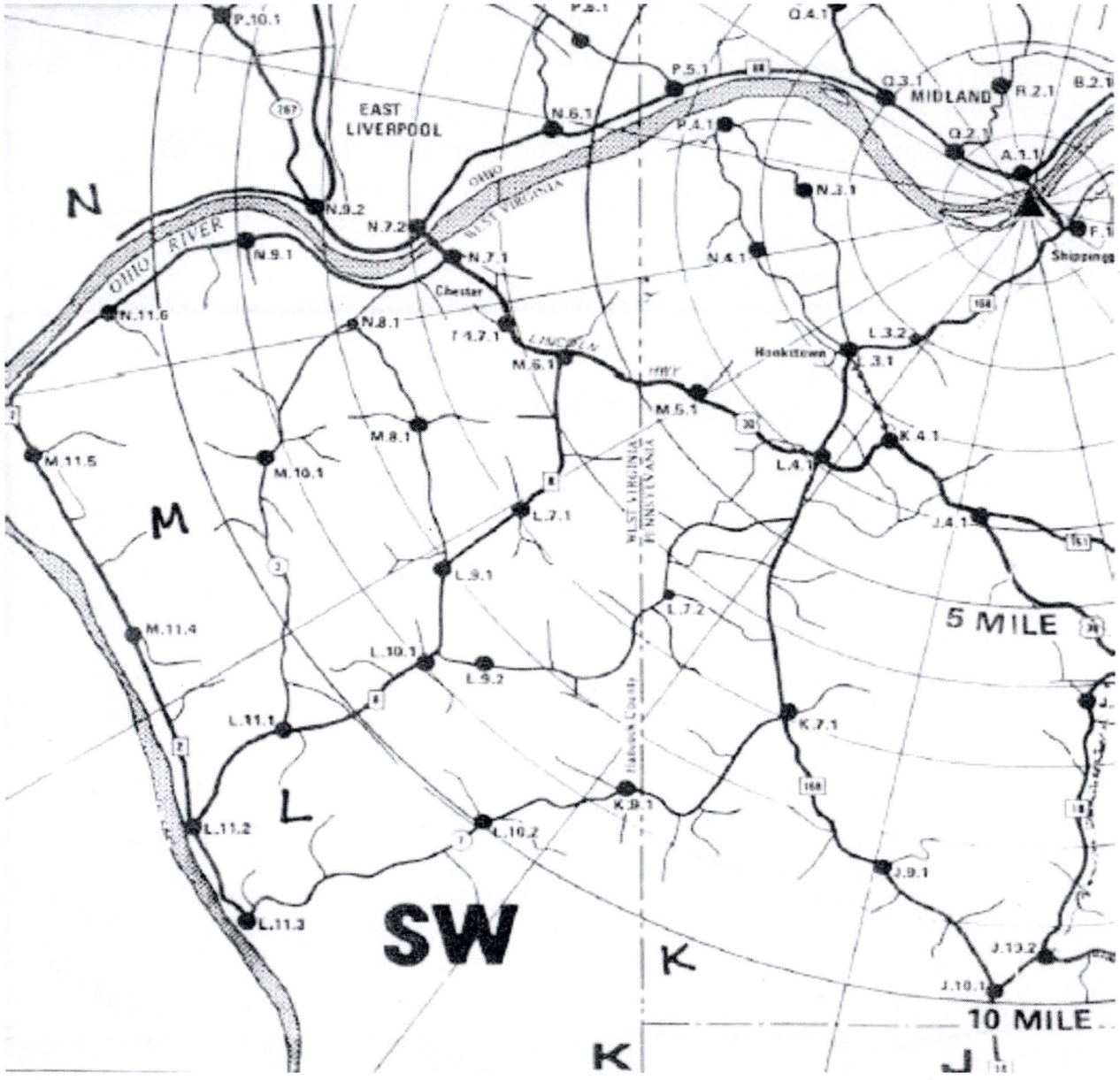
POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
A.1.1	Rt. 168 Bridge on Midland side of Ohio River	Good
Q.3.1	Intersection of Rt. 168 & 68	Good
Q.4.1	Rt. 168 & Eastwood Dr.	Good
Q.5.1	Ohioville Vol. Fire Dept. off Rt. 168	Good
R.8.1	Intersection of Rt. 168 & Lisbon Rd.	Good
R.10.1	Intersection of Rt's 251 & 168	Fair
R.11.1	Intersection of Rt. 251 & State Gamelands Rd.	Poor
R.11.2	Intersection of Rt's 170 & 251	Poor
Q.11.1	Intersection of Rt. 170 & Clarkson Pancake Rd.	Good
Q.11.2	Intersection of Rt. 170 & Frederickstown Clarkson Rd.	Good
Q.9.1	Intersection of Rt. 170 & Frederickstown Rd.	Good
P.9.1	Intersection of Rt. 170 & Calcutta-Smith Ferry Rd.	Good
P.10.1	Intersection of Rt. 267 & T928 (Irish-Ridge Rd)	Good
N.9.2	Intersection of Rt's 267 & 39/7 (School)	Fair
N.7.2	Emergency stopping area before Ohio/W.Va. Bridge Rt. 30	Good
P.5.1	Intersection of Rt. 68 & Calcutta-Smith Ferry Rd.	Good

ATTACHMENT A1 NW OFFSITE SURVEY MAP
Page 3 of 3

NORTHWEST ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
A.1.1	Rt. 168 Bridge on Midland Side of Ohio River	Good
Q.3.1	Intersection of Rt. 168 & 68	Good
P.6.1	Top of Hill Calcutta-Smith Ferry Rd. East of Fisher Ave.	Good
N.6.1	Intersection of Parkway Road & Ohio Rt. 39	Poor
Q.4.1	Entrance to Meadowbrook Estates, Rt. 168 & Eastwood Dr.	Good
Q.5.2	Intersection of Tuscarawas Rd. and Rte. 168	Good
Q.5.1	Ohioville Vol. Fire Dept. off Rt. 168	Good
R.8.1	Intersection of Rt. 168 & Lisbon Rd.	Good
R.10.1	Intersection of Rt's 251 & 168	Fair
R.11.1	Intersection of Rt. 251 & State Gamelands Rd.	Poor
R.11.2	Intersection of Rt's 170 & 154	Poor
Q.11.1	Intersection of Rt. 170 & Clarkson Pancake Rd.	Good
Q.11.2	Intersection of Rt. 170 & Fredrickstown Clarkson Rd.	Good
Q.9.1	Intersection of Rt. 170 & Frederickstown Rd.	Poor
P.9.1	Intersection of Rt. 170 & Calcutta-Smith Ferry Rd.	Good
P.10.1	Intersection of Rt. 267 & T928 (Irish-Ridge Rd)	Good
N.9.2	Intersection of Rt's 267 & 39/7 (School)	Good
N.7.2	Emergency stopping area before Ohio/W.Va. Bridge Rt. 30	Good
P.5.1	Intersection of Rt. 68 & Calcutta-Smith Ferry Rd.	Good
P.6.1	Top of hill Calcutta-Smith Ferry Rd. East of Fisher Ave.	Good
P.7.1	Calcutta Church (Calcutta-Smith Ferry Rd.)	Good

ATTACHMENT A2 SW OFFSITE SURVEY MAP
Page 1 of 4



ATTACHMENT A2 SW OFFSITE SURVEY MAP
Page 2 of 4

SOUTHWEST 5 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
L.3.1	Post Office in Hookstown	Good
L.4.1	Intersection of Rt. 168 & Rt. 30	Good
J.4.1	Intersection of Rt. 30 & Tr. 151	Good
H.5.1	Intersection of Rt. 151 & Rt. 18	Good
H.6.2	Intersection of Rt. 18 & Rt. 30	Fair
M.5.1	West on Rt. 30, 1.2 miles Past L.4.1 or East on Rt. 30, 1.2 miles Past M.6.1	Good
M.6.1	Intersection of Rt. 30 & Rt. 8	Good
N.7.1	West Virginia-Ohio Bridge, Rt. 30	Good
N.6.1	Intersection of Rt. 39 & Parkway	Good
Q.2.1	Entrance to J&L Steel, Rt. 68 Midland	Good
A.1.1	Midland Side of Rt. 168 Bridge	Good

SOUTHWEST 10 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
L.3.1	Post Office in Hookstown	Good
L.4.1	Intersection of Rt. 168 & Rt. 30	Good
J.4.1	Intersection of Rt. 30 & Tr. 151	Good
H.5.1	Intersection of Rt. 151 & Rt. 18	Good
H.6.2	Intersection of Rt. 18 & Rt. 30	Fair
J.10.1	Intersection of Rt. 18 & Rt. 168	Good
J.9.1	Entrance to Youth Forestry Camp Rt. 168	Good
K.7.1	Intersection of Hanover-Kendal Rd. & Rt. 168, 2.7 miles from J.9.1 or 3.3 miles from L.A.1	Good
K.9.1	Intersection of Rt. 7 & Rt. 24	Good
L.10.2	Intersection of Rt. 7 & Rt. 26, (Florence Rd.) Sewage Lift Station	Good
L.11.3	Intersection of Rt. 2 & Rt. 7, (Hardin's Run)	Fair

ATTACHMENT A2 SW OFFSITE SURVEY MAP
Page 3 of 4

SOUTHWEST 10 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
L.11.2	Intersection of Rt. 2 & Rt. 8	Good
M.11.4	Bridge of Tomlinson Lake, Rt. 2	Good
M.11.5	Intersection of Rt. 2 & Rt. 208	Good
N.11.6	Intersection of Rt. 2 & Rt. 3/6, R.R. Crossing	Good
N.9.1	Intersection of Rt. 2 & Rt. 1	Good
N.7.1	West Virginia-Ohio Bridge, Rt. 30	Good
N.6.1	Intersection of Rt. 39 & Parkway	Good
Q.2.1	Entrance to J&L Steel Rt. 68 Midland	Good
A.1.1	Midland Side of Rt. 168 Bridge over Ohio	Good
L.4.1	Intersection of Rt. 168 & Rt. 30	Good

SOUTHWEST ROUTE

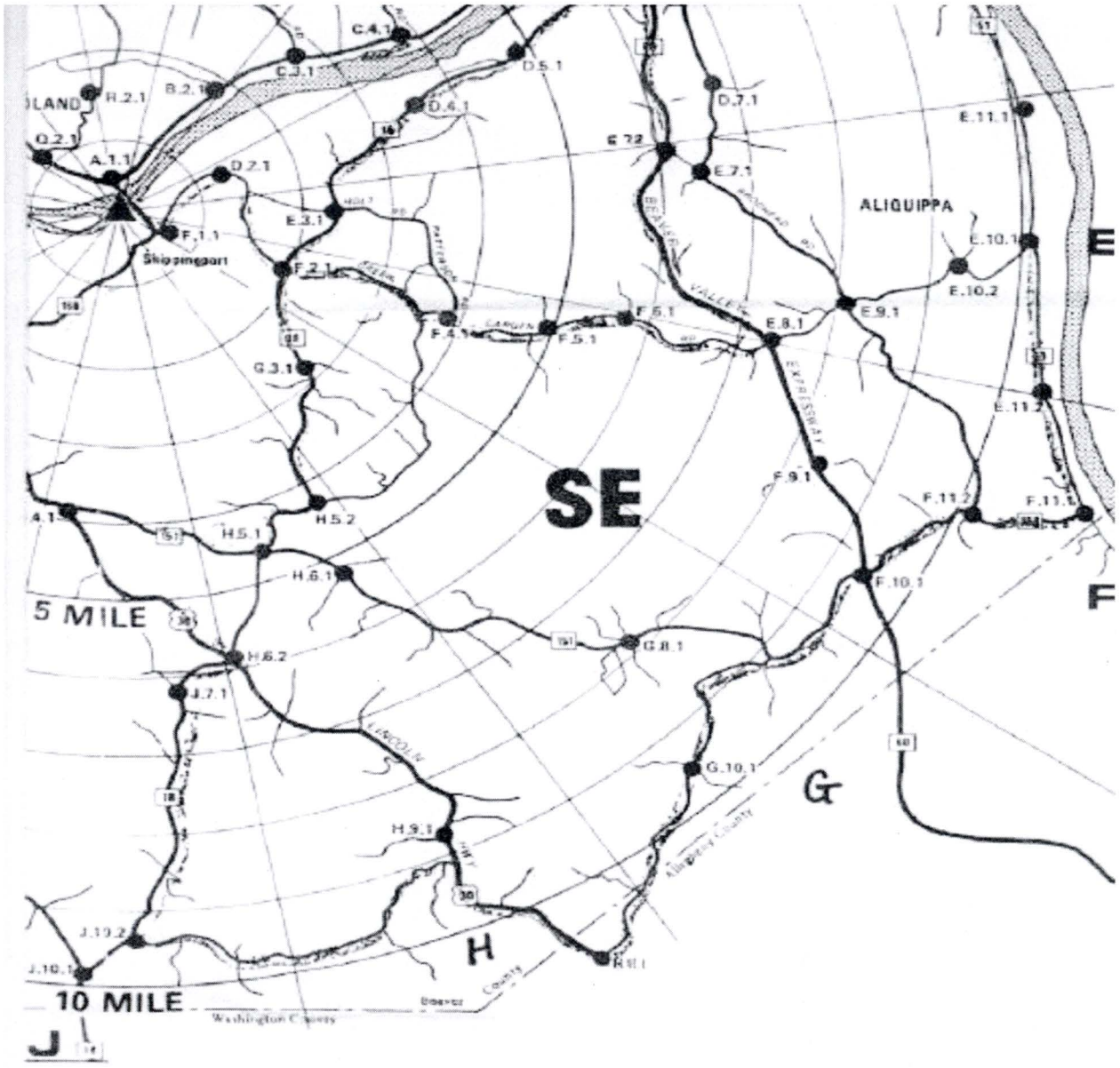
POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
L.3.1	Post Office in Hookstown	Good
L.4.1	Intersection of Rt. 168 & Rt. 30	Good
J.4.1	Intersection of Rt. 30 & Tr. 151	Good
H.5.1	Intersection of Rt. 151 & Rt. 18	Good
H.6.2	Intersection of Rt. 18 & Rt. 30	Fair
J.10.1	Intersection of Rt. 18 & Rt. 168	Good
J.9.1	Entrance to Youth Forestry Camp Rt. 168	Good
K.7.1	Intersection of Hanover Rd. & Rt. 18, 2.7 miles from L.4.1	Good
M.5.1	West on Rt. 30, 1.2 miles Past L.4.1 or East or East on Rt. 30, 1.2 miles Past M.6.1	Good
M.6.1	Intersection of Rt. 30 & Rt. 8	Good
N.7.1	West Virginia-Ohio Bridge, Rt. 30	Good
A.1.1	Midland Side of Rt. 168 Bridge	Good
Q.2.1	Entrance to J&L Steel, Rt. 68 Midland	Good
N.6.1	Intersection of Rt. 39 & Parkway Rd.	Good

ATTACHMENT A2 SW OFFSITE SURVEY MAP
Page 4 of 4

SOUTHWEST ROUTE

POINT	LOCATION	RADIO COMMUNICATION
N.4.1	Second Bridge Past Hookstown Intersection	Good
P.4.1	Georgetown Sand & Gravel	Good
N.3.1	Top of Hill Next to DLCO Radio Tower	Good
L.7.1	Intersection of Rt. 8 & Rt. 14	Good
L.9.1	Intersection of Rt. 8 & Rt. 5	Good
L.10.1	Tomlinson Run State Park Entrance, Rt. 8	Good
L.11.1	Intersection of Rt. 8 & Rt. 3	Good
L.9.2	Oak Glen High School, County Rd. 18	Good
L.7.2	Intersection of Pumpkin Hollow Rd. & Gas Valley Rd.	Fair
N.9.1	Intersection of Rt. 2 & Rt. 1	Good
N.11.6	Intersection of Rt. 2 & Rt. 3/6, RR Crossing	Good
M.11.5	Intersection of Rt. 2 & Rt. 208	Good
M.11.4	Bridge Over Tomlinson Lake, Rt. 2	Good
L.11.2	Intersection of Rt. 2 & Rt. 8	Good
L.11.3	Intersection of Rt. 2 & Rt. 7, (Hardin's Run)	Fair
L.10.2	Intersection of Rt. 7 & Rt. 26, (Florence Rd.)	Good
K.9.1	Intersection of Rt. 7 & Rt. 24	Good
M.10.1	Intersection of Rt. 3 & Rt. 208	Good
N.8.1	Intersection of Rt. 3/2 & Rt. 5	Good
M.8.1	Intersection of Rt. 5 & Rt. 208	Good

ATTACHMENT A3 SE OFFSITE SURVEY MAP
Page 1 of 4



ATTACHMENT A3 SE OFFSITE SURVEY MAP
Page 2 of 4

SOUTHEAST 5 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
D.2.1	Bruce Mansfield Plant Entrance	Good
F.2.1	Intersection of Rt. 18 & Green Garden Rd.	Good
E.3.1	Intersection of Rt. 18 & Holt Rd.	Good
D.4.1	"Y" in road at Rt. 18 and Mowry Rd.	Good
D.5.1	Main Plant Entrance NOVA CHEMICALS, Rt. 18	Good
D.6.1	Zinc Corp. of American Entrance, Rt. 18	Good
E.7.2	Center Exit of Rt. 60	Good
E.8.1	Aliquippa Exit of Rt. 60 at Green Garden Rd.	Good
F.6.1	Intersection of Penny Hollow Park Rd. & Green Garden Road	Good
F.4.1	Raccoon Elementary School near Intersection of Green Garden Rd. & Patterson Rd.	Good
G.3.1	Superior Mobile Homes, Rt. 18 and Calhoun Rd.	Good
H.5.1	Intersection of Rt's 18 & 151	Good
J.4.1	Intersection of Rt's 30 & 151	Good
L.3.1	Post Office in Hookstown	Good

SOUTHEAST 10 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
D.2.1	Bruce Mansfield Plant Entrance	Good
F.2.1	Intersection of Rt. 18 & Green Garden Rd.	Good
E.3.1	Intersection of Rt. 18 & Holt Rd. 1.1 mile from F2.1	Good
D.4.1	"Y" in road at Rt. 18 and Mowry Rd.	Good
D.5.1	Main Plant Entrance NOVA CHEMICALS, Rt. 18	Good
D.6.1	Zinc Corp. of American, Rt. 18	Good
D.8.1	Intersection of Rt's 18 & 51, Beaver Valley Mall	Good
D.9.1	Walmart Plaza, Rt. 18/51	Good

ATTACHMENT A3 SE OFFSITE SURVEY MAP
Page 3 of 4

SOUTHEAST 10 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
D.10.1	Pheonix Glass Parking Lot, Penn Ave., Monaca	Good
D.10.2	Pull-off area up hill from Intersection of Constitution Blvd. and Monaca Rd.	Good
E.11.1	Entrance to West Aliquippa, Constitution Blvd. (West of Aliquippa side of bridge)	Good
E.10.1	Intersection of Constitution & Franklin Ave. (Old Entrance to J&L Steel Plant)	Good
E.10.2	Intersection of Franklin Ave. & Kennedy Blvd., Aliq.	Good
E.11.2	Steel Mill Rd. by Ambridge-Aliquippa Bridge	Fair
F.11.1	Phillips Power Station, Constitution Blvd./Rt. 51	Poor
F.11.2	Intersection of Rt's 51 & 151	Good
F.10.1	Intersection of Rt's 151 & 60, 60 overpasses 151	Good
G.10.1	2nd Intersection Past Booktown (off Rt. 151)	Good
H.11.1	Janoskis Farm Rt. 30 - Allegheny Co.	Fair
H.9.1	Raccoon Park Entrance, Rt. 30	Fair
J.10.1	Intersection of Rt's 18 & 168	Good
H.6.2	Intersection of Rt's 18 & 30	Fair
J.4.1	Intersection of Rt's 30 & 151	Good
L.3.1	Post Office in Hookstown	Good

SOUTHEAST ROUTE

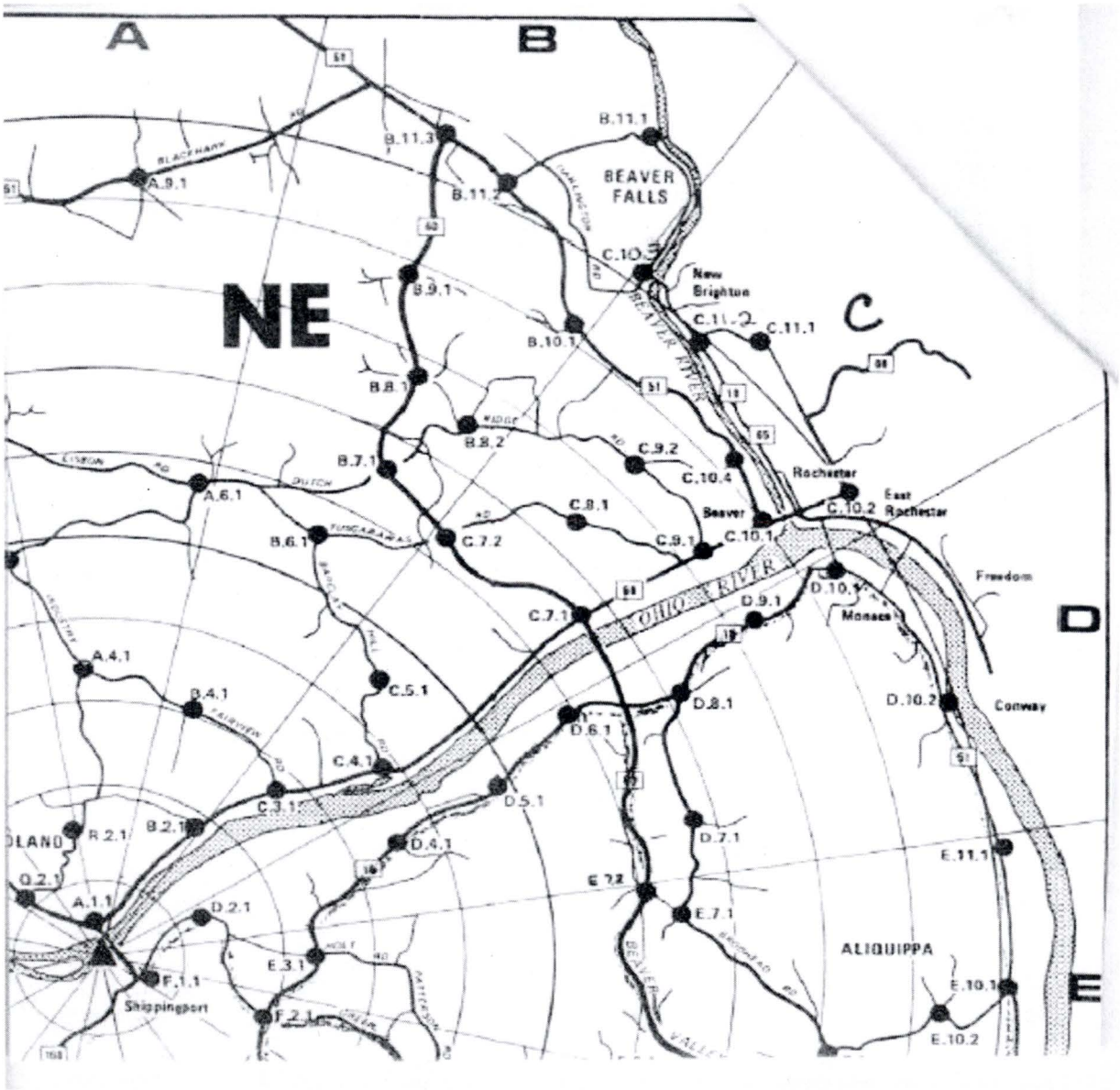
POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
D.2.1	Bruce Mansfield Plant Entrance, Rt. 18	Good
F.2.1	Intersection of Rt. 18 & Green Garden Rd.	Good
E.3.1	Intersection of Rt. 18 & Holt Rd.	Good
D.4.1	"Y" in road at Rt. 18 and Mowry Rd.	Good
D.5.1	Main Plant Entrance NOVA CHEMICALS, Rt. 18	Poor
D.8.1	Intersection of Rt's 18 & 51, Beaver Valley Mall	Good
D.9.1	Walmart Plaza, Rt. 18/51	Good
D.10.1	Pheonix Glass Parking Lot, Penn Ave., Monaca	Good

ATTACHMENT A3 SE OFFSITE SURVEY MAP
Page 4 of 4

SOUTHEAST ROUTE (Continued)

POINT	LOCATION	RADIO COMMUNICATION
D.10.2	Pull-off area up hill from Intersection of Constitution Blvd. and Monaca Rd.	Good
E.9.1	Intersection of Brodhead Rd. and Kennedy Blvd.	Good
E.11.1	Entrance to West Aliquippa, Constitution Blvd. (West Aliquippa side of bridge)	Good
E.10.1	Entrance to Aliquippa from Constitution Blvd.	Good
E.10.2	Inter. of Franklin Ave. & Kennedy Blvd., Aliq	Good
E.11.2	Steel Mill Rd. by Ambridge-Aliquippa Bridge	Fair
F.11.1	Phillips Power Station, Constitution Blvd./Rt. 51	Poor
F.11.2	Intersection of Rt's 51 & 151	Good
F.10.1	Intersection of Rt. 151 and Rt. 60, 60 overpasses 151	Good
H.11.1	Mazzaro Coal- right side Rt. 30 - Allegheny Co.	Fair
H.9.1	Raccoon Park Entrance, Rt. 30	Fair
J.10.1	Intersection of Rt's 18 & 168	Good
G.8.1	Steel Bridge on Rt. 151	Good
H.6.1	2 Miles east from 18 & 151 Intersection or 2 Miles west on Rt. 151 from G.8.1	Good
H.5.1	Intersection of Rt's 151 & 18	Good
H.6.2	Intersection of Rt's 18 & 30	Fair
G.3.1	Superior Mobile Homes, Rt. 18 and Calhoun Rd.	Good
L.3.1	Post Office in Hookstown	Good
D.7.1	Entrance to Community College of Beaver County, Brodhead Road	Good
E.7.1	BCTA Expressway Travel Center off of Rt. 60 Ramp	Good
E.7.2	Center Exit of Rt. 60	Good
F.9.1	Bridge on Rt. 60, 1.6 miles north of Hopewell exit	Good
E.8.1	Aliquippa Exit of Rt. 60 at Green Garden Rd.	Good
F.6.1	Penny Hollow Park Rd. & Green Garden Rd.	Good
F.4.1	Raccoon Elementary School near Intersection of Green Garden Rd. & Patterson Rd.	Good
G.10.1	2nd Intersection past Booktown (off Rt. 151)	Good

ATTACHMENT A4 NE OFFSITE SURVEY MAP
Page 1 of 4



ATTACHMENT A4 NE OFFSITE SURVEY MAP
Page 2 of 4

NORTHEAST 5 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
A.1.1	Rt. 168 Bridge on the Midland side of Ohio River	Good
B.2.1	Red Brick Bldg. on left side of Rt. 68, 1.5 m from A.1.1	Good
C.3.1	Intersection of Rt. 68 & Engle Rd.	Good
C.4.1	Intersection of Rt. 68 & Barclay Hill Rd.	Good
C.5.1	Inter. of John E. Gray Dr. & Barclay Hill Rd.	Good
B.6.1	Intersection of Barclay Hill Rd. & Tuscarawas Rd.	Good
A.6.1	Intersection of Lisbon Rd. and Tuscarawas Rd.	Good
R.5.1	Intersection of Engle Rd. & Tuscarawas Road	Good
R.5.2	Intersection of Tuscarawas Rd. & Rt. 168	Good
Q.4.1	Intersection on Rt. 168, Eastwood Rd.	Good
Q.3.1	Intersection of Rt. 168 and Rt. 68	Good

NORTHEAST 10 MILE ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
A.1.1	Rt. 168 Bridge on the Midland side of Ohio River	Good
B.2.1	Red Brick Bldg. on left side of Rt. 68, 1.5 m from A.1.1	Good
C.3.1	Intersection of Rt. 68 & Engle Rd.	Good
C.4.1	Intersection of Rt. 68 & Barclay Hill Rd.	Good
C.7.1	Intersection of Rt. 68 & Rt. 60 Rt. 68 overpasses Rt. 60	Good
C.9.1	Beaver County Courthouse, Rt. 68	Good
C.10.1	Intersection of Rt's 68 & 51, 68 overpasses 51	Good
C.10.2	Huntsman Funeral Home at right angle bend in Rt. 68	Good
C.11.1	Four way intersection at bottom of Marion Hill	Good

ATTACHMENT A4 NE OFFSITE SURVEY MAP
Page 3 of 4

NORTHEAST 10 MILE ROUTE (Continued)

POINT	LOCATION	RADIO COMMUNICATION
C.10.3	Morrow Ford across bridge over Beaver River, Rt. 18	Good
B.11.1	3 way inter. at Geneva College Athletic complex	Fair
B.11.3	Intersection of Rt's 60 & 51 at Chippewa	Fair
C.11.2	Diamond Milling near N. Brighton/ Beaver Falls Bridge	Good
C.10.4	Inter. of Rt 51 & Sharon Rd.	Good
A.9.1	Blackhawk Public Golf Course, Rt. 251	Good
R.10.1	Intersection of Rt's 251 & 168	Fair
R.8.1	Intersection of Lisbon Rd. & Rt. 168	Good
Q.5.1	Ohioville Vol. Fire Dept., Rt. 168	Good
Q.4.1	Intersection on Rt. 168, 2.3m from Q.5.1	Good
Q.3.1	Intersection of Rt's 168 & 68, Midland	Good

NORTHEAST ROUTE

POINT	LOCATION	RADIO COMMUNICATION
F.1.1	Plant Entrance	Good
Q.3.1	Intersection of Rt's 168 & 68, Midland	Good
A.1.1	Rt. 168 Bridge on the Midland side of Ohio River	Good
B.2.1	Red Brick Bldg. on left side of Rt. 68, 1.5 m from A.1.1	Good
C.3.1	Intersection of Rt. 68 & Industry Engle Rd.	Good
C.4.1	Intersection of Rt. 68 & Barclay Hill Rd.	Good
C.7.1	Intersection of Rt. 68 & Rt. 60 Rt. 68 overpasses Rt. 60	Good
C.9.1	Beaver County Courthouse, Rt. 68	Good
C.10.1	Intersection of Rt's 68 & 51, 68 overpasses 51	Good
C.10.2	Huntsman Funeral Home at right angle bend in Rt. 68	Good

ATTACHMENT A4 NE OFFSITE SURVEY MAP
Page 4 of 4

NORTHEAST ROUTE (Continued)

POINT	LOCATION	RADIO COMMUNICATION
C.10.3	Morrow Ford across bridge over Beaver River, Rt. 18	Good
B.11.1	Three-way Inter. at Geneva College Athletic Complex	Good
B.11.2	Intersection of Rt's 588 & 51	Good
B.10.1	Top of Fallston Hill Golf Course	Good
C.10.4	Intersection of Rt. 51 and Beaver Hollow Rd.	Good
C.8.1	Top of Hill on Tuscarawas Rd. at Walington Estates	Good
C.7.2	Intersection of Tuscarawas Rd. and Rt. 60	Good
C.5.1	Inter. of John E. Gray Dr. & Barclay Hill Rd.	Good
B.6.1	Intersection of Barclay Hill Rd. & Tuscarawas Rd.	Good
A.6.1	Intersection of Lisbon Rd. and Tuscarawas Rd.	Good
R.7.1	Intersection on Lisbon Rd. & Ridgemont Rd.	Good
R.8.1	Intersection of Lisbon Rd. & Rt. 168	Good
R.10.1	Intersection of Rt's 168 & 251	Poor
A.9.1	Blackhawk Public Golf Course, Rt. 251	Poor
Q.5.1	Ohioville Vol. Fire Dept., Rt. 168	Good
Q.4.1	Intersection on Rt. 168 & Eastwood Rd.	Good
Q.3.1	Intersection of Rt's 168 & 68	Good
B.11.3	Intersection of Rt's 60 & 51	Fair
B.9.1	Bridge on Rt. 60 over Brady's Run County Park	Good
B.7.1	Intersection of Dutch Ridge Rd. and Rt. 60	Good
C.7.2	Intersection of Tuscarawas Rd. and Rt. 60	Good
B.4.1	Western Beaver High School	Good
C.9.2	Beaver County Medical Center--Dutch Ridge Rd.	Good
R.5.1	Intersection of Engle Rd. & Tuscarawas Rd.	Good
R.5.2	Intersection of Tuscarawas Rd. and Rt. 168	Good

ATTACHMENT A5 AIR SAMPLE RECORD CARD
Page 1 of 1

AIR SAMPLE RECORD CARD AF.715EA

Air sample locations: _____

Date: _____ Surveyor: _____

Sample ID# _____

Sampler Flow Rate ft^3/min _____

Sample time: (10 ft^3 / Sampler Flow Rate cfm): _____

Sample Start Time: _____ Stop Time: _____

Sample Volume: _____

ATTACHMENT A6 RADIO PROTOCOL
Page 1 of 2

Because radio communications is one way at a time (unlike a telephone), the use of a standard protocol is necessary to minimize confusion, speed operation and insure accurate transfer of information.

1) Begin a transmission with the name of the receiving party followed by the name of the transmitting party. For example, "Beaver Valley EA&DP this is Field Monitoring Team One, over". Wait for the receiving party to acknowledge before relaying data. During a series of exchanges, terminate each transmission with "over" to indicate to the other person that they may transmit. End the final transmission of a series with an appropriate termination phrase. For example, "Monitoring Team One out".

2) Controlling group (EA&DP, OSC) communicators must avoid general statements such as, "Monitoring teams report your dosimeter readings". This can result in confusion due to simultaneous transmissions by two or more teams. Direct such inquiries to each team in sequence. The only exception to this is if no response is needed from the individual teams.

3) Certain letters of the alphabet can be confused when said (V and B, P and B, as examples). When spelling words for clarity or giving alphabetic designators, use the standard International Phonetic Alphabet shown in Step 7. Monitoring locations D.2.1 becomes "Delta point two point one". For a word like bat., say "I spell-bravo, alpha, tango", giving the phonetics slowly.

4) Give numerical information as digits rather than reading it as a number. 2432 becomes two, four, three, two rather than two thousand four hundred thirty two. 35.7 becomes three, five, point, seven rather than thirty five and seven tenths.

5) Report data as specified in the Field Monitoring EPP/IPs - that is by block location on the forms and without units such as mR/hr., cubic ft., or cpm. If units must be given, say them out - millirem per hour, counts per minute, etc. Avoid jargon and abbreviations.

6) Insure correct data transferal by obtaining repeat backs of all data sent and provide repeat back or acknowledgment of messages received. (Three-way Communication)

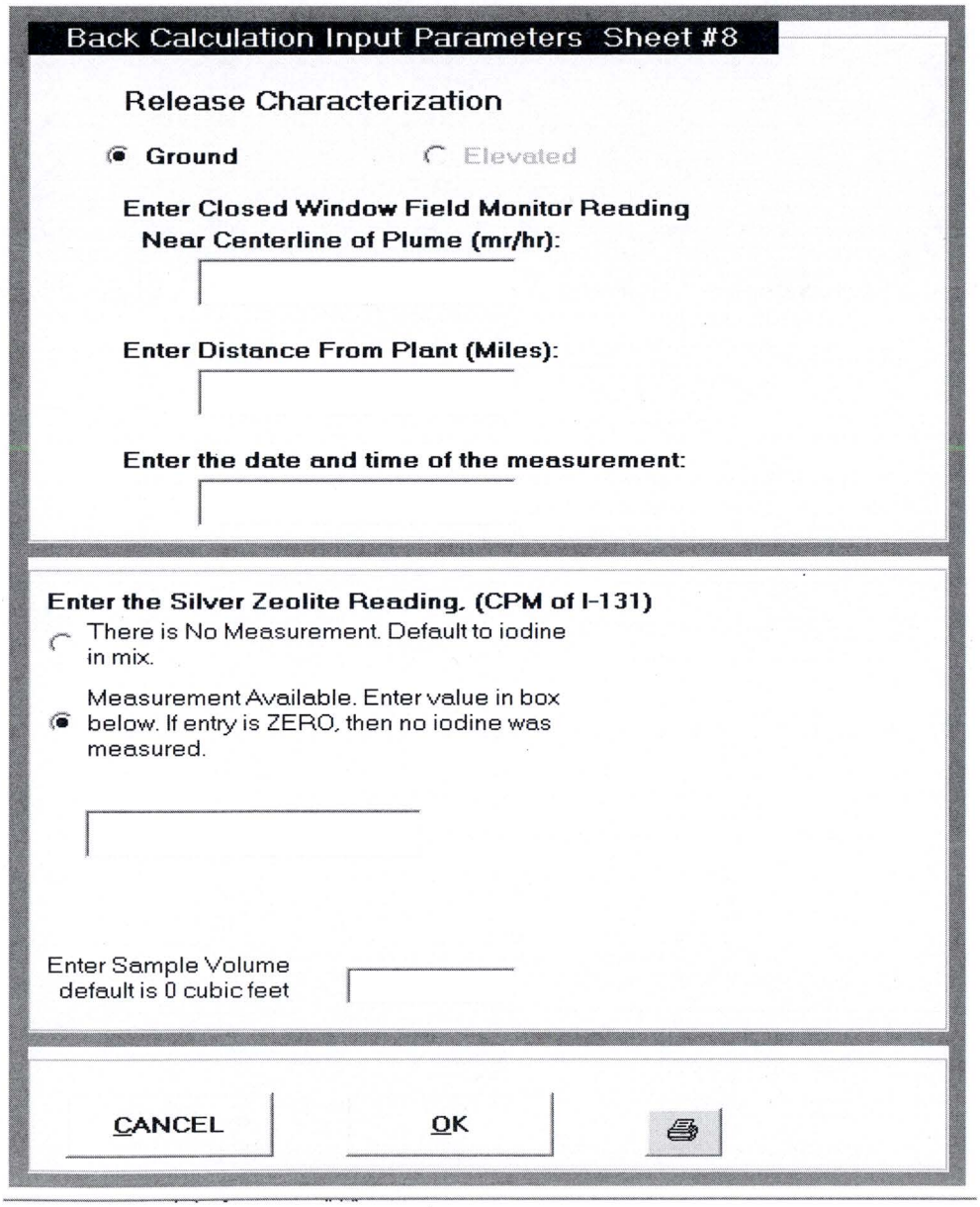
ATTACHMENT A6 RADIO PROTOCOL
Page 2 of 2

7) Avoid exclamatory or alarming statements. When you press the microphone button, you are making a public announcement because of the many scanners that can receive business band communications.

INTERNATIONAL PHONETIC ALPHABET

A-ALPHA	J-JULIETT	S-SIERRA
B-BRAVO	K-KILO	T-TANGO
C-CHARLIE	L-LIMA	U-UNIFORM
D-DELTA	M-MIKE	V-VICTOR
E-ECHO	N-NOVEMBER	W-WHISKEY
F-FOXTROT	O-OSCAR	X-XRAY
G-GULF	P-PAPA	Y-YANKEE
H-HOTEL	Q-QUEBEC	Z-ZULU
I-INDIA	R-ROMEO	

ATTACHMENT A7 MIDAS BACK CALCULATION FIELD SURVEY
Page 1 of 1



DBNPS RADIOLOGICAL SURVEYS FOR EMERGENCIES

TABLE OF CONTENTS

4.1 RESPONSIBILITIES

4.1.1 Emergency Response Manager (ERM): The Emergency Response Manager shall be responsible for accumulating and submitting records to Enterprise Records Management.

4.1.2 Field Radiation Monitoring Team (RMT): Field RMT's shall be responsible for distributing dosimetry to essential personnel within the Owner Controlled Area (including Warehouse and Security personnel), performing surveys, air sampling, and environmental sampling outside the Protected Area, as directed by the RMT Coordinator.

4.1.3 Radiation Monitoring Team (RMT) Coordinator: RMT Coordinator shall be responsible for coordinating and directing the activities of the Field RMT Teams.

4.1.4 Radiological Testing Lab (RTL) Coordinator: Is responsible for the implementation of procedure, RA-EP-02260, Radiological Controls in the Davis-Besse Administrative Building (DBAB).

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4.2 PROCEDURE DETAILS

4.2.1 RADIATION MONITORING TEAMS (RMT) INITIAL INSTRUCTIONS

NOTE
• Steps in this section may be performed simultaneously.

4.2.1.1 The number, make up, and activation of RMTs is per the Emergency Plan. RMT members sign in on the RMT Team and Pool Assignment Board, enter their estimated annual exposure to date, and obtain personnel dosimetry from the Cabinet #1 in the Radiological Test Lab.

1. Each RMT member posses:
   - One emergency Thermo-luminescent Dosimetry (TLD).
   - One Self-Reading Dosimetry (SRD), typically 0-500 mR.
2. **IF** the reading is greater than 20%, **THEN** re-zero the SRD.
3. Complete Dosimeter Record Form (DBEP-107).
4. When assigned to a team, they update the status board with their name and SRD reading.
5. The TLD and SRD are worn together on the outer clothing between the collar and waist. Ensure the TLD is close to the body with the TLD window facing away from the body.

4.2.1.2 While in the DBAB, RMT members perform as directed by the RTL Coordinator. **IF** the RTL Coordinator is not present, **THEN** a senior RMT member assumes this duty by referencing RA-EP-02260, Radiological Controls in the DBAB.

4.2.1.3 Field RMT activities are performed in accordance with the Attachments or forms identified in this procedure.

4.2.2 FIELD RADIATION MONITORING TEAM (RMT) ACTIVATION

4.2.2.1 Inform the RTL Coordinator of any problems encountered during Field RMT Activation.

4.2.2.2 Complete a Potassium Iodide (KI) Administration Form, (DBEP-106). The RTL Coordinator provides a KI briefing.

4.2.2.3 Locate a RMT Kit and an Environmental Sampling Kit.

4.2.2.4 **IF** the seal is **NOT** intact on either kit, **THEN** inventory the contents of the unsealed kit using RTL Inventory Form (DBEP-103).

4.2.2.5 Obtain a 0-5 R SRD from the RMT kit.

1. Re-zero SRD.

2. Wear SRD next to TLD and the other SRD.

NOTE

The RADeCO H-810DC is the preferred air sampler. The RADeCO H-809B (vehicle mounted) and the H-809C (battery operated) air samplers are alternatives if the H-810DC is not available.

4.2.2.6 Conduct an operational check of the survey meters in the RMT kits, and the air sampler, in accordance with Instrument Check Form (DBEP-0120). Report any problems to the RTL Coordinator.

4.2.2.7 **IF** assigned by the RTL Coordinator, **THEN** prepare and distribute Self Reading Dosimeters (SRDs) and TLDs to essential personnel in the Owner Controlled Area (OCA), excluding personnel inside the DBAB Emergency Response Facility (ERF). OCA essential personnel are normally issued dosimetry at a Site Area Emergency, but no later than a General Emergency. Prepare dosimetry packets based on the number of personnel.

1. Determine the number of dosimetry packets as follows:

   a. Coordinate with the Emergency Security Manager in the Technical Support Center (TSC) to issue dosimetry to OCA Security officers and Local Law Enforcement Agency members (if applicable). Verify distribution and documentation have been completed.

   b. Coordinate with the OSC Materials Manager in the Operations Support Center (OSC) to determine location and number of supply chain personnel in the warehouse, DBAB Annex, etc. Verify distribution and documentation have been completed.

   c. Contact the Emergency Offsite Manager to determine if there are essential personnel other than Security and Supply Chain personnel in the OCA that require dosimetry. Verify distribution and documentation have been completed.

2. Re-zero all SRDs and place them in packets.

3. Sequentially number the SRD packet for distribution:

   a. W1 through W "x" for Warehouse personnel (where "x" is the number of identified personnel).

   b. S1 through S "x" for Security personnel (where "x" is the number of identified personnel).

4. Take Dosimeter Record Form (DBEP-107) for issue documentation when delivered.

5. Instruct person receiving dosimetry packet to complete issuance documentation and inform them that their TLD cannot be reassigned to another individual.

4.2.2.8 Obtain a Specialized Mobile Radio (SMR) handheld radio and the cell phone (for the assigned RMT vehicle) from Cabinet #1. Ensure both are turned on before leaving the RTL to assure communications.

4.2.2.9 When all equipment is checked and operating, report to the RTL Coordinator that the team is ready for field monitoring and receive a pre-job briefing using RMT Pre-Job Briefing Checklist Form (DBEP-0121).

4.2.2.10 When directed by the RTL Coordinator, receive a pre-job briefing from the RMT Coordinator using the RMT Pre-Job Briefing Checklist Form (DBEP-0121).

4.2.3 FIELD RADIATION MONITORING TEAM (RMT) OPERATION

NOTE

- RMT members are directed by the RMT Coordinator during field RMT Operations.

4.2.3.1 Monitor dose rates at all times when outside the Emergency Response Facilities (ERF) and vehicles.

4.2.3.2 Proceed to the RMT vehicle and verify that the following equipment is loaded into the vehicle before leaving the DBAB Emergency Response Facilities:

- RMT Kit
- Air sampler(s)
- Tripod for battery operated air sampler
- Environmental Sampling Kit
- At least one hand-held radio and cell phone that are turned on prior to leaving the facility to assure proper communications.

4.2.3.3 **IF** the RADeCO H-809B (vehicle mounted) air sampler is being used, **THEN** perform the following steps. Otherwise, proceed to Step 4.2.3.4.

1. Mount the air sampler on the vehicle.
2. Plug the power cable into the receptacle on the mount.
3. Ensure vehicle is running.
4. Remove the cover and/or tape from the filter holder.
5. Turn on the air sampler. Allow sampler to run for two to three minutes to warm up and stabilize flow.

6. After warm-up, ensure the flow meter indicates the calibrated flow rate.

7. Turn off the air sampler.

8. Replace the tape over the filter holder and tightly secure the cover over the air sampler.

4.2.3.4 While in the RMT vehicle, set the RO-2A or RSO-50 to the 0-50 R/hr range and keep it within reach in case area radiation levels exceed 5 R/hr.

1. Remove the BICRON ANALYST or equivalent count rate meter and have it on and accessible for early plume detection.

4.2.3.5 Keep the vehicle running with SMR radio on at all times.

4.2.3.6 When away from the DBAB, conduct a communications check before leaving the site with both the radio and cell phone.

1. **IF** all radios become inoperable in the field, **THEN** contact the RMT Coordinator via telephone using numbers listed in the RMT vehicle.

4.2.3.7 As directed by the RTL Coordinator, distribute personnel dosimetry to essential personnel within the OCA.

1. Proceed to the locations of Security personnel outside the Protected Area.

   a. Distribute personnel dosimetry to Security personnel.

   b. Fill out the Dosimeter Record Form (DBEP-107) for personnel dosimetry issued.

   c. Ensure personnel understand their responsibility for dosimetry issued to them.

   d. Keep dosimetry records in your possession until returning to the RTL.

2. Proceed to the Warehouse.

a. Distribute personnel dosimetry to Warehouse personnel.

b. Complete the Dosimeter Record Form (DBEP-107) for personnel dosimetry issued.

c. Ensure personnel understand their responsibility for dosimetry issued to them.

d. Keep dosimetry records in your possession until returning to the RTL.

3. Repeat the above steps for any other essential personnel, as directed by the RTL Coordinator.

4. Instruct personnel how to process dosimetry at the end of the shift.

5. Ensure dosimetry is available to oncoming shift.

4.2.3.8 Proceed in the RMT vehicle to assigned survey location when instructed by RMT Coordinator.

4.2.3.9 **IF** dose rates exceed 5 R/hr (or other dose rate limit specified during the pre-job brief), **THEN** the RMT's exit to a low dose rate and contact the RMT Coordinator.

NOTE

The open window reading will be higher than the closed window reading when actually immersed in the plume due to the beta contribution of the plume.

4.2.3.10 Observe survey meters for an upscale reading indicating that a radioactive plume has been encountered.

1. Obtain readings with survey meter beta shield open and closed positions to determine if plume has been entered.

4.2.3.11 Traverse the plume, and complete the plume survey data section of the RMT Field Survey Form (DBEP-105).

1. **IF** measured dose rate meets or exceeds the 'Turn Back" dose rate provided to the team in their Pre-Job Briefing, **THEN** immediately notify RMT Coordinator.

4.2.3.12 Monitor RMT personnel exposure.

1. Check personnel dosimetry after each traverse of the plume and record value in "RMT Dose" section of DBEP-105.

2. IF any RMT member approaches the "Turn Back" dose limit provided in the Pre-Job Briefing, **THEN** immediately notify the RMT Coordinator.

3. **IF** plume dose rate exceed 500 mR/hr (closed window), or SRD reaches 400 mR or greater, **THEN** convey applicable data to the RMT Coordinator.

   a. **IF** instructed to re-zero a SRD, **THEN** record the final reading, date and time along with the new initial reading on Dosimeter Record Form (DBEP-107) with date and time.

   b. Use the 0-5 R SRD as a backup if the other SRD over ranges or is dropped and is off scale.

4.2.3.13 **IF** plume dose rates do not exceed 500 mR/hr (closed window), **AND** open window readings are greater than closed-window readings, **THEN** proceed to the plume centerline and obtain an air sample in accordance with Section 4.2.5, Field Air Sampling.

4.2.3.14 Record air sampling data on the RMT Field Survey Form (DBEP-105) and report results to RMT Coordinator after leaving plume.

4.2.3.15 As directed, perform environmental sampling using the following attachments:

- (DB) Vegetation Sampling, Attachment B1
- (DB) Soil Sampling, Attachment B2
- (DB) Water Sampling, Attachment B3
- (DB) Snow Sampling, Attachment B4

4.2.3.16 Report to the RMT Coordinator that Environmental sampling is complete (as applicable).

4.2.3.17 Continue to monitor dose rates with the survey meter.

4.2.4 FIELD RMT DEACTIVATION:

4.2.4.1 Collect dosimetry that was issued to essential personnel in the Owner Controlled Area (OCA) and complete the Dosimeter Record Form (DBEP-107).

4.2.4.2 **IF** directed to return to the RTL, **THEN** return RMT vehicle to its parking spot near the DBAB ERF.

4.2.4.2 Return to the RTL.

1. Notify the RTL Coordinator of your arrival.

1. Perform personnel monitoring prior to entering the facility.

2. The RTL Coordinator will assist with personnel and equipment monitoring and decontamination.

4.2.4.3 Deliver all environmental samples to the RTL Coordinator.

1. Samples are delivered to the DBAB East Mechanical Equipment Vestibule door.

2. Place samples in an appropriate posted area as directed by the RTL Coordinator.

4.2.4.4 **IF** background radiation levels allow, **THEN** survey RMT vehicles for contamination.

1. Survey wheel wells, exterior of air filter, front grill/radiator, and door handles.

2. Document on Emergency Radiological Survey Form (DBEP-038).

3. Report survey results to RTL Coordinator.

4. Post vehicles as required.

4.2.4.6 Conduct a debriefing with the RMT Coordinator and return vehicle keys.

4.2.4.7 Debrief with the RTL Coordinator.

1. Complete and submit all recorded surveys.

2. Complete and submit Dosimeter Record Forms (DBEP-107).

3. Return personnel monitoring devices.

4. Report procedural or equipment problems.

5. Place radios and cell phones on chargers.

4.2.4.8 Inventory and restock RMT Kit and Environmental Sampling Kit according to RA-EP-00600. Ensure all survey instruments are turned off.

4.2.4.9 **IF** the radioiodine silver zeolite cartridge reading was greater than 100 net CPM, **THEN** complete Estimate of CEDE from Radioiodines Form (DBEP-0117) in accordance with RA-EP-02252, **AND** inform the RTL Coordinator of the results.

4.2.5 Radiation Monitoring Team - Field Air Sampling

NOTES

- Battery operated air samplers with tripods is the **preferred** method used for sampling elevated plume activity to reduce the dose to RMT members by minimizing the time spent in the plume.
- **IF** sampling while in plume, **THEN** monitoring is conducted for changes in dose rate.
- Center-line of plume is the **preferred** location for an air sample.
- Air samples are normally 10 cubic feet volume (approximately 10 minutes) unless otherwise directed by the RMT Coordinator.
- The RADeCO H-810DC is the preferred air sampler, since it is programmable for sample volume, and may be used with tripod when sampling high concentration plumes.

4.2.5.1 **IF** dose rate is greater than 500 mR/hr, **THEN** the air sampler is placed on the tripod (at waist level) and the RMTs exit the plume once started. **OTHERWISE** the air sampler may be set on the tailgate of the RMT vehicle, or the tripod used.

1.2.5.2 Obtain an air sample using the following:

1. **IF** using RADeCO H-810DC air sampler, **THEN** proceed to step 4.2.5.3.
2. **IF** using RADeCO H-809C (vehicle mounted air sampler), **THEN** proceed to step 4.2.5.4.
3. **IF** using RADeCO H-809B (battery powered) air sampler, **THEN** proceed to step 4.2.5.5.

4.2.5.3 RADeCO H-810DC battery operated air sampler operation:

1. Ensure that the filter assembly is properly installed with a particulate filter and a silver zeolite cartridge.

2. Setup the air sampler on the tripod, ensuring that the air sampler is approximately waist high.

3. Connect the air sampler power cord to the connector on the rechargeable power pack, ensuring the "+" and "-" terminals are aligned. The connectors snap together.

4. Place the rechargeable power pack output voltage switch in the "12 Volts" position.

5. Fully depress the white rocker switch on the side of the instrument fully to the "I" position.

6. Verify the display shows the calibrated flow rate range.

7. Press any key on the Air Flow Totalizer keypad and verify the display reads TARGET VOLUME 10 cubic feet.

8. Press the green "START" key on the Air Flow Totalizer keypad.

   a. The air sampler motor will automatically start and the Air Flow Totalizer will display the default warm-up delay of 2 seconds.

NOTE

A blinking FLOW RATE reading indicates the unit is running at a flow rate outside of its calibrated range (high or low). The filter assembly may not be properly installed or it may be clogged.

9. After the warm-up delay period, the Air Flow Totalizer will display current air sample flow rate (CFM), current air sample volume, elapsed air sample collection time, and elapsed air sample collection volume (cubic feet). Note the sample start time.

10. **IF** it is desired to obtain a sample volume less than the standard 10 cubic feet, **THEN** perform step 4.2.5.3.11. **Otherwise** proceed to step 4.2.5.3.12.

11. **IF** a sample less than the standard 10 cubic feet is desired, **THEN** the user will need to manually stop the sampling as follows:

    a. Verify the displayed current elapsed air sample volume.
    b. Press the red "STOP" key on the Air Totalizer keypad.
    c. Note the Air Flow Totalizer final sample volume and sample stop time.
    d. Proceed to step 4.2.5.13.

12. The air sampler will automatically stop when a sample collection of 10 cubic feet has been achieved. Verify the Air Flow Totalizer displays the final sample volume. Note the sample stop time.

13. Press the "CLEAR" key on the Air Totalizer keypad.

14. Turn off the air sampler by depressing the white rocker switch to the "0" position.

15. Place the rechargeable power pack output voltage switch in the "OFF" position.

16. Disconnect the air sampler power connector from the connector on the rechargeable power pack by grasping the connectors and pulling them apart.

17. Re-tape the inlet end of the filter assembly.

18. Place yellow waste bag over air sampler and tripod and place them in the vehicle.

19. Exit the plume and **GO TO** Step 4.2.5.6.

4.2.5.4 RADeCO H-809C vehicle mounted air sampler operations.

1. Remove the canvas protective cover on the air sampler.
2. Ensure that the filter assembly is properly installed with a particulate filter and a silver zeolite cartridge.
3. Point the sampler into the wind, but **DO NOT** face the sampler toward the vehicle.
4. Ensure the cord is plugged into the battery outlet and the vehicle is running.
5. **IF** your watch does not have a second hand, **THEN** obtain stopwatch from RMT kit.
6. Remove tape from filter assembly inlet.
7. Place the start switch to ON and note the sample time.
8. Ensure that the flow meter indicates the calibrated flow rate.
9. Return to inside the vehicle and close all windows.
10. Stop the sampler at the end of the sampling period by placing the start switch to OFF and note the sample stop time.
11. Re-tape the inlet end of the filter assembly.
12. Replace the canvas protective cover on the air sampler and secure tightly.
13. Exit the plume and **GO TO** step 4.2.5.6.

4.2.5.5 RadeCO H-809B battery operated air sampler operations:

1. Ensure that the filter assembly is properly installed with a particulate filter and a silver zeolite cartridge.

2. Setup the air sampler on the tripod, ensuring that the air sampler is approximately waist high.

3. **IF** your watch does not have a second hand, **THEN** obtain stopwatch from RMT kit.

4. Remove tape from filter assembly inlet.

5. Set the timer switches for the length of desired sample time.

   a. For a 10 minute sample – ensure the 2 minute and the 8 minute switches are in the 'ON" position. Ensure the 1 minute and 8 minute switches are in the "OFF" position.

   b. For a 5 minute sample, ensure the 1 minute and the 4 minute switches are in the "ON" position. Ensure the 2 minute and 8 minute switches are in the "OFF" position.

6. Push the black "START" button to begin sample collection and note the start time.

7. Ensure the flow meter indicates the calibrated flow rate.

8. Exit the plume until the sampling is complete (approximately ten minutes).

9. The air sampler will automatically stop when a sample collection of 10 cubic feet has been achieved. Verify the Air Flow Totalizer displays the final sample volume. Note the sample stop time.

10. Place yellow waste bag over air sampler and tripod and place them in the vehicle.

11. Exit the plume and **GO TO** step 4.2.5.6.

NOTES

- The following steps require contamination control measures. The measures will vary with the current radiological conditions.
- Teamwork is needed to avoid cross contamination of samples.
- Normal background dose rate is less than 0.2 mR/hr.

4.2.5.6 Drive to a low background area. Normally 300 counts per minute or less.

4.2.5.7 Prepare a plastic air sample bag from the kit and record the following information on the air sample bag label.

- Sample date
- Sample type
- Sample location (i.e. distance from the plant, Street Name)
- Record LI Number (frisker), calibration due date, meter reading
- Record LI Number (air sampler number) and calibration due date
- Flow rate/sample volume
- Sampled By
- Start Time
- Stop Time

4.2.5.8 Using care not to contaminate the area, carefully remove the filter media assembly from the sampler.

1. Remove the silver zeolite cartridge from the filter assembly and place into the labeled air sample bag, ensuring the collection side of the silver zeolite cartridge is facing toward the bag and seal the bag.

2. Remove the particulate filter from the filter assembly (tweezers may be required) and place into a separate bag from the silver zeolite cartridge, ensuring the collection side of the particulate filter is facing toward the bag, and seal the bag.

4.2.5.9 Clean the tweezers, if used, with decontamination cloth.

1. Ensure tweezers have no smearable contamination and return them to the kit.
2. Put used decontamination cloths into a yellow waste bag.

4.2.5.10 Reload air sampler with new silver zeolite filter cartridge and tape intake end of air sampler filter assembly.

4.2.5.11 Analyze the air sample media as follows:

1. Obtain BICRON ANALYST survey meter (or the equivalent) from the vehicle.
2. Ensure meter is on, and set to the lowest scale.
3. Holding Geiger-Mueller (GM) pancake detectors at arm's length from your body, take a background reading.
4. Take a contact reading on silver zeolite cartridge through the plastic bag.
5. Subtract background reading from contact reading and record as net reading on the air sample bag.
6. Place samples in a bag marked as radioactive material.
7. Record pertinent data on Field RMT Survey Record Form (DBEP-105).
8. Verify no smearable contamination exists external to the bag containing samples. Perform a contact dose rate survey on the outside with a survey meter **AND** mark the dose rate on the bag.

4.2.5.12 Return air sampling equipment to the vehicle avoiding cross contamination.

ATTACHMENT B: DAVIS-BESSE NUCLEAR POWER STATION RMT FIELD SURVEYS
Page 21 of 21

4.2.5.13 Report the following data to the RMT Coordinator/Dose Assessment Coordinator.

- Sample date/time
- Sample location (including distance from plant)
- Net cpm from silver zeolite cartridge
- Air sampler volume

4.2.5.14 Continue to monitor dose rate with the survey meter.

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ATTACHMENT B1: (DB) VEGETATION SAMPLING
Page 1 of 2

NOTE

Cross contamination of samples shall be avoided.

1. Don cotton liners and rubber gloves.
2. Examine large sample bag for cleanliness.
3. Obtain the 18" ruler from the environmental sampling kit.
4. **IF** grass is not available at the sample location, **THEN** obtain a sample of other vegetation as determined by the RMT Coordinator.
5. Define an approximate 18" square grass sample area in an undisturbed location at least 10 feet from roadway traffic.
6. Perform a radiation survey approximately 1" above grass using either a frisker or survey meter. Be cautious not to contaminate probe.
7. Record the counts per minute (cpm) or dose rate reading on the sample bag.
8. Complete the sample bag label (Date/Time/Location/Sampler).
9. Obtain the clippers from the environmental sampling kit.
10. Use the clippers to collect the grass or vegetation within the sampling square by trimming the vegetation to the soil surface.
11. Deposit the sample into the vegetation sample bag.
12. Wipe the clippers with decon cloth and monitor both for contamination. Repeat with clean section of decon cloth, if necessary.
13. Ensure clippers and ruler have no smearable contamination and return the clippers and ruler to the environmental sampling kit.
14. Put decon cloth, gloves, and glove liners into yellow waste bag.

ATTACHMENT B1: (DB) VEGETATION SAMPLING
Page 2 of 2

15. Place the sample bag into another yellow bag.

16. Take contact dose rate on yellow bags **AND** record the dose rate on the outside of the bags.

17. Report to the RMT Coordinator that vegetation sampling has been completed.

18. Continue to monitor dose rates with the survey meter.

ATTACHMENT B2: (DB) SOIL SAMPLING
Page 1 of 2

NOTE

Cross contamination of samples is to be avoided.

1. Don cotton liners and rubber gloves.
2. Examine large sample bag for cleanliness.
3. Obtain the 18" ruler from the environmental sampling kit.
4. Define an approximate 18" square sample area in an undisturbed location at least 10 feet from roadway traffic.
5. Perform a radiation survey approximately 1" above ground using either a frisker or survey meter.
6. Record the counts per minute (cpm) or dose rate reading on the sample bag.
7. Complete the sample bag label.
8. Obtain the trowel from the environmental sampling kit.
9. Collect the soil sample, including roots (if vegetated), to a depth of 1". **IF** precipitation has collected in sample area, **THEN** contact RMT Coordinator for guidance.
10. Transfer the sample to the soil sample bag.
11. Wipe the trowel and ruler with decon cloth and monitor for contamination. Repeat with clean section of decon cloth, if necessary.
12. Ensure the trowel and ruler has no smearable contamination and return the trowel and ruler to the kit.
13. Put decon cloth, gloves, and glove liners into yellow waste bag.
14. Place the sample bag into another yellow bag.

ATTACHMENT B2: (DB) SOIL SAMPLING
Page 2 of 2

15. Take contact dose rate on yellow bags **AND** record the dose rate on the outside of the bags.

16. Report to the RMT Coordinator that Soil sampling has been completed.

17. Continue to monitor dose rates with the survey meter.

ATTACHMENT B3: (DB) WATER SAMPLING
Page 1 of 2

NOTE

Cross contamination of samples is to be avoided.

1. Don cotton liners and rubber gloves.
2. Obtain cubitainer from environmental sampling kit and examine it for cleanliness.
3. Obtain dipper from kit and examine it for cleanliness.
4. Rinse dipper by taking a sample away from the vicinity where the final sample will be taken **AND** discard to the bank or ground.
5. Take water sample by skimming the surface of the water with the dipper.
6. Perform a radiation survey approximately 1" above the dipper using either a frisker or survey meter.
7. Transfer sample to cubitainer and repeat until cubitainer is full.
8. Cap cubitainer.
9. Use paper towel to wipe off excess water from the cubitainer and dipper.
10. Wipe dipper with clean decon cloth and monitor for contamination. Repeat with clean, dry section of decon cloth if necessary.
11. Ensure the dipper has no smearable contamination and put dipper back in the kit.
12. Record the reading on the sample bag.
13. Record survey results, and complete cubitainer label.
14. Bag the cubitainer in a yellow bag.
15. Take contact dose rate on yellow bags **AND** record the dose rate on the outside of the bags.

ATTACHMENT B3: (DB) WATER SAMPLING
Page 2 of 2

16. Discard gloves, glove liners, and used paper towels/decon clothes into a yellow waste bag.

17. Report to the RMT Coordinator that Water sampling is complete.

18. Continue to monitor dose rates with the survey meter.

ATTACHMENT B4: (DB) SNOW SAMPLING
Page 1 of 2

NOTE

Cross contamination of samples is to be avoided.

1. Don cotton liners and rubber gloves.
2. Obtain snow container from environmental sampling kit and examine it for cleanliness.
3. Obtain the 18" ruler from the environmental sampling kit.
4. Define an approximate 18" sample square in an undisturbed location at least 10 feet from roadway traffic.
5. Perform a radiation survey approximately 1" above ground using either a frisker or survey meter.
6. Record the counts per minute (cpm) or dose rate reading on the sample bag.
7. Record survey reading on snow container label.
8. Use the trowel to collect 1 to 2 inches of snow from the surface, unless directed to take more or less.
9. Transfer snow to container.
10. Seal container.
11. Use paper towel to wipe off excess snow and/or water from container.
12. Complete sample container label.
13. Place the snow container in a yellow bag.
14. Clean trowel with decon cloth and monitor for contamination. Repeat with clean, dry decon cloth if necessary.
15. Ensure the trowel and ruler has no smearable contamination and return the trowel and ruler to the kit.

ATTACHMENT B4: (DB) SNOW SAMPLING
Page 2 of 2

16. Place used paper towels/decon clothes, gloves, and glove liners in the yellow waste bag.

17. Take contact dose rate on yellow bags **AND** record the dose rate on the outside of the bags.

18. Report to the RMT Coordinator that Snow sampling is complete.

19. Continue to monitor dose rates with the survey meter.

PNPP RADIOLOGICAL SURVEYS FOR EMERGENCIES

TABLE OF CONTENTS

4.1 RESPONSIBILITIES

4.1.1 Offsite Radiation Advisor (ORA): Coordinate the mobilization and deployment of Radiation Monitoring Teams (RMTs) through the EOF Dose Assessor to assess the impact of a radiological release from the plant.

4.1.2 Radiation Protection Coordinator (RPC):

1. Direct the activities of Radiation Protection Section personnel within the Protected Area and evaluate the effects within the Protected Area of the release.

2. Perform the duties of the ORA, until the EOF is declared operational and properly relieved by the ORA, utilizing a shift Chemistry Technician as TSC Dose Assessor.

4.1.3 EOF Dose Assessor:

1. Direct the deployment of RMT's based on projected radiological and meteorological conditions to verify release plume boundaries and magnitude/radiological consequences of release.

2. Establish appropriate dose limits, turn back dose, potassium iodide (KI), and protective equipment requirements for RMT's based on projected or actual radiological assessments of the release.

3. Oversee the development of an Environmental Sampling Plan, as applicable, and the shipment and analysis of collected samples per EPI-B-0010, 'Emergency Radiological Environmental Monitoring Program' (EREMP).

4.1.4 EOF Environmental Liaison:

1. Serves as the communications link between the EOF Dose Assessor(s) and RMT's in the mobilization and deployment of RMT's.

2. Assist the EOF Dose Assessor(s) in tracking RMT position, documenting field sample results/readings, providing periodic status briefings, and in establishing limits and protective equipment requirements for radiological exposure of RMT members.

3. Assist in the development of an Environmental Sampling Plan.

4. Coordinate the packaging and shipping of collected environmental samples to an offsite laboratory, and the interpretation of sample results with Chemistry personnel, per EPI-B10.

4.1.5 TSC Dose Assessor: Perform the duties of the EOF Dose Assessor and Environmental Liaison until the EOF is declared operational and responsibility for dose assessment has been transferred to the ORA.

4.1.6 RMT Leader: Perform plume monitoring surveys, sample collection, monitor RMT team dose and implement appropriate contamination/exposure control measures.

4.1.7 RMT Helper: Operate vehicle, handle communications with the TSC and EOF, and assist in the collection of samples at the RMT Leader's direction.

4.2 PROCEDURE DETAILS

4.2.1 TSC RADIATION PROTECTION COORDINATOR

NOTE

Offsite dose assessment activities and protective action development can **NOT** be assumed by the EOF until the TSC Operations Manager or Shift Manager transfers responsibility for oversight of these actions to the EOF Emergency Coordinator.

4.2.1.1 Contact an on-shift or available Chemistry Technician, qualified as dose assessor, through the Operations Support Center (OSC) and direct him/her to report to the TSC to mobilize and direct RMT's deployment when TSC is activated.

4.2.1.2 Upon the declaration of a Site Area Emergency, direct the TSC Dose Assessor to mobilize a third RMT.

4.2.1.3 Upon activation of the EOF, direct the TSC Dose Assessor to brief the EOF Dose Assessment Staff on continuing dose assessment and RMT activities.

4.2.1.4 Notify the ORA and TSC Dose Assessor when the TSC Operations Manager or Shift Manager has transferred responsibility for Protective Action Recommendations (PAR) decisions to the EOF Emergency Coordinator.

1. EOF Dose Assessor notifies TSC Dose Assessor, responsibility for RMT dose assessment activities has transferred to the EOF.

2. Maintain an open link with the EOF Dose Assessment Staff through the Health Physics Network (HPN).

3. Maintain TSC Dose Assessor in the TSC to shadow the EOF dose assessment activities.

4.2.1.5 For events in which the EOF was not activated, direct the dose assessor to recall, debrief, and release RMT personnel when the event is terminated.

4.2.2 TSC DOSE ASSESSOR

NOTE

A RMT consists of a RMT Leader and a RMT Helper. The RMT Leader is a member of the Radiation Protection section. A RMT Helper may be any individual trained to perform the function.

4.2.2.1 Identify qualified RMT Leaders and RMT Helpers in the OSC, or call in additional personnel and dispatch teams to the Training Educational Center (TEC) Building as required by the current Emergency classification.

ALERT - at an ALERT two (2) RMT(s) are required.

SITE AREA EMERGENCY or GENERAL EMERGENCY - A total of three (3) RMT(s) are required. <P00042>.

1. Initiate callouts for additional RMT personnel using the <Emergency Response Telephone Directory> under the RMT listing.

NOTES

- The location for designated ERS/RMT vehicles and vehicle keys when not in use is posted on the TEC Decontamination Room key box.
- **If** the seals are intact on the Environmental and Emergency Kits, inventories do not need to be performed.

4.2.2.2 Direct one team member to report to the TEC Decontamination Room to inventory equipment and the other member to pick up an RMT vehicle.

4.2.2.3 Brief RMT(s) on the following using the RMT Mobilization Checklist Form (NOP-LP-5015-01).

1. Existing and expected changes in meteorological conditions.

2. Present and/or expected plume path.

3. Actual and projected radiation exposures, direct-reading dosimeter (DRD), and "turn back" dose based on the DRD to Total Effective Dose Equivalent (TEDE)/EDE at TEDE Rate Conversion Factor generated by the Meteorological Information Dose Assessment System (MIDAS).

   a. Use default conversion factor of 1.1, if 'TEDE/EDE at TEDE Rate' conversion factor is not available **OR** upon ingestion of Potassium Iodine (KI).

4. Travel routes to and from anticipated area to be monitored.

   a. Direct RMT's to monitor for plume on side roads in lieu of busy main roadways, i.e., State Route 2 (SR2) or Interstate 90 (I90), where a slow-moving vehicle would cause a hazard to RMT personnel and other vehicular traffic.

5. Dosage and possible side effects for potassium iodide (KI) tablets using the manufacturer's patient insert located on the back of Potassium Iodide (KI) Tracking Form (PNPP No. 9177).

   a. When the potential exists for iodine exposures in excess of 10 REM to the Adult Thyroid (2 x Child Thyroid dose), obtain approval for KI to be taken per EPI-B-0008, 'Protective Action Guides' and direct RMT members to administer it.

6. At your discretion, direct the RMT's to inventory Environmental Sampling Kit and to take kit into field when dispatched.

   a. If seals are intact on the Environmental Kit, an inventory needs not to be performed.

7. Obtain the RMT vehicle nos., and the names, SSNs and available dose for each team member.

4.2.2.4 Process dose extensions and KI Issuance approval for each team member as appropriate.

4.2.2.5 When contacted via radio or cellular telephone by an RMT that they are standing by, direct RMT(s) to proceed into the field to begin plume monitoring or to specific hold points.

NOTES

- Operating guidelines for the RMT radio units and cellular telephones are contained in Attachment C1.
- A conference bridge can be established with RMT vehicle cellular phones using guidance contained in the Emergency Response Telephone Directory.

1. When an RMT team cannot be contacted initially over vehicle radio, call the TEC Decon Room at Extension 5809 to determine the whereabouts of RMT personnel.

2. **IF** contact with an RMT(s) can not be re-established in a timely manner after the teams have been deployed, **THEN** attempt to contact the RMT(s) via the cellular phone installed in each vehicle per Attachment C1.

    - A conference bridge can also be established with RMT vehicle cellular phones using guidance contained in the Emergency Response Telephone Directory.

3. Report any failures or problems with RMT radios or cellular phones per PSI-0007 to initiate troubleshooting efforts.

4.2.2.6 Determine the approximate location of the plume, and postulated doses/dose rates using MIDAS dose assessment software.

4.2.2.7 After briefing, deploy RMT's to verify plume boundaries and centerline.

1. Ensure RMTs are informed of exact travel route to be taken and the postulated location of the release plume.

2. RMT's do not enter plume if projected dose exceeds established "turn back" dose for team members, **OR** if the survey/sample results will not provide any additional useful dose assessment data.

3. Direct RMT's to traverse and determine plume boundaries and centerline.

4. Direct RMT's to re-enter plume and obtain iodine air samples if required.

5. Record survey and sample data report from RMTs on an RMT Field Data Report Form (NOP-LP-5015-05).

6. Request RMT members to report DRD reading upon exiting plume.

4.2.2.8 Perform 'Back Calculation Dose Projection".

4.2.2.9 Continuously update radiological status boards in the TSC and keep the RPC advised of radiological conditions offsite and RMT status.

4.2.2.10 Periodically evaluate radiological conditions RMTs may encounter and revise the "turn back" dose based on dose assessments.

4.2.2.11 Direct RMTs to use protective equipment or measures as follows:

1. When the potential exists for iodine exposures in excess of 10 REM to the Adult Thyroid (2xChild Thyroid dose), obtain approval for KI to be taken per EPI-B8, and direct RMT members to administer.

4.2.2.12 Provide periodical status updates to RMT members using the RMT Status Briefing Form (NOP-LP-5015-03).

4.2.2.13 When directed by the RPC, brief the ORA and EOF staff on continuing offsite dose assessment and RMT operations, but do not relinquish responsibility until authorized.

NOTE

Offsite dose assessment and development of protective actions can **NOT** be assumed by EOF until the TSC Operations Manager or Shift Manager transfers responsibility for oversight of these actions to the EOF Emergency Coordinator.

4.2.2.14 Turnover control of the dose assessment and RMTs activities to the EOF when authorized by the RPC.

4.2.2.15 Upon completion of RMT activities with the EOF not activated, secure the RMT's by performing the following:

1. Direct the RMT's to return to the TEC and debrief RMT's as necessary using the RMT Mobilization Checklist/Deactivation Section, IAW NOP-LP-5015-01.

2. Review RMT survey and sample results.

3. Direct the delivery of used samples either to the Chemistry Laboratory (599' level Control Complex) or alternate location to be determined by Radiation Protection.

4. If KI was issued or the potential for iodine exposure existed, direct RMT members to report to Radiation Protection for a whole body count.

5. Ensure Dosimetry Issuance Card Forms (PNPP No. 7522) are completed by RMT members, and forward card along with TLD to Radiation Protection per EPI-B-0011, 'Emergency Dosimetry Issue' for processing.

4.2.3 EOF OFFSITE RADIATION ADVISOR

4.2.3.1 Assess the manpower available at the EOF upon arrival and initiate calls using the Emergency Response Telephone Directory to fill the following positions:

- Dose Assessor pager position in Perry Emergency Response System (PERS)
- Environmental Liaison pager position in (PERS)
- Dose Assessor

4.2.3.2 Contact the TSC RPC to coordinate the transfer of RMT and dose assessment activities to the EOF.

1. Authorize the EOF Dose Assessor to assume responsibility for offsite dose assessment and control of RMTs, **ONLY** when directed by the EOF Emergency Coordinator.

4.2.3.3 Ensure that Federal, State, and local county representatives in the EOF are kept apprised of RMT activities and survey results using the RMT Field Data Transfer Sheet Form (NOP-LP-5015-02).

4.2.3.4 Direct the EOF Dose Assessor to coordinate the development of an Environmental Sample Plan, and direct the Dose Assessor controlling RMT's to recall and equip RMT's for environmental monitoring per EPI-B-0010, if required.

4.2.3.5 Direct the relief of RMT personnel as appropriate.

4.2.3.6 Ensure that dosimetry required by EPI-B-0011 is available to support relief.

4.2.3.7 When appropriate, direct the Environmental Liaison to recall, debrief, and release RMT personnel.

4.2.4 EOF DOSE ASSESSOR

NOTE

The default conversion factor of 1.1 is to be used if DRD to TEDE Conversion Factor is not available **OR** upon ingestion of Potassium Iodine (KI).

4.2.4.1 Verify that adequate available exposure and "turn back" dose limits have been established for RMT members.

4.2.4.2 Based on dose projections and available dose obtained from the Dose Assessor, coordinate with the Environmental Liaison to establish a plan for the deployment of RMT's to verify the location and magnitude of the plume.

1. Direct the Environmental Liaison to instruct a RMT(s) to traverse the plume using a predetermined travel route and "turn back" dose to verify plume boundaries and centerline, and to obtain an air sample if warranted. See section 4.2.7 for instruction on Field Air Sampling.

2. Do not direct RMT's to enter plume if projected dose exceeds established "turn back" dose, or if the dose required to obtain survey/sample results does not warrant additional exposure to RMT members.

3. Direct RMT's to monitor plume using side roads in lieu of busy main roadways or designated evacuation routes, i.e., SR2 or I90, where a slow-moving vehicle could cause a hazard to RMT personnel and other vehicles.

4.2.4.3 Use data collected by RMT's to verify plume location and magnitude (TEDE and CDE Child Thyroid doses) based on dose projections performed by the Dose Assessor.

4.2.4.4 Ensure RMT members periodically receive a status briefing using the RMT Status Briefing Form (NOP-LP-5015-03).

4.2.4.5 Periodically evaluate radiological conditions RMT's may encounter; revise the "turn back" dose based on dose assessments and direct the RMTs to use protective equipment or measures as follows:

1. When the potential exists for iodine exposures in excess of 10 REM to the Adult Thyroid (2 x Child Thyroid dose), obtain approval for KI to be administered per EPI-B-0008 to RMT members.

4.2.4.6 Record and communicate field team results with Federal and State representatives in the EOF using the RMT Field Data Transfer Sheet Form (NOP-LP-5015-02).

4.2.4.7 Direct RMT(s) to conduct environmental sampling per EPI-B-0010, if sampling of the ingestion pathway is ordered by the ORA.

4.2.4.8 Upon completion of plume pathway surveys, perform the following:

1. Direct RMT's to return to the TEC and debrief RMT's as necessary using the RMT Mobilization Checklist Form (NOP-LP-5015-01).

2. Review RMT survey and sample results.

3. Direct the delivery of samples taken in the field either to the Chemistry Laboratory (599' level Control Complex) or alternate location to be determined by Radiation Protection.

4. If potassium iodide (KI) was issued or the potential for iodine exposure existed, direct RMT members to report to Radiation Protection for a whole body count.

5. Ensure Dosimetry Issuance Card Forms (PNPP No. 7522) are completed by RMT members, and forward card along with TLD to Radiation Protection for processing.

4.2.5 EOF ENVIRONMENTAL LIAISON

4.2.5.1 Contact the TSC Dose Assessment Area to become apprised of the following:

1. Location of RMT personnel/vehicles assembled and protective measures being used by the RMT's, i.e., PCs, etc..

2. Whether the TSC has mobilized a third RMT at the declaration of a Site Area Emergency.

3. The RMT member's names, last four digits of their Social Security Numbers (SSNs), and current and available exposures for RMT personnel currently mobilized.

4. Actual or potential radiological releases and meteorology data.

5. Dose assessment/RMT data currently collected and offsite Protective Actions currently in effect.

6. "Turn back" dose assigned to RMT's and current DRD to TEDE Conversion Factor.

   a. **IF** TEDE/EDE at TEDE Rate Conversion Factor is not available **OR** ingestion of Potassium Iodine (KI), **THEN** use default conversion factor of 1.1.

4.2.5.2 **IF** not yet in place, **THEN** mobilize a third RMT and brief it per Section 4.2.2.3 prior to dispatching it into field.

4.2.5.3 Notify the EOF Dose Assessor once communications with the RMT's have been satisfactorily tested and the EOF is ready to accept responsibility for control of RMT's.

4.2.5.4 Assume responsibility from the TSC Dose Assessor for directing RMT activities only when authorized by the EOF Dose Assessor, and inform the RMT(s) by radio (Channel xFENOCPY) or telephone that the EOF is now directing all RMT operations.

4.2.5.5 Determine the approximate location of the release plume and postulated dose/dose rates from the Dose Assessor and track position on facility map/status boards.

4.2.5.6 Communicate directions from the Dose Assessor on the deployment of RMT(s) to team members, including entry into the release plume to determine boundaries/centerline and for the collection of air samples using the RMT radios per Attachment C2.

NOTE

Side roads are used in lieu of busy main roads or designated evacuation routes, i.e., SR2 or I90, where slow-moving vehicles could cause a hazard to RMT personnel and other vehicular traffic.

1. Ensure RMT's are informed of the exact travel route to be used, postulated position of the release plume, established "turn back" dose, and specific actions to be taken upon arrival.

2. Track the location of RMT vehicles and release plume, and monitor exposure of RMT personnel to prevent inadvertent exposure or conditions in which vehicle may become trapped by release plume due to changing meteorological conditions.

3. Record field survey and air sample information including current DRD reading from the RMT's upon exiting the plume on the RMT Field Data Report Form (NOP-LP-5015-05).

4.2.5.7 Direct RMT members to implement specific protective actions, e.g., KI, at the direction of the Dose Assessor.

4.2.5.8 Provide periodic status updates to RMT members using the RMT Status Briefing Form (NOP-LP-5015-03).

1. **IF** radio communication with an RMT(s) is lost and can not be promptly restored, **THEN** attempt contacting the RMT(s) using the cellular phone installed in each vehicle. A conference bridge can be established with RMT vehicle cellular phones per instructions provided in the Emergency Response Telephone Directory.

2. Report any failure or problems with RMT radios or cellular phones to initiate troubleshooting efforts.

4.2.5.9 Continuously update radiological status boards in the EOF and keep the dose assessor advised of RMT results and status.

4.2.6 RMT MEMBERS

NOTE

The RMT Mobilization checklist is located inside of the RMT clipboard(s) which are stored in the TEC Decontamination Room.

4.2.6.1 Proceed to the TEC Decontamination Room, when directed.

1. Obtain TEC Decontamination Room door and padlock keys from the Emergency Plan key box located outside the TEC Records Room to unlock both doors into the TEC Decontamination Room, cabinets, drawers, and lockers in the TEC Decontamination Room. Return the keys to the key box prior to exiting the building.

2. **IF** vehicles are not available at the designated location on the North side of the TEC or as indicated on the TEC Decontamination Room Key box, **THEN** notify the TSC/EOF RPC/ORA immediately.

3. **IF** at any time while tracking the plume, RMT radio communications with the TSC/EOF are lost and cannot be promptly restored, **THEN** use the cellular phones installed in the vehicles to notify the TSC/EOF. Instructions for establishing a conference bridge with the TSC or EOF are contained the Emergency Response Telephone Directory.

4.2.6.2 Contact the TSC Dose Assessor or EOF Environmental Liaison in EOF Dose Assessment Room if facility is operational, to report your arrival.

4.2.6.3 Assemble into RMT teams, each team consists of a RMT Leader and RMT Helper.

4.2.6.4 Each RMT team member completes their assigned actions listed on the RMT Mobilization Checklist (NOP-LP-5015-01).

1. **RMT Leader:** Assemble RMT equipment using checklist located in the RMT Clipboard.

2. **IF** the seal on an Emergency Kit is broken, **THEN** it is inventoried prior to use.

3. **RMT Leader**: Contact the TSC Dose Assessor or the EOF Environmental Liaison at telephone numbers listed in Attachment C2 to inform the TSC/EOF of the vehicle number, names, last for digits of their SSNs, and current available doses. See Attachment-C1, Pertinent RMT Telephone Numbers.

4.2.6.5 When directed to proceed to a hold or monitoring location outside the plume, perform the following:

NOTE

Side roads are used in lieu of busy main roads or designated evacuation routes, i.e., SR2 or I90, where slow-moving vehicles could cause a hazard to RMT personnel and other vehicular traffic.

1. Ensure that you are adequately informed on travel routes to be taken, present postulated location of release plume (if any), assigned a "turn back" dose, and actions to be taken once you reach this location.

2. Turn on the E-520 or equivalent survey meter and continuously monitor ambient radiation levels with meter probe held outside vehicle to prevent inadvertent transiting of the release plume. Do not transit the release plume unless directed.

3. Immediately report any abnormal fluctuations in general area radiation levels.

4. Periodically observe the reading on your DRD's and ensure that your exposure is maintained within the available "turn back dose."

4.2.6.6 When directed to transit the release plume, perform the following:

1. Secure all unnecessary accesses or openings to the vehicle, i.e., windows, heaters, and vents prior to entering the plume.

2. Identify a specific reference point, e.g., SR2 and Parmly Road before starting to traverse the plume and indicate the road being traveled to transit the plume.

3. Zero the vehicle's trip meter.

4. Slowly transit the release plume obtaining radiation readings with the survey meter outside the vehicle window with the meter probe window open.

5. Periodically read your DRD to determine exposure received.

   a. **IF** at any time your DRD reading approached the "turn back" dose or measured dose rates significantly exceed those projected by the TSC/EOF, **THEN** immediately exit the plume and report observations to TSC/EOF.

6. When an increase in radiation levels is observed, obtain a reading with the probe window closed to verify the plume's boundary, note the trip meter reading and record on RMT Field Data Report Form (NOP-LP-5007-05).

   a. **IF** radiation levels remain constant, the readings are indicating radiation levels as a result of "shine" from the plume; **THEN** continue to traverse plume until boundary is identified.

7. With the probe window closed, proceed through the plume noting the trip meter and radiation monitor reading at the plume centerline (highest reading) and the opposite plume boundary; record this information on the RMT Field Data Report Form (NOP-LP-5007-05).

   a. Do not stop while transiting the release plume unless directed.

   b. If directed, obtain an air sample at the plume centerline IAW section 4.2.7. <F00982>

8. Upon exiting the plume, read and record DRD readings on the RMT Field Data Report Form (NOP-LP-5015-05).

9. Report the location of the plume boundaries and centerline in respect to the reference location noted above, the probe closed-window radiation levels at the plume centerline, and DRD doses recorded on the RMT Field Data Report Form (NOP-LP-5015-05).

4.2.6.7 When instructed to only identify or verify plume boundary, perform section 4.2.6.6, Steps 1 thru 6, then turn around and exit plume.

1. Record information on the RMT Field Data Report, and then communicate data back to TSC/EOF.

4.2.6.8 Document periodic briefings by TSC and EOF on an RMT Status Briefing Form (NOP-LP-5015-03).

4.2.6.9 Conduct environmental monitoring by obtaining and utilizing the Environmental Sampling Kit to collect samples as directed in accordance with EPI-B-0010.

4.2.6.10 Upon completion of the plume monitoring aspect of the emergency. Report back to the TEC as directed for debriefing.

1. Upon returning from monitoring perform steps designated on the RMT Mobilization Checklist under the Deactivation section on page 2 of 2.

4.2.7 FIELD AIR SAMPLING

NOTES

- Battery operated air samplers with tripods are the **preferred** method used for sampling elevated plume activity to reduce the dose to RMT members by minimizing the time spent in the plume.
- Center-line of plume is the **preferred** location for an air sample.

1 **IF** sampling while in plume, **THEN** monitor for changes in dose rate.

2. RADeCO H-810DC battery operated air sampler operation:

   a. Ensure that the filter assembly is properly installed with a particulate filter and a silver zeolite cartridge.

   b. Setup the air sampler on tripod or approximately 4 feet off the ground, ensuring that the air sampler is approximately waist high.

3. Connect the air sampler power cord to the cable connector on the rechargeable power pack, ensuring the "+" and "-" terminals are aligned. The connectors should snap together.

   a. Place the rechargeable power pack output voltage switch in the "12 Volts" position.

   b. Fully depress the white rocker switch on the side of the instrument fully to the "I" position.

   c. Verify the display shows the calibrated flow rate range.

   d. Press any key on the Air Flow Totalizer keypad and verify the display reads TARGET VOLUME: 10 cubic feet. If display does not read 10 cubic feet, perform the following: Otherwise, proceed to next step.

      - Press the SET key.
      - At display prompt for 'Enter Target Volume' enter 10 using keypad.
      - Press the enter key.

   e. Press the green "START" key on the Air Flow Totalizer keypad.

4. The air sampler motor will automatically start and the Air Flow Totalizer display will indicate warm-up delay of 2 seconds if enabled.

NOTE

A blinking FLOW RATE reading indicates the unit is running at a flow rate outside of its calibrated range (high or low). The filter assembly may not be properly installed or it may be clogged.

5. After the warm-up delay period, the Air Flow Totalizer displays the current air sampler flow rate (CFM), current air sample volume, elapsed air sample collection time, and elapsed air sample collection volume (cubic feet). Note the sample start time.

NOTE

Air samples are normally be taken using a 10 cubic feet sample volume, unless directed otherwise by the TSC/EOF Dose Assessor/Environmental Liaison.

6. The air sampler automatically stops when a sample collection of 10 cubic feet has been achieved. Verify the Air Flow Totalizer displays the final sample volume, 10 cubic feet, and note the sample stop time.

7. Press the "CLEAR" key on the Air Flow Totalizer keypad.

8. Turn off the air sampler by fully depressing the white rocker switch on the side of the instrument to the "0" position.

9. Disconnect the air sampler power connector from the connector on the rechargeable power pack by grasping the connectors and pulling them apart.

10. Place the rechargeable power pack output voltage switch in the "OFF" position.

11. Re-tape the inlet end of the filter assembly.

12. **IF** sampling was performed in a high concentration plume, **OR IF** directed by the TSC/EOF Dose assessor/Environmental Liaison, **THEN** place yellow waste bag over air sampler and tripod if used, **AND** place it in the vehicle.

13. Exit the plume and **GO TO** next step.

14. Drive to a low background area. Normally 300 counts per minute or less.

15. Prepare a plastic air sample bag from the kit and record the following information on the air sample bag label RMT Air Sampling Label Form (NOP-LP-5015-04).

    - Sample date
    - Sample type
    - Sample location (i.e. distance from the plant, Street Name)
    - Record LI Number (frisker), calibration due date, meter reading
    - Record LI Number (air sampler number) and calibration due date
    - Flow rate/sample volume
    - Sampled By
    - Start Time
    - Stop Time

16. Using care not to contaminate the area, use RP techniques in removing the filter media assembly from the sampler.

    a. Remove the silver zeolite cartridge from the filter assembly and place into the labeled air sample bag, ensuring the collection side of the silver zeolite cartridge is facing toward the bag and seal the bag.

    b. Remove the particulate filter from the filter assembly (tweezers may be required) and place into a separate bag from the silver zeolite cartridge, ensuring the collection side of the particulate filter is facing toward the bag, and seal the bag.

17. Clean the tweezers, if used, with decontamination cloth.

    a. Ensure tweezers have no smearable contamination and return them to the kit.

    b. Put used decontamination cloths into a yellow waste bag.

18. Reload air sampler with new silver zeolite filter cartridge and tape intake end of air sampler filter assembly.

19. Analyze the air sample media as follows:

    a. Obtain E-600 survey meter (or the equivalent) from the vehicle.

    b. Ensure meter is on, and set to the lowest scale.

    c. Holding Geiger-Mueller (GM) pancake detectors at arm's length from your body, take a background reading.

    d. Take a contact reading on silver zeolite cartridge through the plastic bag.

    e. Subtract background reading from contact reading and record as net reading on the air sample bag.

    f. Place samples in a bag marked as radioactive material.

    g. Record pertinent data on Field RMT Survey Record.

    h. Verify no smearable contamination exists external to the bag containing samples. Perform a contact dose rate survey on the outside with a survey meter **AND** mark the dose rate on the bag.

20. Return air sampling equipment to the vehicle avoiding cross contamination.

ATTACHMENT C: PERRY NUCLEAR POWER PLANT RMT FIELD SURVEYS
Page 24 of 24

21. Report the following to the TSC/EOF Dose Assessor/Environmental Liaison.

    - Closed Window Field Monitor Reading centerline of plume - (mr/hr)
    - Distance from Plant
    - Date and time of the measurement
    - Silver Zeolite reading (cpm)
    - Sample Volume – normally 10 cubic feet.

ATTACHMENT C1: (PY) PERTINENT RMT TELEPHONE NUMBERS
Page 1 of 1

PERTINENT RMT TELEPHONE NUMBERS

LOCATION	PHONE NUMBER
TSC RMT COMMUNICATOR	1-440-280-5884
TSC RADIATION PROTECTION COORDINATOR	1-440-280-5728
EOF RMT COMMUNICATOR	1-440-358-4836
EOF OFFSITE RADIATION ADVISOR	1-440-358-4810
RMT VEHICLE #221011	1-216-978-2591
RMT VEHICLE #221013	1-216-978-4361
RMT VEHICLE #5640	1-216-385-4004
RMT VEHICLE #5799	1-216-978-2596

ATTACHMENT C2: (PY) OPERATING GUIDELINES FOR THE RMT RADIO UNITS AND CELLULAR PHONES
Page 1 of 1

1. RMT Radio Units:

   a. Turn on the mobile RMT Radio. Turn up radio volume.

   b. Verify that the radio is on channel xFENOCPY. Change channel if necessary by pressing the up or down arrow key until channel is displayed.

   c. Depress the Push to Talk (PTT) button on the side of the microphone and speak directly into the front of the microphone. Ensure the status light indicates a continuous RED.

      1) **IF** a loud buzzing tone (system-busy tone) is heard, **THEN** simply release the PTT button, pause a few seconds and try again.

NOTE
This buzzing tone results if the offsite radio system channels are all in use when attempting to transmit.

   d. Release the PTT button when done.

2. Cellular Telephones:

   a. To place a call, dial the following:

RMT Vehicle Nos.	Vehicular Cellular Phone Nos.
#221011	1-216-978-2591
#221013	1-216-978-4361
#5640	1-216-385-4004
#5799	1-216-978-2596