

DISTRIBUTION - VOLUME 13

87

<u>Control Copy</u>	<u>Location</u>	<u>Mail Drop</u>
2	*Control Room (501) (IOM to CRS)	964C
6	**Simulator (PSF Rm. 235)	1500
25	CMS Library	964F
26	Region IV, NRC	----
28	Region IV, NRC	----
31	*TSC Emergency Response	964C
35	NRC Resident Inspector	988C
52	State of Washington, Military Department/Lomax	----
55	Chemical and Nuclear Preparedness and Planning Division (CNPPD)	----
57	Benton County Dept of Emergency Mgmt.	----
58	*J Fisher, CGS Security (SAS-CR) (13.1.1, 13.4.1, 13.5.1, 13.5.5, 13.10.8, 13.11.10, 13.13.4) (RA MEMO)	964C
59	*J Fisher, CGS Security (CAS-GSB) (13.1.1, 13.4.1, 13.5.1, 13.5.5, 13.7.5, 13.10.8, 13.11.10, 13.13.4) (RA MEMO)	964C
60	CGS Security	988A
63	Bill Sawyer	PE30
64	*Radwaste Control Room (467)	964C
68	*Remote Shutdown Room (467) (13.1.1, 13.2.1, 13.2.2, 13.4.1, 13.5.1, 13.10.1, 13.10.9)	964C
75	Dept. of Health Radiation Protection	----
78	*Control Room - (501) STA's Desk	964C
+ +83	*MUDAC	1020
86	**Simulator - STA's Desk	1500
87	<u>Document Control Desk, NRC</u>	----
+ +90	*Joint Information Center (Keys)	964C
+ +94	*EOF Support	1050
+ +97	*EOF Support	1050
114	David Holmes	PE30
127	Licensed Training (Rms. 225, 247 or 248)	1050
128	Licensed Training (Rms. 225, 247 or 248)	1050
129	Licensed Training (Rms. 225, 247 or 248)	1050
132	Licensed Training (Rms. 225, 247 or 248)	1050
+ +134-136(3)	*MUDAC Field Team Kits (13.9.1, 13.9.5, 13.9.8, 13.13.4, 13.14.4)	1050
+ +137	*MPF Field Team Kit (13.7.5, 13.9.1, 13.9.5, 13.9.8, 13.13.4, 13.14.4)	964C
142	Hanford EOC/SMT	----
160	*OSC Emergency Support	964C
164	Oregon State Dept. of Energy	----
214	*J Fisher, Security Control Center (PAAP) (13.4.1, 13.5.1, 13.10.8, 13.11.10, 13.13.4, 13.14.1) (RA MEMO)	964C
219	Licensed Training (Rms. 225, 247 or 248)	1050
220	Licensed Training (Rms. 225, 247 or 248)	1050
223	Franklin County Emergency Management	----
236	Site 1 (JT Kerr) (13.4.1, 13.5.1, 13.5.7, 13.13.4, 13.14.9)	817
+ +238	*Alternate EOF (Keys)	964C
244	Ron Jorgensen	PE30
245	Paul Ziemer	PE30
208	FFD & Security Training (13.4.1, 13.5.1, 13.5.5, 13.10.8, 13.11.3, 13.11.10, 13.11.18, 13.13.4)	964A

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* Level 1 File

** Level 2 Filed next day

AK45
NRK

INTEROFFICE MEMORANDUM

DATE: October 23, 2007

TO: Distribution

FROM: Procedure Control, Administrative Services, (964C)

SUBJECT: PLANT PROCEDURES MANUAL - VOLUME 13
PACKAGE NO. 2007-0892

REFERENCE:

The following Procedures have been REVISED/APPROVED and are to be inserted in your Controlled Copy Manual and the superseded revisions are to be removed and destroyed:

<u>Procedure</u>	<u>Rev</u>	<u>Title</u>
13.5.1	24	EVACUATION
13.9.1	42	ENVIRONMENTAL FIELD TEAM MONITORING OPERATIONS

This package contains EDITORIAL CHANGES; please replace the pages located in your manual with the attached pages

<u>Procedure</u>	<u>Rev</u>	<u>Pages</u>
13.10.9	43	46-56

To verify receipt or cancellation of the subject Procedure(s), please sign, date and **return this receipt to Document Control, MD 964C** within TEN (10) WORKING DAYS of the date of this IOM.

Energy Northwest
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Date

Signature of Manual Holder

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Controlled Copy Number

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Attachments

DISTRIBUTION - VOLUME 13 - continued

<u>Control Copy</u>	<u>Location</u>	<u>Mail Drop</u>
<u>OSC</u>		
171	*OSC Manager (13.5.1, 13.5.5, 13.10.9, 13.13.1)	964C
172	*Craft Lead, Mechanical (13.10.9)	964C
173	*Craft Lead, Electrical (13.10.9)	964C
174	*Craft Lead, I & C (13.10.9)	964C
175	*HP Lead (13.2.1, 13.10.9)	964C
176	*Team Tracker (13.10.9)	964C
177	*OSC Information Coordinator (13.11.18)	964C
<u>TSC</u>		
178	*TSC Manager (13.1.1, 13.1.1A, 13.2.1, 13.2.2, 13.4.1, 13.5.1, 13.10.2, 13.11.1, 13.13.2)	964C
179	*Technical Manager (13.1.1, 13.2.1, 13.2.2, 13.10.3, 13.13.2)	964C
180	*Radiation Protection Manager, (13.1.1, 13.1.1A, 13.2.1, 13.2.2, 13.5.1, 13.8.1, 13.10.4, 13.10.16, 13.11.7, 13.13.2)	964C
181	*Operations Manager (13.1.1, 13.1.1A, 13.10.5, 13.13.2)	964C
182	*Plant/NRC Liaison (13.10.6)	964C
183	*Plant Admin. Manager (13.4.1, 13.5.1, 13.5.5, 13.10.7, 13.13.2)	964C
184	*Maintenance Manager (13.10.9, 13.10.14, 13.13.2)	964C
185	*TSC Information Coordinator (13.11.18)	964C
210	*TSC Manager Secretary (13.4.1, 13.10.2)	964C
211	*TSC Chemistry/Effluent Manager (13.8.1, 13.10.4, 13.10.16)	964C
230	*TSC Admin Support (13.10.7, 13.13.4)	964C
<u>EOF</u>		
++186	*EOF Manager (Rm.146) (13.1.1, 13.2.1, 13.2.2, 13.4.1, 13.5.1, 13.11.1, 13.13.2, 13.13.3)	964C
++187	*Asst. EOF Manager (Rm.146) (13.1.1, 13.2.2, 13.4.1, 13.11.1, 13.11.2, 13.13.2)	964C
++188	Site Support Manager (Rm. 146) (13.4.1, 13.5.1, 13.11.3, 13.13.2)	964C
++190	*Radiological Emergency Manager (Rm.146) (13.2.1, 13.2.2, 13.5.1, 13.8.1, 13.11.7, 13.13.3)	964C
++194	*Engineering Manager (Rm.146) (13.11.12, 13.13.2)	964C
++195	*EOF PIO (Rm.146) (13.12.19)	964C
++209	*Security Manager (13.4.1, 13.5.1, 13.5.5, 13.10.8, 13.11.10)	964C
++212	*Dose Projection HP (Rm.146) (13.2.1, 13.8.1, 13.9.1, 13.11.7)	964C
++213	*EOF Manager Secretary (Rm.146) (13.4.1, 13.11.1, 13.11.2)	964C
++237	*EOF Field Team Dispatcher (Rm.146) (13.9.1, 13.9.5, 13.9.8)	964C
<u>JIC</u>		
++199-206(8)	*JIC Position Specific Manuals (13.12.19, 13.12.20, 13.12.21)	964C
++234	*ENOC Offsite Assembly Area (13.7.5) (Alternate EOF)	964C
++235	*Asst. JIC Manager (13.12.19, 13.12.20, 13.12.21) (Keys)	964C
++270	*JIC HP Spokesperson (13.12.19)	964C
N/A	Records Processing	964Y
N/A	Procedure Control (Memo Only)	964C

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ENERGY-NORTHWEST
COLUMBIA GENERATING STATION
PLANT PROCEDURE MANUAL



13.5.1

Effective Date: 10/23/07

DIC # 1308.1

PCN# (If applicable) _____

QPR:	Paul	T.	Ziemer	2483
	First	MI	Last Name	Ext. #
Sponsor:	David	B.	Holmes	8687
	First	MI	Last Name	Ext. #

All review and approval signatures are documented on the Procedure Revision Form

Procedure Revision Synopsis

Procedure is revised to clarify and add additional instruction for EOF Security Manager duties relative to Site Evacuation Siren operation and initiating Industrial Development Complex (IDC) PA announcements.

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1.0 PURPOSE

This procedure provides direction for conducting localized evacuations within the Protected Area and evacuation of non-essential personnel from the Site, including the Industrial Development complex.

2.0 REFERENCES

- 2.1 Self Assessment SA-2004-004, incorporate the use of encoder for the radio PA system installed at the EOF {P-211005}
- 2.2 FSAR, Chapter 13.3, Emergency Plan, Section 5
- 2.3 PPM 13.5.5, Personnel Accountability/Search and Rescue
- 2.4 PPM 13.5.7, Industrial Development Authority Duties
- 2.5 PPM 13.7.5, Offsite Assembly Area Operations
- 2.6 ABN-SECURITY, Site Security Event
- 2.7 Public Address Emergency Message Format - Localized Evacuation, 26048
- 2.8 Public Address Emergency Message Format - Protected Area Evacuation, 26050
- 2.9 Public Address Emergency Message Format - Site Evacuation, 26051
- 2.10 Emergency Center Accountability Log, 25691

3.0 DISCUSSION

- 3.1 The principle consideration when contemplating an evacuation is the safety of personnel. Depending on conditions at the time, the Shift Manager / Emergency Director may direct one of three evacuations:
 - 3.1.1 A Localized evacuation is the orderly withdrawal of personnel from a selected area. A Localized evacuation will be announced using the alerting tone followed by an instructional message.
 - 3.1.2 A Site evacuation encompasses the Columbia Generating Station Protected Area and the Exclusion Area, including all of the Owner Controlled Area. A Site evacuation normally occurs at Site Area Emergency, and non-essential personnel from the Protected Area, Exclusion Area, and the Industrial Development complex are evacuated.
 - 3.1.3 A Protected Area evacuation is the orderly withdrawal of personnel from the Protected Area resulting from a security threat. A Protected Area evacuation may be

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conducted if a confirmed, credible insider threat exists, independent of emergency classification. Confirmation of this threat and the recommendation to either shelter in place or evacuate should come from on-shift Security supervision. The determination to shelter or evacuate will be evaluated against the nature of the threat at the time. Provided a Protected Area evacuation can be conducted safely during this event, evacuation is preferred. Otherwise, sheltering in place is preferred. All Protected Area personnel should immediately follow public address announcement instructions.

4.0 RESPONSIBILITIES

4.1 Emergency Director (Shift Manager, TSC Manager or EOF Manager)

- 4.1.1 The Emergency Director is responsible for determining the need for evacuation and directing necessary protective actions and public address announcements.

4.2 TSC Manager (additional duties)

- 4.2.1 The TSC Manager is responsible for coordinating appropriate public address announcements to be made from the TSC and establishing accountability with assistance from OSC staff within 30 minutes of initiation of an announcement to evacuate.

4.3 Security Supervisor

- 4.3.1 The on-shift Security Supervisor is responsible for advising the Emergency Director on actions that affect implementation of the Safeguards Contingency Plan. These actions include, but are not limited to, response to a credible insider threat and directing Localized or Protected Area evacuation in response to a security event.
- 4.3.2 If the SCC is unable to activate the Site Evacuation siren from the SCC, the Security Supervisor, until relieved by the EOF Security Manager, is responsible to dispatch an officer to the siren to activate it locally.

4.4 Security Supervisor / Security Manager for Industrial Development Complex

- 4.4.1 The Security Supervisor / Security Manager is responsible for ensuring actions necessary to evacuate the Industrial Development Complex are implemented. The on-shift Security Supervisor performs these actions until relieved by the EOF Security Manager.

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4.5 Radiation Protection Manager

- 4.5.1 The Radiation Protection Manager (RPM) is responsible for dispatching Health Physics Technicians to the Protected Area Access Point (PAAP) to assist evacuees with personnel monitoring and provide direction to evacuees to the Offsite Assembly Area for additional monitoring and if necessary, decontamination. The RPM also advises the Radiological Emergency Manager (REM) if personnel or vehicle monitoring or decontamination is necessary.

4.6 Radiological Emergency Manager

- 4.6.1 The REM is responsible for requesting HP support to set up the Offsite Assembly Area for evacuee reception, directing personnel and vehicle monitoring, and decontamination support. If a radiological hazard was not present and evacuees are not contaminated, the REM authorizes evacuees to be released from the Offsite Assembly Area.

4.7 Site Support Manager

- 4.7.1 The Site Support Manager is responsible for contacting the FFTF shift manager to provide advance notice of Columbia Generating Station protective action decisions for his consideration.

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5.0 PROCEDURE

5.1 Localized Evacuation

For localized evacuations that may be conducted without being in a declared emergency condition, the decision to evacuate is the responsibility of the Control Room Supervisor/Shift Manager (CRS/SM).

Emergency Director Actions (Shift Manager, TSC Manager or EOF Manager)

5.1.1 Determine if any of the extenuating conditions listed below are present, or other conditions which might preclude or delay safe evacuation:

- a. An ongoing security threat within the Protected Area (consult with the Security Shift Supervisor to aid in determining the safest course of action).
- b. Inclement weather (e.g., high winds or hazardous road conditions may preclude a safe evacuation of plant personnel).
- c. Radiological hazards exist (determine which action would result in lowest dose to evacuating personnel).
- d. Other hazards exist which might subject evacuees to a higher risk to personnel safety than not evacuating.

5.1.2 For localized evacuations, determine if any areas of the plant should be avoided during the evacuation.

- a. The area selected for a localized evacuation should have well-defined boundaries (e.g., Radwaste Building, 422' Reactor Building, 501' Turbine Building, etc.). The assembly area for localized evacuations will be the onsite Yakima Building conference room or other areas as specified.
- b. If conditions exist requiring localized evacuation such as a security contingency or other localized hazard, initiate localized evacuation by performing steps on form 26048, Public Address Emergency Message Format - Localized Evacuation.

5.2 Site Evacuation

Emergency Director Actions (Shift Manager, TSC Manager or EOF Manager)

5.2.1 Determine if any of the extenuating conditions listed below are present, or other conditions which might preclude or delay safe evacuation:

- a. An ongoing security threat within the Protected Area (consult with the Security Shift Supervisor to aid in determining the safest course of action).

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- b. Inclement weather (e.g., high winds or hazardous road conditions may preclude a safe evacuation of plant personnel).
 - c. Radiological hazards exist (determine which action would result in lowest dose to evacuating personnel).
 - d. Other hazards exist which might subject evacuees to a higher risk to personnel safety than not evacuating
- 5.2.2 Ensure actions for evacuations of the Industrial Development complex are being implemented at Site Area Emergency.
- 5.2.3 Determine, if necessary, any other special protective measures that should be taken by evacuees.
- 5.2.4 If normal evacuation is safe, direct the EOF Security Manager to contact the Benton County Emergency Operations Center (EOC) to request local law enforcement agency (LLEA) support for traffic and crowd control at the Offsite Assembly Area.
 - a. Direct the on-shift Security Lieutenant, in the absence of the EOF Security Manager, to contact the Benton County EOC for LLEA support at the Offsite Assembly Area.
- 5.2.5 Inform the JIC HP Spokesperson via the EOF Information Coordinator that LLEA support was requested.
- 5.2.6 If normal evacuation is safe, direct personnel to evacuate the site and report to the Offsite Assembly Area located at the ENOC. A site map showing the primary evacuation route and assembly area is presented in Attachment 6.2.
- 5.2.7 If a security event or other unforeseen condition prevents or alters implementation of these preplanned evacuation plans, designate alternate exit point(s), and if necessary, alternate assembly area(s). Personnel staging areas and triage areas are shown in Attachment 6.3 for use if needed. Revise the public address announcements accordingly.
- 5.2.8 Perform steps on form 26051, Public Address Emergency Message Format - Site Evacuation, to direct evacuation of the Site.
 - If the PA announcement is made from the Control Room, use the PA system override switch for announcements. Return the switch to the normal position when done.
 - If the EOF Manager is the Emergency Director, coordinate with the TSC Manager to make PA announcements.

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5.2.9 Direct the Radiation Protection Manager to provide Health Physics coverage at the Radiologically Controlled Area (RCA) exit portal monitors and at the exit monitors at the Protected Area Access Point (PAAP).

5.2.10 Direct the REM in the EOF to make a determination if monitoring is required for evacuees at the Offsite Assembly Area. If not, evacuees may be released after reporting to the Offsite Assembly Area.

5.2.11 Radiation Protection Manager Actions:

- a. Dispatch HP technicians to the portal monitors at the PAAP to provide instructions to evacuating personnel as outlined below, and assist in personnel monitoring as necessary.
 - 1) If personnel were in a contaminated area, direct them to return to the RCA access point to remove protective clothing (if not already removed), and perform personnel monitoring. If contamination is found, contact the RPM at the TSC at Ext. 2852 for further instructions.
 - 2) If personnel alarm the PAAP portal monitors, direct personnel to the Offsite Assembly Area for monitoring and decontamination.
- b. Inform the Radiological Emergency Manager (REM) if personnel or vehicle monitoring or decontamination is necessary for evacuating personnel.

5.2.12 Radiological Emergency Manager Actions:

<p>NOTE:</p>	<p>A radioactive release is in progress when effluent monitors indicate radiation levels in excess of normal readings or field teams detect environmental radiation 10 times greater than normal background, and the increased levels are attributable to the emergency event.</p>
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- a. If a radiological release is in progress at the time of the evacuation order, monitoring of evacuees at the Offsite Assembly Area will be necessary.
- b. In the event of an evacuation requiring personnel to report to the Offsite Assembly Area, verify that the Offsite Assembly Area is set up to receive evacuees. Refer to PPM 13.7.5 for guidance regarding setup and operations of the Offsite Assembly Area.

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- c. At the time of evacuation, evacuees should be directed to report to the Offsite Assembly Area. This direction should include an evacuation route from the list below as appropriate. A site map showing the primary evacuation route and assembly area is presented in Attachment 5.1.
 - Primary: Route 4 South - This four lane road leads from the sites to Richland and is the main route from the site.
 - Alternate: Route 10 South - A two lane road (FFTF access road) connects Route 4 with Route 10 to Highway 240, then leads into Richland.
 - Alternate: Route 4 South - A two lane road leads northwest from the site, intersecting with Highway 240 and Highway 24 to Yakima.
 - Alternate: Route 2 South - A two lane road leading north from the site, intersecting with Highway 240 and Highway 24 to Yakima.
- d. If no offsite release is in progress at the time of evacuation, evacuees may be released from the Offsite Assembly Area.

5.2.13 Security Supervisor Actions:

- a. The preferred method of site exit uses the normal exit protocol. If desired, the gate between the egress turnstiles at the Protected Area Access Point (PAAP) can be opened to expedite personnel exit.
 - If the gate between the turnstiles is opened, log personnel offsite as quickly as possible, using the Personnel Accountability Log for System Outages.
- b. Direct the mobile patrol to perform a visual check of evacuation progress within the Exclusion Area Boundary. This includes the:
 - Hydrogen Storage & Supply Facility
 - Security Firing Range
 - Owner Controlled Area outside the Exclusion Area Boundary
- c. In the absence of the Security Manager, direct the SCC Duty Officer to initiate Industrial Development evacuation announcements from the SCC.
- d. In the absence of the EOF Security Manager, if the SCC Duty Officer cannot activate the Site Evacuation Siren from the SCC, dispatch a security officer to the Site Evacuation Siren to activate it by depressing the pole-mounted activation button.

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5.2.14 In the absence of the EOF Security Manager, if the Offsite Assembly Area will be, or is activated, ensure that the JIC Manager has requested LLEA support from the Benton County EOC. Otherwise, inform the JIC Manager that LLEA support is necessary for Offsite Assembly Area traffic and crowd control.

5.2.15 Security Manager Actions:

- a. Confer with the Radiological Emergency Manager or Emergency Director in the REM's absence to determine the appropriate announcement.
- b. If a radiation release is in progress, confer with the REM in the EOF to determine the need for an alternate evacuation route.
- c. Initiate Industrial Development Complex public address actions per Attachment 6.1.
- d. Initiate activation of the Site Evacuation Siren.
 - 1) Direct the SCC to activate the Site Evacuation Siren.
 - 2) If the SCC cannot activate the Site Evacuation siren per Attachment 6.1, then activate the Site Evacuation Siren in accordance with Attachment 6.1, steps 11 and 12.
 - 3) If still unable to activate the Site Evacuation Siren, direct the Security Supervisor to dispatch a security officer to the Site Evacuation Siren to activate it by depressing the pole-mounted activation button.

5.2.16 Site Support Manager Actions:

- a. Contact and inform the FFTF Control Room of the evacuation PADs made by Energy Northwest.

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5.3 Protected Area Evacuation in Response to a Credible Insider Threat

5.3.1 Emergency Director Actions (Shift Manager, TSC Manager, or EOF Manager):

These actions may be taken in response to security events that occur independently of required Site evacuation actions taken at Site Area Emergency.

- a. Direct protective actions for personnel based on recommendations from on shift Security supervision. Those actions will consist of either sheltering in place until the security threat is contained, or evacuation of non-essential personnel from the Protected Area to the Offsite Assembly Area.
 - Use the PA system override switch for announcements. Return the switch to the normal position when done.
- b. If a credible insider threat has been received and confirmed, contact the Shift Manager/Emergency Director. Based on evaluation of the threat at the time, recommend to the Shift Manager/Emergency Director that Protected Area personnel either shelter in place, or evacuate to the Offsite Assembly Area.
 - If immediate sheltering in place is the preferred option based upon evaluation, using the Security Supervisor Checklist, advise the Shift Manager/Emergency Director to direct personnel to take shelter.
 - If a Protected Area evacuation can be completed safely based upon evaluation, using the Security Supervisor Checklist, advise the Shift Manager to direct evacuation using form 26050, Public Address Emergency Message - Protected Area Evacuation.

- 5.3.2 If advised of an aircraft threat to Columbia, refer to ABN-AIRCRAFT-ATTACK. Attachment 6.3 provides locations of pre-designated emergency staging and triage areas.

6.0 ATTACHMENTS

- 6.1 Industrial Development Complex PA Instructions
- 6.2 Evacuation Route Map
- 6.3 Triage and Staging Areas

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INDUSTRIAL DEVELOPMENT COMPLEX PA INSTRUCTIONS

A. Industrial Development Complex Public Address

- 1) Initiate an Industrial Development complex public address announcement by dialing 761 and reading the following message, or other announcement provided by the REM:

NOTE: Include alternate evacuation route instructions, if required.

"THIS IS AN EMERGENCY ANNOUNCEMENT. PERSONNEL IN THE EXCLUSION AREA AND THE INDUSTRIAL DEVELOPMENT COMPLEX ARE TO IMMEDIATELY EVACUATE THE SITE AND REPORT TO THE ASSEMBLY AREA AT THE EAST SIDE OF 3000 GEORGE WASHINGTON WAY."

Repeat the PA announcement.

B. Radio Paging System

- 1) Using the Radio Paging System at the EOF or the SCC, make a Public Address announcement. {P-211005}
- 2) Verify the date and time appears on display of the Whelen E-969 Encoder labeled Site Evacuation Siren.
- 3) Press the "**C2**" key
 - The message "*Call Key 2*" appears in the display and the display will become brighter.
- 4) Press the "**Send**" key
 - A timer in the display will count down from 5 to 0 while the activation codes are sent and the VA2000 units alert.
 - Message "*Call key complete*" will appear.
- 5) Using the PA microphone on the Encoder, press the push-to-talk button and make the following announcement:

"THIS IS AN EMERGENCY ANNOUNCEMENT. PERSONNEL IN THE EXCLUSION AREA AND THE INDUSTRIAL DEVELOPMENT COMPLEX ARE TO IMMEDIATELY EVACUATE THE SITE AND REPORT TO THE ASSEMBLY AREA AT THE EAST SIDE OF 3000 GEORGE WASHINGTON WAY."

Repeat the PA announcement.

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- 6) Press the **"Reset"** key (Returns the PA to Standby)
- 7) Press the **"C4"** key (Cancels PA)
 - *"Call Key 4"* will appear in the display
- 8) Press the **"Send"** key
 - The message *"Call key complete"* will appear in the display.
- 9) Press the **"Reset"** key to return to the E-969 to the standby mode.
- 10) After the public address announcement is complete, direct the SCC Duty Officer to activate the Site Evacuation Siren.
- 11) If the SCC cannot activate the Site Evacuation Siren, perform the following:
 - a) Initiate the 3-Minute Siren Alert Tone - Site Evacuation Siren (Cross Roads Siren)
 - b) Verify the date and time appears in the display of the Whelen E-969 Encoder labeled Site Evacuation Siren.
 - c) Press the **"C1"** key
 - The message *"Call Key 1"* appears in the display and the display will become brighter.

NOTE: The Site Evacuation Siren will time out automatically after three minutes.

- d) Press the **"Send"** key
 - A timer in the display will count down from 180 to 0 while the activation codes are sent and the siren alerts.
 - The message *"Call key complete"* will appear
- e) Press the **"Reset"** key (Returns E-969 to the standby mode)
- f) Press the **"C4"** key (Cancels the siren activation)
 - *"Call Key 4"* will appear in the display
- g) Press the **"Send"** key
 - The message *"Call key complete"* will appear in the display

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h) Press the **"Reset"** key to return the E-969 to the standby mode

12) Canceling Siren Before Cycle is Completed

Press the **"Reset"** key (Returns E-969 to the standby mode)

Press the **"C4"** key (Cancels the siren activation)

- **"Call Key 4"** will appear in the display

Press the **"Send"** key

- The message **"Call key complete"** will appear in the display

Press the **"Reset"** key to return the E-969 to the standby mode.

13) If the Security Manager or SCC are unable to activate the siren:

Contact the Security Supervisor and direct a Security officer be dispatched to activate the Site Evacuation Siren manually.

NOTE: Contact the SCC for the current IDA phone list, if necessary.

Direct the IDA to perform a sweep of the Industrial Development complex.

14) If the SCC has not been notified, contact the Industrial Development Authority (IDA) and verify that the Industrial Development complex evacuation is being initiated per PPM 13.5.7.

- a) If no one can be contacted at the Industrial Development complex (377-1124), make two attempts to contact personnel listed in the Industrial Development Authority Call List.

15) Contact the Security Supervisor to inform security officers at the roadblocks of offsite assembly area location if necessary.

16) Coordinate with the Security Supervisor to dispatch an officer with a radio to the assembly area to maintain order at the designated assembly area, and to relay messages or directions to evacuees.

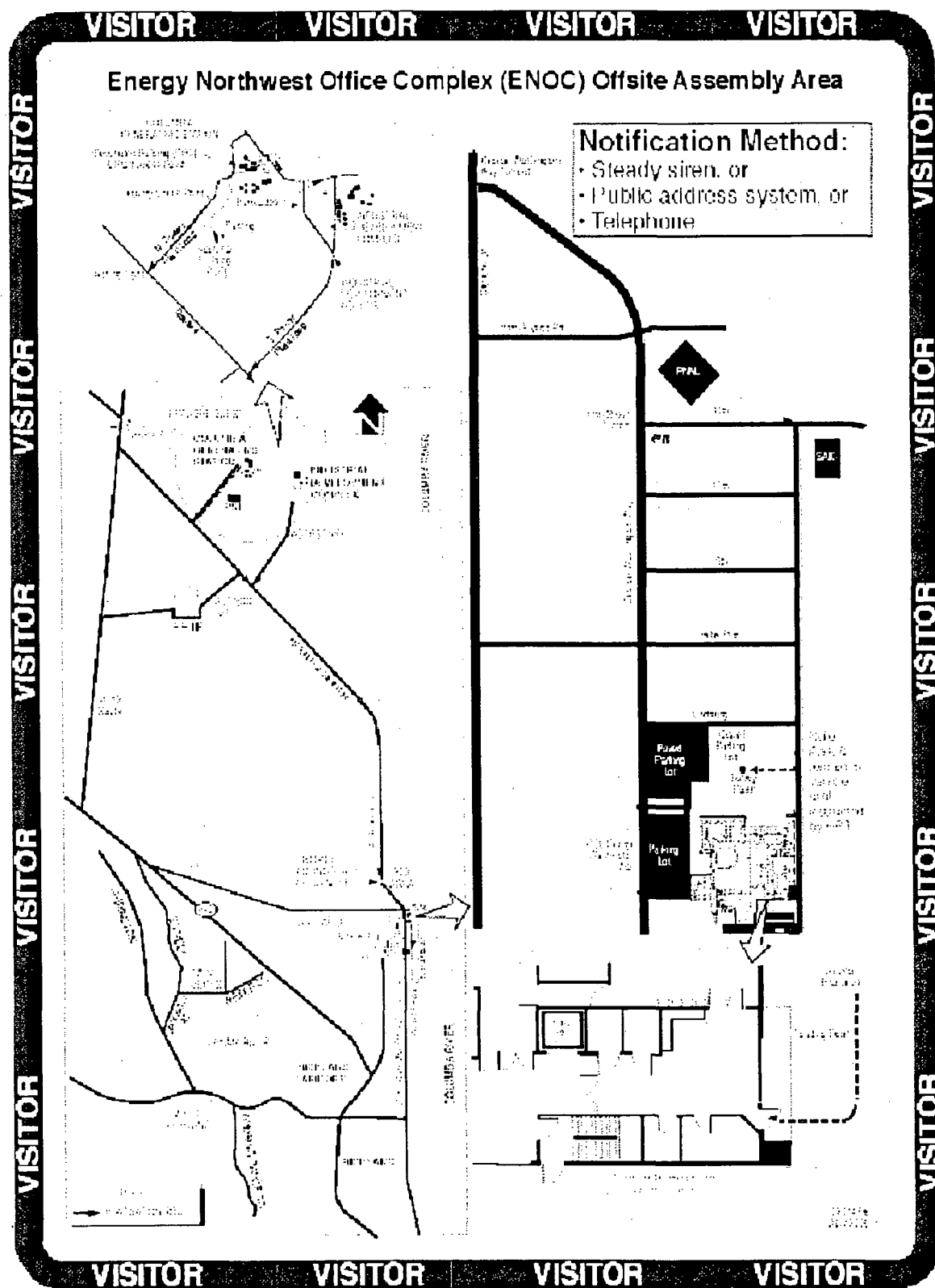
17) Provide telephone notification of the evacuation and the above instructions to the following locations. Refer to the Emergency Phone Directory for phone numbers:

Security Training Facility/Firing Range
Ashe Substation

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- 18) Contact the SCC and verify they used the camera located at the HSSF facility to verify there is no on going activity, personnel or vehicles in the vicinity.
- 19) Keep the Emergency Director informed on the status of the evacuation.

ENERGY NORTHWEST OFFICE COMPLEX (ENOC) OFFSITE ASSEMBLY AREA

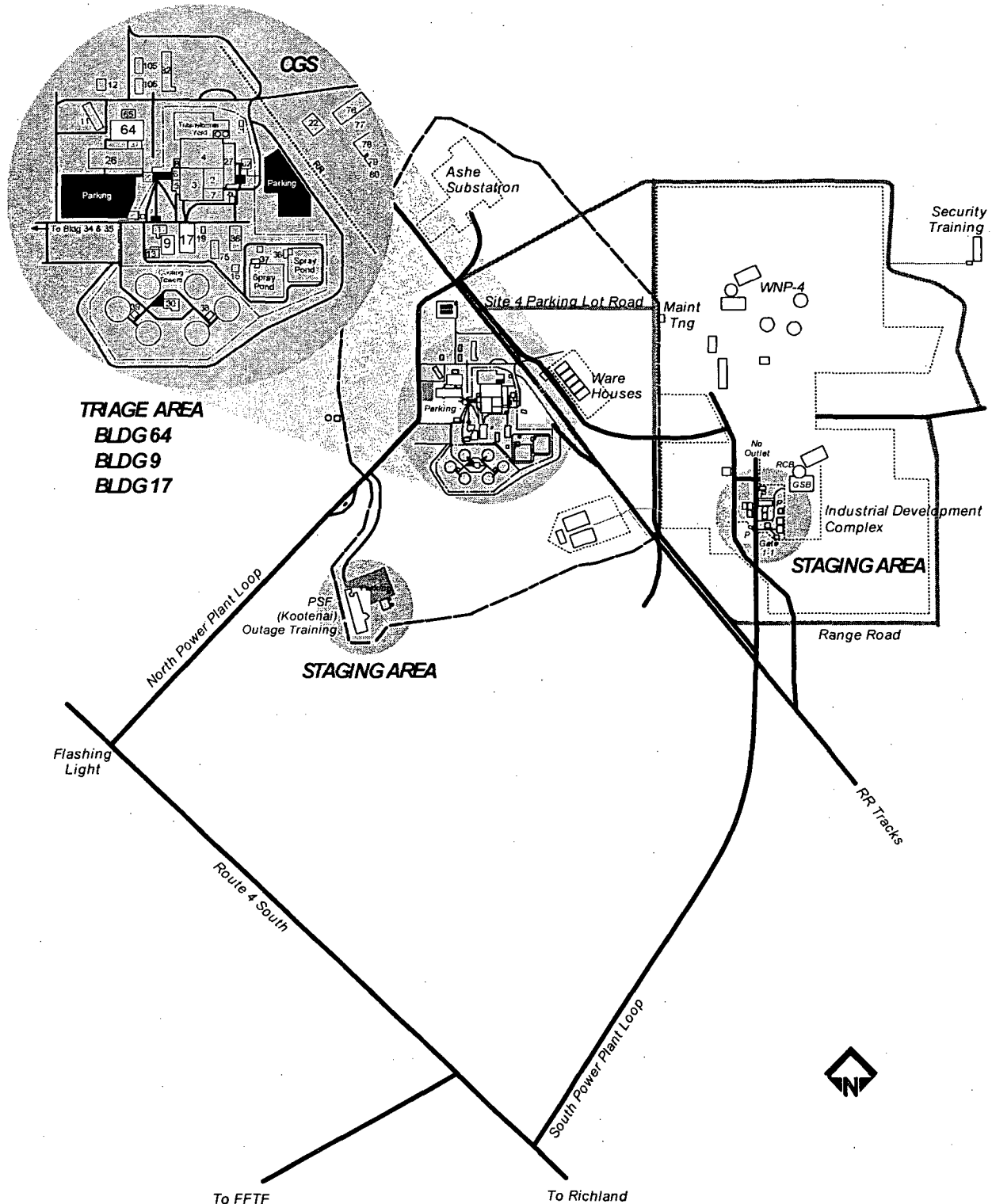


Attachment 6.2, Energy Northwest Office Complex (ENOC) Offsite Assembly Area

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TRIAGE AND STAGING AREAS

TRIAGE AND STAGING AREAS



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13.9.1



**ENERGY
NORTHWEST**
People · Vision · Solutions

**COLUMBIA GENERATING STATION
PLANT PROCEDURES MANUAL**

**REFERENCE
USE**

USE CURRENT REVISION

NUMBER 13.9.1	Approver: WH Sawyer Sponsor: DB Holmes QPR : TJ Powel	DATE 10/23/07
VOLUME NAME EMERGENCY PLAN IMPLEMENTING PROCEDURES		
SECTION ENVIRONMENTAL FIELD MONITORING AND SAMPLING		
TITLE ENVIRONMENTAL FIELD MONITORING OPERATIONS		

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1.0 PURPOSE

This procedure provides those individuals involved with Environmental Field Team (EFT), or Field Team, operations with instructions for responding to radiological emergencies at Energy Northwest nuclear facilities. The Environmental Field Teams will confirm radiological releases through actual measurements in the field to determine the extent of plume travel and contamination spread. Sampling and field analysis will be conducted following the instructions contained in attachments to this procedure.

2.0 REFERENCES

- 2.1 FSAR, Chapter 13.3, Emergency Plan, Sections 2, 5
- 2.2 SOP 11.09, Airborne Sample Distribution, Collection and Shipping
- 2.3 SOP 11.10, Environmental TLD Locations
- 2.4 SOP 10.12, Air Sample Locations
- 2.5 PPM 11.2.9.31, Operation of MG DMC-100 and DMC-2000 Electronic Dosimeters
- 2.6 PPM 13.2.1, Emergency Exposure Levels/Protective Action Guides
- 2.7 PPM 13.9.5, Environmental Sample Collection
- 2.8 PPM 13.9.8, River Evacuation Monitoring
- 2.9 PPM 13.13.4, After Action Reporting
- 2.10 PPM 13.14.4, Emergency Equipment
- 2.11 Sample Identification Form, Form 19324
- 2.12 Emergency Response Log, Form 23895
- 2.13 Field Team Dispatch and Dosimetry Worksheet, Form 25815
- 2.14 Ten Mile EPZ Field Team Summary Map, Form 25130
- 2.15 Field Team Radiation Survey Data, Form 26097
- 2.16 Checklist for Equipment Test, Form 26286

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3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 Environmental air sampling should be performed sufficiently downwind and not closer than 1.2 miles from the plant to minimize dose. All field team personnel should be instructed to contact MUDAC prior to entering the plume and should be made aware of expected dose rates. Air sampling should not be conducted in fields where the projected dose would exceed 1800 mrem (value corresponds to the electronic dosimeter alarm setpoint).
- 3.2 When driving off-road during the dry summer months, Field Team personnel should be aware of the potential for grass fires started by the vehicle's hot exhaust.
- 3.3 For vehicles not equipped with an Anderson clip connector, adhere to good safety practices to eliminate the potential hazards of explosion or fire when connecting an Anderson clip adapter to support air sampling. Connect the adapter's positive battery terminal lead first, then connect the negative lead to a ground away from the battery's negative lead cable post (a ground connection can be any metal object within the vehicle's engine compartment). When disconnecting, remove the negative lead first.
- 3.4 Field Team personnel need to be aware of the potential for heat stress problems when dressed in protective clothing on a hot summer day. The Field Team Coordinator should request a Safety Representative be called out for advisory purposes if this is perceived to be a potential problem.
- 3.5 The vehicle's four-way flashers and portable yellow roof flasher should be used to warn traffic that the field team vehicle is moving slowly or stopped on the roadway during survey and sampling operation. The portable flasher is contained in a grey case in each field team vehicle.
- 3.6 Field team members should wear traffic safety vests for visibility any time they have been dispatched to the field. Safety vests are included in a grey case in each field team vehicle.
- 3.7 Ensure that the EOF Manager has approved issuance of KI prior to recommending that Field Team members take KI.
- 3.8 Field team personnel should perform a 360 degree inspection of the vehicle and surrounding area to detect obstacles, vehicle damage, or vehicle deficiencies prior to driving the vehicle. The driver should ensure that all passengers are wearing seat belts.

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4.0 PROCEDURE

4.1 Field Team Coordinator Duties

NOTE: The Field Team Coordinator checklist (Attachment 5.7) is provided for guidance.

- 4.1.1 Provide overall direction of environmental field teams. Coordinate each organization's team activities with the responsible agency for their respective area:
- a. Exclusion Area Boundary -- Energy Northwest
 - b. Hanford Reservation -- Energy Northwest and DOE-RL
 - c. Outside the Hanford Reservation -- Energy Northwest and Washington State Department of Health
 - d. Oregon -- Oregon Department of Energy
- 4.1.2 Assign each field team deployed an identification number for use in communications and reporting (e.g., EN-1, EN-2, DOE-1, DOE-2, etc.).
- 4.1.3 Interface with the Dose Projection Health Physicist (DPHP) to determine the following:
- a. Projected release path.
 - Obtain copies of a plume projection map based on wind speed and direction to be used to brief the field teams.
 - b. Areas which may require surveys, air sampling, or environmental sampling to verify plume location and deposition.
 - c. Emergency worker dose correction factor. The REM may need to be consulted for this information.
- 4.1.4 Determine current year-to-date (YTD) dose of each Energy Northwest field team member. Using a dose projection computer, double click on the "Run Exposure Report" icon. This will download the most recent exposure report to the computer.
- a. Double click on the "View Exposure Report" icon. This will display a list of all Energy Northwest personnel and their exposure history. Scroll to the desired name or select "Edit" and use the "Find" option.
 - b. Close the window when all desired records have been obtained.
- 4.1.5 Log each field team member's current year-to-date (YTD) dose, available dose, electronic dosimeter number, and the emergency worker dose

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correction factor in the Emergency Worker Dose Worksheet Section of the Field Team Dispatch and Tracking Worksheet (Form 25815). Available dose is 5000 mrem minus current YTD dose.

- When a radiological release to the environment has started, and periodically thereafter, request an emergency worker correction factor from the Dose Projection Health Physicist.
 - If the dose adjustment factor provided to you by the REM is less than 5, use that factor. If the dose adjustment factor is greater than 5, use 5. The emergency worker available dose should be divided by the dose adjustment factor to get the corrected available dose.
- 4.1.6 If necessary, request a support person or additional field team member to assist with recording incoming field team data.
- 4.1.7 Perform initial briefing of field teams prior to dispatch per Attachment 5.8.
- a. Initial briefings should include individual exposures and limits.
 - b. Provide copies of projected plume path to the field teams based on current wind direction and speed.
- 4.1.8 Direct the Field Team Dispatcher in the control and routine briefing of field teams after they are dispatched.
- 4.1.9 Develop an initial plan of action to detect radiological effluent releases through the use of field teams taking into account computer generated data on current and potential effluent release exposure areas.

CAUTION: Environmental air sampling should be performed sufficiently downwind to minimize dose. All field team personnel should be instructed to contact MUDAC prior to entering the plume and should be made aware of expected dose rates. Air sampling should not be conducted in fields where the projected dose would exceed 1800 mrem. If it is determined that a dose correction factor is necessary, adjust this 1800 mrem value accordingly.

- 4.1.10 During initial deployment, position field teams per the following guidelines:
- a. Locate one field team downwind in close proximity to the plant to monitor along the security perimeter. Use grid locations rather than GPS coordinates when field teams are close to the plant.
 - b. Locate the other field teams farther downwind at approximately 1.2 miles and 3-5 miles.
 - c. Direct field teams to continuously transverse their assigned area once the release starts.

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4.1.11 Request field team readings as identified on Field Team Radiation Survey Data (Form 26097).

- a. Direct readings to be reported by column number. For example, "Column 4, 1500." Units are not necessary.

NOTE: A radioactive release is in progress when effluent monitors indicate an increase in radiation levels from normal readings for plant operating conditions or when field teams detect environmental radiation 10 times greater than normal background, AND the increased levels are attributable to the emergency event.

4.1.12 When a radioactive release is confirmed:

- a. Dispatch field teams to traverse at designated distances (i.e., 1.2, 5, and 10 miles) to detect the plume boundary. The plume boundary is 10 times background, or about 100 microrem/hr.
- b. If an air sample is required, direct teams to take an air sample at the plume centerline. The plume centerline is the highest reading when traversing the plume.

4.1.13 Direct field teams to contact the Field Team Coordinator for further instructions when they have located the plume boundary and prior to entering the plume for additional readings.

4.1.14 Keep the DPHP informed of field monitoring results.

4.1.15 Reposition field teams as necessary to track the plume's leading edge, the side boundaries and, when the release terminates, the trailing edge.

4.1.16 Consult with the REM to determine when an environmental air sample is necessary to determine specific isotopic content of the plume. If so, direct the field team to enter the plume and obtain the air sample keeping exposures ALARA. Air samples should be taken at least 1.2 miles downwind.

- a. The electronic dosimeter dose rate alarm is set to 500 mrem per hour. The dose alarm is set to 1800 mrem. If the dosimeter goes into alarm, immediately leave the area and contact the Field Team Coordinator. The alarm can be silenced by pressing and holding the button on the side of the dosimeter until the alarm silences.

NOTE: Dose limits for emergency workers in excess of 5 rem TEDE must be pre-approved by the Emergency Director.

4.1.17 Periodically request dosimeter readings of field team members to assure personnel do not exceed Energy Northwest guides. The Emergency Worker dose limit is 5 rem TEDE, minus any accumulated dose. Ensure dosimeter readings are logged on the Field Team Dispatch and Dosimetry Worksheet (Form 25815).

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- 4.1.18 Maintain up-to-date MUDAC Field Team display maps, showing field team locations, and showing field team radiological monitoring results. Update Field Team Summary Maps (Form 25130) as needed.
- 4.1.19 Periodically, or as requested, provide completed Field Team Summary Maps (Form 25130) to the REM.
- 4.1.20 When directed to assist with river evacuation monitoring, dispatch a field team to implement PPM 13.9.8.

NOTE: Verify the KI has been approved by the EOF Manager prior to recommending Field Teams take KI.

- 4.1.21 Notify field teams when decisions are made to take KI, or to implement other protective measures.

NOTE: A radioactive release is terminated when the following criteria have been met:

- a. The source of the release has been isolated;
- b. The effluent monitors are trending downward;
- c. The Environmental Field Teams can no longer track the plume.

- 4.1.22 Verify that the release has terminated following isolation of the release path from the plant.

NOTE: The threshold for detecting the trailing edge of the plume is about 100 μ R/hour. However, this value may vary depending on meteorological conditions, the severity of the release, and the amount of ground deposition.

- a. Direct the field team nearest the plant to notify you when survey readings using the MicroR meter are trending down.

- 4.1.23 Arrange for replacement of field team instrumentation or supplies when needed.

- 4.1.24 Upon shift change, brief your relief on current status of the emergency and field team activities.

- 4.1.25 Upon shift change or termination of the emergency:

- a. Prepare an individual After Action Report. Refer to PPM 13.13.4.
- b. Collect Field Team Kit Inventory Sheets and After Action Reports from all field teams.
- c. Deliver After Action Reports to the DPHP.

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4.2 Field Team Dispatcher Duties

- 4.2.1 Assign and dispatch field teams as directed and record data on the Field Team Dispatch and Dosimetry Worksheet (Form 25815).
- 4.2.2 Maintain radio contact with field teams and enforce radio discipline and good practices.
- 4.2.3 Request field team readings as identified on Field Team Radiation Survey Data (Form 26097).
 - a. Direct readings to be reported by column number. For example, Column 4, 1500.
- 4.2.4 When significant changes occur during the emergency, complete a Field Team Briefing Worksheet (Attachment 5.8), conduct a roll call of all field teams and provide a radio briefing of worksheet information. Record field team acknowledgment following the briefing.
 - a. Continue to follow up with any teams that fail to acknowledge the briefing.
 - b. The Washington field team coordinator should be informed of state teams not receiving the briefing.
- 4.2.5 When directed, notify field teams of any Protective Action Decisions (PADs) affecting the field teams or the public.
- 4.2.6 Periodically request dosimetry readings from field team members to ensure they are within limits and notify the Field Team Coordinator of results.
- 4.2.7 When directed by either the Field Team Coordinator or the REM for Field Team members to take KI, inform them of the recommendation to take KI. Query Field Team members to determine who has taken KI and who has declined. Record the results in your Emergency Response Log.
- 4.2.8 Maintain radio communications capability until all field teams have returned to the Kootenai Building.
- 4.2.9 Act as Field Team Coordinator when requested.
- 4.2.10 Upon shift change, brief your relief on the current status of the emergency and field team activities.
- 4.2.11 Upon shift change or termination of the emergency:
 - a. Prepare an individual After Action Report. Refer to PPM 13.13.4.
 - b. Deliver After Action Report, and logs to the Field Team Coordinator.

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4.3 Environmental Field Team Member Duties

- 4.3.1 Upon notification of Alert or higher classification, or as directed, proceed to the Emergency Operations Facility, or if directed, to Energy Northwest Alternate EOF at the ENOC MPF, and report to the Radiological Emergency Manager or Field Team Coordinator.

NOTE: If none of the above personnel are present, proceed with those procedure steps listed for getting field team equipment ready for use. Check back with one of the listed personnel when ready for dispatch.

- 4.3.2 Sign in on the EOF staffing board designated for listing field team members and obtain a field team identification designator number (i.e., EN-1, EN-2, etc.).

- 4.3.3 Obtain a Field Team case containing the Field Team Document Packet of Maps, Forms, Procedures, a GPS unit, and cell phone from the EOF Field Team Supply Cabinet.

NOTE: The electronic dosimeter dose rate alarm is set to 500 mrem per hour. The dose alarm is set to 1800 mrem. The stay time is set to 12 hours. If the dosimeter goes into alarm, immediately leave the area and contact the Field Team Coordinator. If the stay time is exceeded, the dosimeter will go into alarm. The exceeded stay time alarm can be silenced by pressing and holding the button on the side (or the front) of the dosimeter until the alarm silences.

- 4.3.4 Obtain an electronic dosimeter from the EOF Field Team Cabinet. To activate the dosimeter, press the button on the side. The dosimeter display should change from "Enter" to "d:"

NOTE: Additional field team kits and the River Evacuation and Monitoring Kits are located outside Room 201 of the ENOC MPF. Keys for the cabinet are located in the key box on the wall adjacent to the Room 201 door. Enter the ENOC MPF via the southeast card reader sliding door.

- 4.3.5 The first team member to arrive at the EOF should retrieve the Field Team Emergency Cabinet keys (key to the First Aid Room for entry to the ambulance bay, and the key to the field team radio cabinet) from the EOF Field Team Supply Cabinet. The key to the EOF Field Team Supply Cabinet is located in the red key box on the side of the cabinet.

- 4.3.6 Obtain keys for the Energy Northwest designated Field Team vehicles from the EOF Field Team Supply Cabinet and move all Field Team vehicles to the ambulance bay area. Field Team vehicles are located at the top of the hill above the ambulance bay.

- 4.3.7 Keys and keycards to the Industrial Development complex gates located on the River Corridor road are included in the Field Team cases.

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4.3.8 Report to the Ambulance Bay and unlock the following:

- a. Field Team Emergency Cabinets #1 through #3 (Kootenai Building Health Physics Center).
- b. Radio Charger Cabinet (Kootenai Building, Room 118A, by decon shower).
- c. Return the key ring to the EOF Field Team Supply cabinet prior to the last team departing the Ambulance Bay.

NOTE: For the remaining steps in this procedure, use appropriate safety precautions when loading cases, opening and closing cases, etc. Gloves are available in each Field Team cabinet.

4.3.9 Obtain field team equipment from the designated cabinets which includes the following:

NOTE: The combination to the field team kits is 911.

- a. First aid kit
- b. Protective Clothing Kit
- c. Instrumentation Kit
- d. Air Sampling Kit
- e. Field Sampling Kit
- f. Field Team Portable Radio (1) and Spare Batteries (1) located in the Radio Charging Cabinets in Kootenai Building, Room 118A.

4.3.10 If the inventory seal on any of the kits is broken, inventory the contents of that kit per the inventory work order OLE file inventory list, located in the Field Team cabinets in the Ambulance Bay, and notify the Field Team Coordinator if anything is missing.

NOTE: The use of gloves is recommended when handling uncoated lead radioactive source shielding containers.

4.3.11 Using the field team radio cabinet key, obtain the source to be used for performing instrument response checks located in the field team source cabinet in Room 118A. The source shall be returned to this cabinet when response checks are complete, and the cabinet locked.

4.3.12 Perform battery and response check using the guidance contained on Form 26286 and Attachment 5.1, as applicable, on all radiation survey instruments in the instrumentation kit. Record the information on Checklist for Equipment Test, (Form 26286) located in the Field Team Document Packet.

4.3.13 After the last Field Team completes instrument checks, return the source to the field team source cabinet, and re-lock the cabinet.

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4.3.14 Return the key ring to the EOF Field Team cabinet prior to the last team departing the Ambulance Bay.

4.3.15 Set up and test air sampler prior to leaving the ambulance bay area per Attachment 5.4.

NOTE: The field team vehicle radio needs to be turned on for the following step.

NOTE: If your radio is inoperable, establish contact by phone, or by cellular phone from a Field Team vehicle.

4.3.16 When equipment checks and vehicle loading is complete, turn on the radio and select channel 1. Establish radio contact with MUDAC and conduct radio checks, using the vehicle and portable radios. See Attachment 5.2, Radio, Cellular Phone and GPS Operation Instructions, for guidance.

NOTE: It is recommended that the GPS unit be connected to the vehicle's cigarette lighter.

4.3.17 Turn on the GPS unit and verify the following:

- a. The page with altitude, clock and position displays. If another page displays, press PAGES and select GROUP A.
- b. Batteries are not low. Verify batteries by pressing PAGES, then select STATUS.

4.3.18 Use the vehicle's four-way flashers and portable roof mounted flasher to warn traffic that the field team vehicle is moving slowly or stopped on the roadway during survey and sampling operations.

4.3.19 Obtain initial deployment assignment from MUDAC, and when directed by the MUDAC Field Team Coordinator, don appropriate protective clothing (PCs), and proceed to assigned location, continuously monitoring radiation levels.

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- 4.3.20 The following Stability Class tables are provided to complement the briefing information received from the Field Team Coordinator.

STABILITY CLASS TABLE

Stability Classification	NRC Categories (Stability)
Extremely unstable	A (1)
Moderately unstable	B (2)
Slightly unstable	C (3)
Neutral	D (4)
Slightly stable	E (5)
Moderately stable	F (6)
Extremely stable	G (7)

- 4.3.21 Notify the Field Team Dispatcher upon arrival at your assigned location.

NOTE: Traffic safety vests should be worn by field team members for visibility any time they have been dispatched to the field. Safety glasses are available in the Field Team kits.

- 4.3.22 As directed, perform general area surveys, ground contamination surveys and portable air samples following the instructions contained in Attachments 5.3 through 5.5.
- 4.3.23 Maintain a chronology of significant inputs, actions, events and their resolutions on an already established log, or on the Emergency Response Log (Form 23895), for attachment to your After Action Report per PPM 13.13.4.
- 4.3.24 Record field survey results on Field Team Radiation Survey Data (Form 26097) and report field team readings to the Field Team Coordinator or Field Team Dispatcher.
- a. Report readings by column number. For example, "Column 4, 1500." Units are not necessary.
- 4.3.25 If directed to perform River Evacuation Monitoring refer to PPM 13.9.8.
- 4.3.26 If directed to retrieve environmental TLDs and/or fixed air samples, refer to Attachment 5.6.
- 4.3.27 If directed to obtain environmental samples such as soil, vegetation, or water, refer to PPM 13.9.5.

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4.3.28 When relieved at shift change, or termination of emergency event:

- a. Brief your relief on responsibilities, duties and current status of actions being performed.
- b. Report to the Kootenai Building Health Physics Center for survey, and, if necessary, decontamination.
- c. Return dosimetry to the EOF Field Team Supply cabinet and request HP to track and appropriately account for your dose. Request HP to reset the electronic dosimeters to fast entry mode per PPM 11.2.9.31.
- d. Prepare an individual After Action Report per PPM 13.13.4.
- e. Deliver After Action Reports to the Field Team Coordinator.

4.3.29 When assigned as relief for the on shift Environmental Field Team Members:

- a. Report to the Field Team Coordinator in MUDAC.
- b. Receive an update on present conditions, and instructions for relieving the on shift team members.
- c. Prior to beginning the assignment, obtain electronic dosimetry from the EOF Field Team Cabinet, and report to the Health Physics Center for a complete set of protective clothing, if required.
- d. Obtain replacement radio batteries from the radio charging cabinets in the Kootenai Building, Room 118A, if needed.
- e. Proceed to the field team location you are relieving, receive briefing and relieve the on shift field team.
- f. Perform a battery check on all applicable instrumentation. Complete Checklist for Equipment Test, Form 26286, using Attachment 5.1.

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4.3.30 Upon return of field team equipment:

- a. Restore equipment to correct field team kit container and place in designated cabinet.
- b. Refer to the field team kit inventories for a list of each kit's contents.
 - If kits contain the required items, reseal the kits.
 - If kit supplies need replacement or replenishment, complete the Field Team Kit Replenishment Log, Attachment 5.9, noting items used out of the kits. Include the replenishment log with your After Action Report.
- c. Prepare an Individual After Action Report per PPM 13.13.4.
- d. Deliver all logs, data work sheets, and After Action Reports to the Field Team Coordinator.

5.0 ATTACHMENTS

- 5.1 Radiation Survey Instruments: Battery & Response Checks, and Operation
- 5.2 Radio, Cellular Phone and GPS Operation Instructions
- 5.3 Field Radiation Surveys (General Area and Ground Contamination)
- 5.4 Portable Air Sampling Instructions
- 5.5 Sample Identification Form (19324) Instructions
- 5.6 Environmental TLD and Fixed Air Sample Retrieval Instructions
- 5.7 Field Team Coordinator Checklist
- 5.8 Field Team Briefing Worksheet
- 5.9 Field Team Kit Replenishment Log

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RADIATION SURVEY INSTRUMENTS: BATTERY AND RESPONSE CHECKS, AND OPERATION

Prior to departure from the EOF, all radiation survey instruments should be battery and response checked. The Cesium 137 check source for response checking the instruments is located in the Field Team Source Cabinet inside a lead container. When response checking the instruments you are looking for any indication of an elevated reading.

When response checking the RO-2A (Beta/Gamma Dose Rate Meter) you may need to remove the source from the lead container and check window open in order to see a response. When finished, return the source to its container, and the container to the field team source cabinet. Lock the cabinet to maintain adequate source control, and return the key to the EOF Field Team Supply Cabinet.

1. Ludlum Model 2 Count Rate Meter

The Ludlum Model 2 Count rate meter should be used when measuring gamma and beta radiation to determine Beta and Gamma contamination. It is used to take readings on air sample cartridges and filters. It is also used to detect levels of contamination on samples, equipment and on yourself.

The Count rate meter can be used to differentiate between Gamma and Beta radiation by placing a piece of cardboard over the probe. If uncovered readings are higher than covered readings then this is an indication of the presence of Beta radiation. If there is no difference between the readings, you are seeing only Gamma. An indication of Beta would mean you are in the plume. An indication of only Gamma would mean the plume is overhead.

a. Battery Check

1. Place Selector switch to BAT. The needle should deflect to BAT TEST portion of the scale.
 - If the battery response does not deflect into the BAT TEST portion of the scale, replace the two D cell batteries and repeat the battery check.
 - Place the selector switch to OFF position
 - Check the calibration due date.

b. Response Check

1. Attach the HP 260 pancake probe to the count rate meter.
2. Set the Selector switch to X1.

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3. Press the RES button to ensure that scale reading goes to zero.
4. Set the F-S switch to fast. The F-S response toggle switch dampens meter response from 3 seconds (F) to 11 seconds (S).
5. Set the audio toggle to ON
6. Slowly pass the probe over the surface of the source at about one centimeter.
7. If the response check was satisfactory; initial, date and check the SAT block on the checklist.
8. If the instrument fails the response check, contact the HP in the Health Physics Center for assistance.

2. Ludlum Model 3 Micro R Meter

The Ludlum Micro R meter should be used for detection of very low level gamma radiation. This instrument is used to determine plume boundaries (10 times background or approximately 100 micro R) and to determine dose rates. The Micro R meter has a range of 0 to 3000 Micro R/hr. When the Micro-R Meter exceeds its maximum range (3000 micro R), change to the beta/gamma dose rate instrument, RO-2A.

For initial surveys, the meter should be set to the X1 range. The Range selector switch positions for the Micro R meter includes a X0.1 scale. On the meter this indicates a range of 0 to 3 Micro R/hr. Because background is approximately 10 Micro R/hr, this scale will always be pegged.

a. Battery Check

1. Place Selector switch to BAT. The needle should deflect to BAT TEST portion of the scale.
 - If the battery response does not deflect into the BAT TEST portion of the scale, replace the two D cell batteries and repeat the battery check.
 - Check the calibration due date.

b. Response Check

- 2.2.1 Attach the probe to the instrument.

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- 2.2.2 Press the RES button to ensure that scale reading goes to zero. The RES button should also be pushed when changing ranges to quickly re-zero the meter.
- 2.2.3 Set the Selector switch to X1.
- 2.2.4 Set the F-S switch to fast. The F-S response toggle switch dampens meter response from 3 seconds (F) to 11 seconds (S).
- 2.2.5 Set the audio toggle to ON.
- 2.2.6 Slowly pass the probe over the surface of the source at about one centimeter.
- 2.2.7 If the response check was satisfactory; initial, date and check the SAT block on the checklist.
- 2.2.8 If the instrument fails the response check, contact the HP in the Health Physics Center for assistance.

3. Eberline Model RO-2A Meter

CAUTION: The chamber face of the RO-2A is a Beta window of ultra-thin mylar and is covered by a sliding Beta shield to allow Beta/Gamma differentiation. Caution should be taken not to puncture the mylar screen when the Beta shield is open.

The Eberline Model RO-2A meter should be used once levels of radiation exceed 3000 Micro R/hr detected by the Micro R meter.

The Beta window is moved by first depressing the friction release button located on the side of the instrument case. To slide the window, tilt the case either up or down while depressing the button.

Full instrument response time of the RO-2A is five seconds. This means the meter needle will move from a reading of zero to 90% of full scale in five seconds. To obtain accurate results, the instrument should be moved slowly enough to evaluate the extent of a change in meter reading.

To differentiate between Beta and Gamma radiation, a reading should first be taken with the window open and then with window closed. If there is no difference in readings you are seeing only Gamma. If there is a difference then you are seeing both Gamma and Beta. A reading with both Gamma and Beta detected would indicate that you are in the plume.

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When calculating beta radiation, a correction factor must be applied to the difference between the beta and gamma readings, and the beta only reading (i.e., the window open and window closed readings). To determine the beta radiation, subtract the window closed reading (gamma) from the window open reading. Multiply the beta correction factor listed on the side of the RO-2A times the difference to determine the corrected beta reading.

a. Battery Check

1. The RO-2A has two battery checks for each test (one of the 9 volt batteries has been replaced with a 30 volt upgrade). Place the Range Selector switch in each BAT position and verify that the meter indicates above the BATT OK mark.
 - If the battery response does not deflect into the BAT OK portion of the scale, replace the nine volt battery and repeat the battery check.
 - Check the calibration due date.

b. Response Check

1. Place the Range Selector switch in the ZERO position and adjust ZERO knob until the meter indicates ZERO (0).
2. Set the Selector Switch to the 0-50 mR/hour position.
3. With the window open, slowly pass the instrument over the source at about one centimeter. (You may need to remove the source from the lead container to obtain a response.)
4. If the response check was satisfactory; initial, date and check the SAT block on the checklist.
5. If the instrument fails the response check, contact the HP in the Health Physics Center for assistance.

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RADIO, CELLULAR PHONE AND GPS OPERATION INSTRUCTIONS

1. Radio Operating Procedures

- a. Turn on the radio (vehicle radios must be turned on each time the vehicle is turned off and back on).
- b. Set the frequency selector to the F-1 channel.
- c. Place the speaker toggle switch to normal position (speaker open).
- d. Adjust the volume to desired level.
- e. Contact the Field Team Dispatcher for replacement batteries.

2. Radio Transmitting Instructions

NOTE: Continuous transmissions lasting longer than approximately 30 seconds will be automatically interrupted by the repeater.

- a. Hold the radio upright with the speaker-microphone grill two or three inches from your mouth.
- b. Do not interrupt another user. If you do, someone will not be heard.
- c. When preparing to transmit, press the talk switch, and wait approximately one second before talking.
- d. Talk in a slow, clear, normal voice, with brief transmissions.
- e. When finished transmitting, release the talk switch to receive.
- f. State the station you are calling first, then state your identification number (e.g., MUDAC this is EN-2, or EN-2 this is MUDAC).

3. Cellular Phone Instructions

- a. To place a call:
 - Enter the phone number you are calling and press the SND key.
 - When the call is complete, press the END key.
- b. To receive a call:
 - Press the SND key to answer the call. Your phone will be disconnected when the calling party hangs up. Press the END key.

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RADIO, CELLULAR PHONE AND GPS OPERATION INSTRUCTIONS

4. GPS Operating Instructions

a. Start up

1. Attach the cigarette lighter adapter to the GPS unit.
2. Press the PWR button.

b. Obtaining a Position

1. The unit activation requires the unit to lock onto several satellites. Depending upon the length of time since the last activation, this may take three to five minutes.
2. The page with altitude, clock and position displays. If this information does not display, select PAGES and GROUP A. Press EXIT to close the options window.

c. Satellite Status Screen and Battery Level Indicator

1. Appears each time the unit is turned on until unit locks onto several satellites.
2. Satellite status and a battery level indicator may be viewed at any time by pressing PAGES, and selecting STATUS. Press EXIT to close the OPTIONS window.

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FIELD RADIATION SURVEYS

1.0 General Area Surveys

NOTE: Refer to Radiation Survey Instruments: Battery & Response Checks, and Operation (Form 26286) for instructions on instrument operation.

- 1.1 Before entering an affected area, perform a background measurement using the Micro-R Meter and record background reading and time on the Field Team Radiation Survey (Form 26097).
- 1.2 As directed by MUDAC, proceed toward the plume using the Emergency Zone Map booklet from the Field Team Kit and GPS unit to determine the location of the plume.
- 1.3 Using the MicroR meter set on the x1 scale, search for the edge of the plume (defined as ten times background). Increase scales as radiation levels increase.
- 1.4 When the Micro-R Meter exceeds its maximum range (3000 micro R), change to the beta/gamma dose rate instrument, RO-2A.

NOTE: If your electronic dosimeter goes into alarm, immediately leave the area and contact the Field Team Coordinator. The electronic dosimeter will alarm for three conditions. It alarms at 500 mrem/hour and at 1800 mrem. The dosimeter will reset when the dose rate returns to a level less than 500 mrem per hour. The dose alarm will not reset once it alarms. If the dosimeter goes into alarm because the 12 hour stay time has been exceeded, the alarm may be silenced by pressing the button on the side (or front) of the dosimeter.

- 1.5 When directed by MUDAC, traverse the plume constantly monitoring radiation levels and record locations, dose rates and other required information for the plume centerline and edges on Form 26097. Proceed until the other edge of the plume is identified.
- 1.6 Record field survey results on Field Team Radiation Survey Data (Form 20697) and report field team readings to the Field Team Coordinator or Field Team Dispatcher.
 - a. Report readings by column number. For example, "Column 4, 1500." Units are not necessary.
 - b. Record and report to the Field Team Coordinator gross beta/gamma radiation readings. Calculation of the beta component is not required unless requested by MUDAC.
 - c. If requested to calculate the beta component, multiply the beta correction factor, located on the side of the RO2A, times the difference of the open and closed window readings.

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- 1.7 When the Micro-R Meter reads 3000 micro-R/hr (3 mrem/hr) or greater, change to the beta/gamma dose rate instrument, RO-2A, to tell if you are in the plume or just seeing plume shine as follows:

NOTE: All open and closed readings must be done in the same location and not from a moving vehicle. Consider ALARA practices in choosing how many readings to take.

- a. When first entering the plume, and again at centerline, take open and closed window readings at 3 feet and 6 inches above the ground. The plume centerline is the location of the highest reading.
 - b. If the open and closed window readings are approximately the same, then the plume is probably overhead and has not touched down.
 - When the open and closed window readings are the same, you are seeing gamma shine from the overhead plume. If the open window reading is higher than the closed window reading, you are seeing some beta radiation. When beta readings are detected, you are in the plume.
 - c. If the open window reading is higher than the closed window reading, (by approximately 20% or greater) then you are probably in the plume.
 - d. Record both sets of open and closed window readings.
- 1.8 If the Micro-R Meter indicates a plume reading of less than 3000 micro-R/hr, you can determine if you are actually in the plume (instead of under it) by repeating Step 1.6 using the Count Rate Meter/GM pancake probe as the instrument, and the cardboard from your notebook as a window.
- 1.9 Do not stop to report data while in the plume. Report the plume edge and centerline readings and their locations to the Field Team Dispatcher at the earliest possible time.
- 1.10 Leave the plume area when not taking readings, but leave the instrument turned on at all times for constant monitoring purposes.
- 1.11 After being in the plume, periodically conduct a survey of yourself and your vehicle using the count rate meter, and if grossly contaminated, advise the Field Team Dispatcher.

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2.0 Ground Contamination Surveys

NOTE: Refer to Checklist for Equipment Test, (Form 26286) for instructions on instrument operation.

2.1 As directed by the Field Team Dispatcher, perform a ground contamination survey:

- a. Select small area of level ground (3' x 3') with minimal vegetation.

NOTE: The detector probe should not be allowed to touch the ground or come in contact with potentially contaminated vegetation.

- b. Using the Micro-R Meter and the count rate meter, take readings at ground level (1-2 inches (5 cm) above the surface) and at waist level, approximately 3 feet above the ground.
- c. When the Micro-R Meter exceeds 3000 micro R change to the beta/gamma dose rate instrument, RO-2A, and repeat ground level and waist level readings at the same locations.
- d. If ground level reading is higher than waist level reading, assume the ground to be contaminated.

2.2 Record all four readings on the Field Team Radiation Survey Data (Form 26097).

2.3 Repeat the ground contamination survey in several locations.

2.4 Select the highest set of readings and report them to the Field Team Dispatcher.

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PORTABLE AIR SAMPLING INSTRUCTIONS

CAUTION: Environmental air sampling should be performed sufficiently downwind to minimize dose. All field team personnel should be instructed to contact MUDAC prior to entering the plume and should be made aware of expected dose rates. Air sampling should not be conducted in fields where the projected dose would exceed 1800 mrem. If it is determined that a dose correction factor is necessary, adjust this 1800 mrem/hr value accordingly.

Portable Air Sampler Setup and Operational Test

1. Monitor your exposure during performance of this Attachment.

NOTE: Silver zeolite cartridges should be used during actual events only. Do not use silver zeolite during drills or exercises. Charcoal cartridges may be used to detect radioiodine if noble gases are purged from the charcoal cartridge.

2. Obtain the air sampler, cartridge and particulate filter.
3. If not already marked, mark a charcoal or silver zeolite (AgZ) cartridge with an arrow to indicate the direction of the air flow.
4. Insert the cartridge and a clean two-inch filter paper, (spongy side facing outward), into the air sample head. Refer to the diagram in this Attachment.

WARNING: Potential hazard of explosion or fire during connection of an Anderson clip adapter's leads to the vehicle's battery terminals exists. Don safety glasses prior to making electrical connections.

5. If the vehicle is equipped with no Anderson clip connector and air sampling will be necessary, then a clip adapter must be installed prior to attaching the air sampler. A clip adapter is available in the EOF Field Team Equipment cabinet.
 - Connect the adapter's positive battery terminal lead first, then connect the negative lead to a ground away from the battery's negative lead cable post (a ground connection can be any metal object within the vehicle's engine compartment).

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6. Connect the sampler's Anderson clip connector to the vehicle's connector, located just below the grille or to the end of the Anderson clip adapter if used. Leave vehicle engine running while operating the air sampler to assure constant voltage.
7. Turn the air sampler on. Determine initial flow rate from the rotometer on the side of the air sampler. Note the flow rate information on the Sample Identification Form (Form 19324) and Radiation Survey Instruments: Battery & Response Checks, and Operation (Form 26286).
8. If the flow rate is less than one or greater than five CFM, the air sampler is inoperable. Contact the Field Team Coordinator for further instructions, or obtain a new air sampler from the cal lab and retest.
9. Based on air sampler flow rate, determine the sample time necessary to obtain a sample of 10 cubic feet. Record the 10 cubic foot sample time on Checklist for Equipment Test, (Form 26286).
10. When the air sampling test is complete, disconnect the air sampler from the Anderson clip by grasping the connector on the sampler's power cord and pulling it from the Anderson clip.
 - If the Anderson clip adapter is installed on the vehicle, then disconnect adapter from the vehicle's battery by removing the negative lead first and then the positive lead.

Obtaining an Air Sample

NOTE: Air sampler preparation (sample head assembly) and paperwork initiation should be performed outside the plume.

11. When directed by MUDAC, collect an environmental air sample in accordance with the following instructions:
12. Proceed to assigned sample location and locate the plume centerline (highest reading).
13. Obtain window open/window closed readings to ensure that you are in the plume. If the readings are the same, you are seeing only shine from the plume. Air samples should only be taken if you are in the plume.

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14. Ensure the following conditions of operation are met:
 - If at all possible, do not place sampler on a known contaminated surface
 - Keep sampler away from vehicle exhaust gases
 - Do not point air sampler inlet toward any object which may restrict air flow
 - Do not stand in front of sampler inlet when running or allow loose clothing to restrict air flow
15. If the vehicle is equipped with no Anderson clip connector and air sampling will be necessary, then a clip adapter must be installed prior to attaching the air sampler. A clip adapter is available in the EOF Field Team Equipment cabinet.
 - Connect the adapter's positive battery terminal lead first, then connect the negative lead to a ground away from the battery's negative lead cable post (a ground connection can be any metal object within the vehicle's engine compartment).
16. Connect the sampler's Anderson clip connector to the vehicle's connector, located just below the grille or at the end of the Anderson clip adapter if used. Leave vehicle engine running while operating the air sampler to assure constant voltage.
17. Turn the air sampler on.
18. If the flow rate is less than one or greater than five CFM, the air sample will be invalid. Leave the plume and contact the Field Team Coordinator for further instructions.
19. Perform area dose rate survey for sample location.
20. Record start flow rate, sample start time and sample location dose rate on the Sample Identification Form (Form 19324).
21. Upon completion of sampling, turn off the air sampler, note sample stop time, and disconnect the air sampler from the Anderson clip by grasping the connector on the sampler's power cord and pulling it from the Anderson clip.
 - If the Anderson clip adapter is installed on the vehicle, then disconnect adapter from the vehicle's battery by removing the negative lead first and then the positive lead.
22. Leave the area of the plume to complete your documentation following the instructions in Attachment 5.5.
23. Label separate plastic bags for the filter and charcoal cartridges with the sample identification number, location, date, and time collected.

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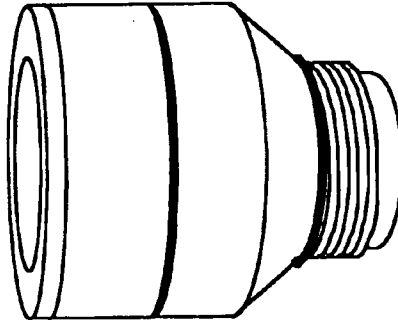
24. If using charcoal cartridge vs. Silver Zeolite, purge noble gases by reconnecting air sampler to vehicle's electrical system as in steps 15 and 16 and drawing clean air through filter and cartridge for a minimum of 2 minutes.

NOTE: When performing steps 25 through 29, use appropriate contamination protection. Protection should include plastic gloves, and if required, shoe covers and coveralls.

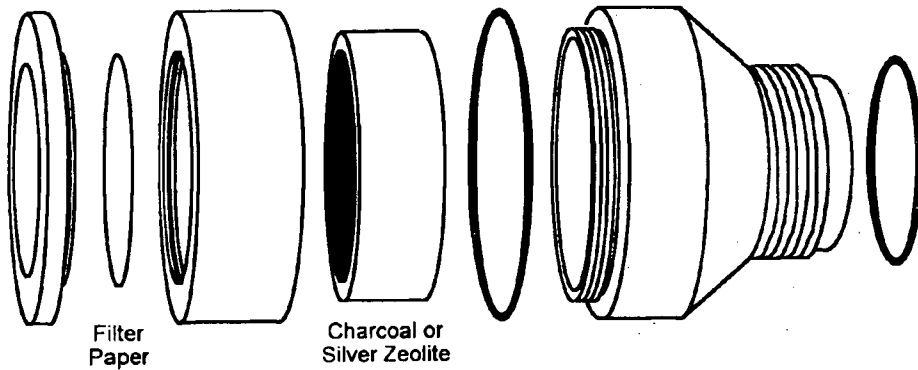
25. Disassemble sample head to allow access to the particulate filter and the cartridge. Remove the filter (using tweezers) and the cartridge from sample head to assure appropriate probe geometry when counting.
26. Determine both filter and cartridge dose rates or count rates by placing the appropriate instrument detector on the inlet side of the filter or cartridge.
27. Record both filter and cartridge sample readings on Sample Identification Form (Form 19324). Note particulate and iodine sample readings in the Remarks section separately.
28. Record filter reading , cartridge sample reading, and background reading at the sample counting location on the Field Team Radiation Survey Data form (26097) in 10, 11, and 12. Report the results of blocks 10, 11, and 12 to the Field Team Coordinator.
- Units in blocks 10, 11, and 12 should be counts per minute (cpm) if the samples were counted with a Ludlum Model 2 Frisker or mR/hr if the samples were counted with the RO-2A.
29. Place the filter and cartridge in separate pre-labeled plastic bags then seal bags.
30. Survey team members for contamination. If contaminated, advise the Field Team Dispatcher.
31. Transport the samples, with Sample Identification Forms, as directed by the Field Team Coordinator. Ensure that particulate filters and the corresponding cartridges are transported together and that Sample Identification Forms accompany the samples.

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SAMPLE HEAD DIAGRAM



Sample Head - Assembled



Sample Head - Disassembled

970713
Nov 1997

**Filter Cartridge and Sample Head for High Volume Air Sampling Pumps
Model CFH-30**

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SAMPLE IDENTIFICATION FORM (19324) INSTRUCTIONS

1. SAMPLE IDENTIFICATION FORM

List one sample per form. For air samples, use one sample form and one sample identification number for both the cartridge and particulate filter. Attach one copy of the form to the cartridge and one to the particulate filter.

2. SAMPLE IDENTIFICATION NUMBER DESIGNATION

SAMPLE ID NUMBERS will be in a two segment alpha-numeric code using the following format:

FIELD TEAM

AA0

SEQUENCE

000

FIELD TEAM CODES

Use a two-letter and single number designator, (e.g., EN-1 for Energy Northwest Field Team 1).

SEQUENCE

Use sequential numbers for each team throughout an event, (e.g., 003 for the third sample taken by a given team).

3. SAMPLE TYPE

Describe the type of sample being collected-air, soil, vegetation, water, etc.

4. FIELD TEAM SAMPLE LOCATION/DESIGNATION

Use sample station numbers where they exist, such as continuous environmental air sampling stations (e.g., Sample Station 3). Where no sample station number exists, as in emergency field samples, enter the GPS location.

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ENVIRONMENTAL TLD AND FIXED AIR SAMPLE RETRIEVAL INSTRUCTIONS

1.0 ENVIRONMENTAL TLD RETRIEVAL

Radiological Emergency Manager/Field Team Coordinator Duties

- 1.1 Consult with the Washington DOH representative at the Emergency Operations Facility (EOF) and determine the need for collection and replacement of environmental TLDs during the emergency.

NOTE: If possible, involve the Radiological Environmental Monitoring Program (REMP) Supervisor in any nonscheduled collection or deployment of environmental TLDs.

- 1.2 When collection is determined advisable, dispatch an experienced REMP staff member as part of an Environmental Field Team, to replace the ANNUAL TLD badges at selected locations as described in SOP 11.10.

REMP Staff Member Duties

- 1.3 Contact the Energy Northwest TLD Administrator to obtain replacement environmental TLDs for distribution.
- 1.4 Ensure that the required number of TLDs are provided for each exchange group as directed by the Radiological Emergency Manager (REM).
- 1.5 Contact the Field Team Coordinator regarding radiological conditions in the field, and follow his/her directions on individual radiation protection measures.
- 1.6 Proceed to the TLD stations as directed by the Field Team Coordinator.
- 1.7 Exchange only the ANNUAL TLDs.
- 1.8 When the TLDs have been exchanged, return to the Health Physics Center and turn them in to the Health Physics Center Staff for processing.

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2.0 FIXED AIR SAMPLE RETRIEVAL

Radiological Emergency Manager/Field Team Coordinator Duties

- 2.1 Consult with the Washington DOH representative at the EOF and determine the need for collection of fixed air samples during the emergency.

NOTE: If possible, involve the REMP Supervisor in any nonscheduled collection of fixed air samples.

- 2.2 If collection is determined advisable, dispatch experienced REMP personnel as part of an Environmental Field Team to collect air samples at selected locations in accordance with SOP 11.09 and SOP 11.12.

REMP Staff Member Duties

- 2.3 Contact the Field Team Coordinator regarding radiological conditions in the field and follow his/her directions on radiation protection measures to be taken.
- 2.4 Proceed to the fixed air sample stations as directed by the Field Team Coordinator.
- 2.5 Collect the air samples.

NOTE: If the emergency involved a radioactive release, calculations of the volume of air sampled may need to be restricted to the time during which the plume or puff was over the station. Request guidance from the Field Team Coordinator if the fixed air sample was in the path of a release during the sampling period.

- 2.6 When the air samples have been collected, return to the Health Physics Center and turn them in to the Health Physics Center Staff for processing.

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FIELD TEAM COORDINATOR CHECKLIST

DATE _____

	<u>Actions</u>	<u>Time Completed</u>	<u>Initials</u>
1.	Sign in on board, obtain supply drawer from EOF supply cabinet, and notify the REM of your availability.	_____	_____
2.	Brief the field team coordinators from other agencies supplying field teams and reach a consensus about management of their field teams.	_____	_____
3.	Determine current year-to-date exposure of Energy Northwest field team members prior to deployment.	_____	_____
4.	Assign field team members and a designate team identification number (one HP and one non HP per team, if possible).	_____	_____
5.	Ensure field teams have transportation and other equipment.	_____	_____
6.	Direct the Field Team Dispatcher(s) to brief the teams approximately each 30 minutes on current radiological projections or other appropriate information about emergency conditions.	-ongoing-	
7.	If necessary, assign an individual to act as field team recorder.	_____	_____
8.	Interface with the Dose Projection HP to determine projected plume path and emergency worker dose factor.	-ongoing-	
9.	Communicate emergency worker dose factor to all field teams and confirm information as received.	_____	_____
10.	Develop a strategy for assigning Field Teams initially, verifying plume path, and dealing with EOF inaccessibility.	-ongoing-	
11.	Direct field teams to perform field surveys per field team survey instructions contained in this procedure.	-ongoing-	
12.	Provide completed Field Team data summary maps to the Dose Projectionist Health Physicist (DPHP) as new information is developed. During rapidly changing conditions, try to do this at least every 30 minutes.	-ongoing-	

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DATE _____

	<u>Actions</u>	<u>Time Completed</u>	<u>Initials</u>
13.	Provide field team air sample data to the Dose Projection Health Physicist (DPHP) for use in calculating dose projections.	-ongoing-	
14.	If requested to assist with river evacuation monitoring, implement PPM 13.9.8 (kits are at ENOC, MPF).	_____	_____
15.	Direct the dispatcher to periodically ask for field team dosimetry readings. Keep exposure ALARA.	-ongoing-	
16.	Arrange for field team replacement supplies, as necessary.	-ongoing-	
17.	Provide completed Field Team Summary Maps to the REM.	-ongoing-	
	<u>NOTE:</u> Verify the KI has been approved by the EOF Manager prior to recommending Field Teams take KI.		
18.	Notify field teams when decision is made to recommend KI.	_____	_____
19.	Upon shift change or change to State control, brief replacements.	_____	_____
20.	Upon shift change or termination of the emergency:		
a.	Prepare an individual After Action Report. Refer to PPM 13.13.4.	_____	_____
b.	Deliver After Action Report, logs, and all field team work sheets to the REM.	_____	_____

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Date _____
Time _____

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FIELD TEAM BRIEFING WORKSHEET, con't

Dose/Dose Rate to Notify MUDAC: _____

Roll Call/Acknowledgment:

TEAM NO.	ACKNOWLEDGED AT: (Time)	COMMENTS

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FIELD TEAM KIT REPLENISHMENT LOG

Date _____ Team Members _____

FIELD TEAM MEMBERS: List below the items used from each kit during the drill/event so that the kits can be restocked appropriately. Include the completed log with your After Action Report.

INSTRUMENTATION KIT # _____:

AIR SAMPLING KIT # _____:

PROTECTIVE CLOTHING KIT # _____:

FIELD SAMPLING KIT # _____:

MISCELLANEOUS (FORMS, MAPS, PROCEDURES, ETC.)

Return electronic dosimeters to the EOF Field Team Supply cabinet and contact Radiological Services for TES updates and reset to fast entry mode.

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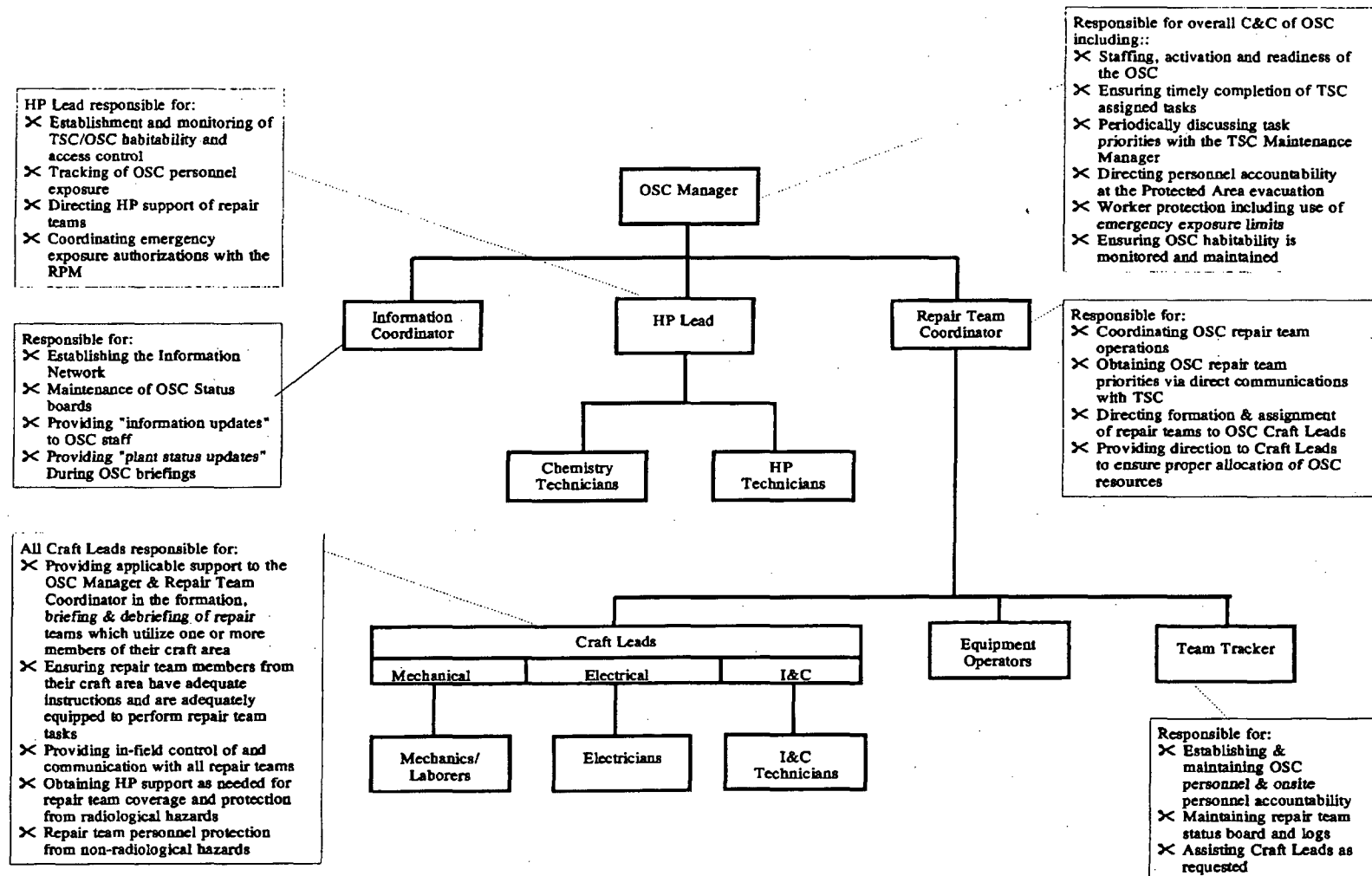
DATE: 10/23/07

Pkg. 2007-0892

EDITORIAL

13.10.9

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COLUMBIA GENERATING STATION OSC ORGANIZATION CHART

Attachment 4.11, Columbia Generating Station OSC Organization Chart

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Title: OPERATIONS SUPPORT CENTER MANAGER AND STAFF DUTIES		Page: 47 of 56

PORTABLE AIR SAMPLER OPERATION

{P-180041}

NOTE: Air sampler preparation (sample head assembly) initiation should be performed outside the airborne contamination area.

1. Use a portable air sampler, equipped with a two-inch sample head, to obtain particulate and radioiodine samples.
2. Continue to monitor your exposure during performance of this procedure.

NOTE: During drills, use the charcoal cartridges marked for drill use. DO NOT use silver zeolite cartridges during drills.

3. Insert a clean two-inch filter paper, (spongy side facing outward), into the air sample head, and attach to the sampler. Refer to the diagram in this Attachment.
 - Operate the air sampler with the filter media in place until the air flow stabilizes, then turn it off.
4. Proceed to assigned sample location.
5. Ensure the following conditions of operation are met:
 - If at all possible, do not place sampler on a known contaminated surface
 - Do not point air sampler inlet toward any object which may restrict air flow
 - Do not stand in front of sampler inlet when running or allow loose clothing to restrict air flow
6. Turn the air sampler on. Determine initial flow rate from the rotometer on the side of the air sampler.
7. Perform area dose rate survey for sample location.
8. Based on air sampler flow rate, determine the sample time necessary to obtain a sample of 10 cubic feet.
9. Leave the area of suspected airborne contamination to complete your survey and analysis.
10. Label the plastic bags for the filter and charcoal cartridges with the sample identification number, location, date, and time collected.
11. If using charcoal cartridge vs. Silver Zeolite, purge noble gases by running the air sampler and drawing clean air through filter and cartridge for a minimum of 2 minutes.

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12. Disassemble sample head to allow access to the particulate filter and the cartridge.
13. Determine filter and cartridge dose rate or count rate by placing the appropriate instrument detector on the inlet side of the filter or cartridge.
14. Inform the HP Lead of the sample readings.
15. Remove the filter (using tweezers) and the cartridge from sample head and place filter and cartridge in separate plastic bags then seal bags.

a. Calculate the Ci/cc of Iodine Activity or Particulate Activity using the equations:

Cartridge Filter: AgZ Filter Charcoal Filter

Iodine Filter:

(Sample CPM _____) - (Background CPM _____) = Net CPM _____

$$\frac{\text{Net CPM}}{(1.89 \times 10^8) \times (\text{sample volume ft}^3)} = \text{_____ } \mu\text{Ci/cc I Activity}$$

NOTE: $1.89 \times 10^8 = 0.003 \text{ (eff)} \times 2.83 \times 10^4 \text{ cc/ft}^3 \times 2.22 \times 10^6 \text{ dpm}/\mu\text{Ci}$

NOTE: If using charcoal cartridge, ensure cartridge is purged of noble gases.

Particulate Filter:

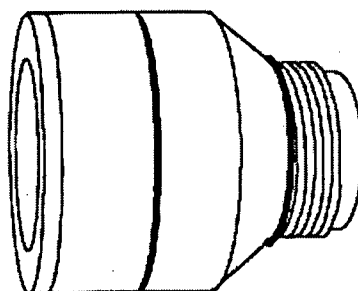
(Sample CPM _____) - (Background CPM _____) = Net CPM _____

$$\frac{\text{Net CPM}}{(5.65 \times 10^9) \times (\text{sample volume ft}^3)} = \text{_____ } \mu\text{Ci/cc Particulate Activity}$$

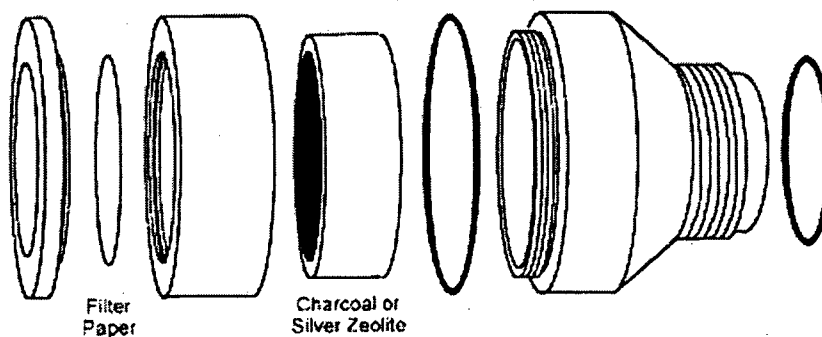
NOTE: $5.65 \times 10^9 = 0.09 \text{ (eff)} \times 2.83 \times 10^4 \text{ cc/ft}^3 \times 2.22 \times 10^6 \text{ dpm}/\mu\text{Ci}$

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SAMPLE HEAD DIAGRAM



Sample Head - Assembled



Sample Head - Disassembled

970713
Nov 1997

**Filter Cartridge and Sample Head for High Volume Air Sampling Pumps
Model CFH-30**

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INITIATION AND TERMINATION OF ERDS

Performing these steps activates the ERDS system and causes Columbia Generating Station data to be displayed at the NRC Operations Center and, give indication we are in, (or anticipate), an emergency. DO NOT activate ERDS for training or drill purposes unless prior arrangements have been made.

I. INITIATION

The ERDS program is on the HP Lead and OSC Manager's PC and runs on the LAN. Power up the HP Lead's or OSC Manager's computer to start the initiation process.

A. From the HP Lead and OSC Manager's PC located in the OSC:

1. Log onto the LAN using your user ID and password.
2. Start PDIS by double clicking on the appropriate PDIS icon (PDIS Plant for actual events or emergencies, or PDIS Simulator for drills or exercises).
3. Select the EOP pull-down menu and select ERDS to start ERDS.

B. Screen will display the ERDS program. Then:

1. Determine if ERDS is already running note the status in the ERDS State field. If anything other than "Quiet" is shown, then ERDS is running. If ERDS is running notify HP Lead ERDS is running and have them note the time.
2. If ERDS is NOT running, click on Start to start the ERDS link.
3. Click on Start in the follow on dialog box. ERDS State field should change to Activate.

C. Verify that the link was established by:

1. Noting ERDS State field changes to Dial, Link, Accepted, then Sending.
2. It will take about a minute and a half for the connection to be completed and data being sent. Once data is being sent and not done so already, notify the HP Lead ERDS is up and running and have them note the time.

E. If unable to establish the ERDS link:

1. Contact the TSC Computer Engineer to troubleshoot the problem. Contact the STA to start ERDS from the Control Room.
2. Inform the both the OSC and TSC Manager that you are unable to activate ERDS.

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II. VERIFICATION

To view Rad Status Screen, click on "View" then click on "Rad Status." Once ERDS link is established, minimize ERDS window. To close the real time data view, click on the View Status button.

CAUTION

Ensure you do not inadvertently "Terminate" the ERDS session once it has been started.

III. TERMINATION

To terminate the ERDS link from Columbia Generating Station to the NRC Operations Center, do the following:

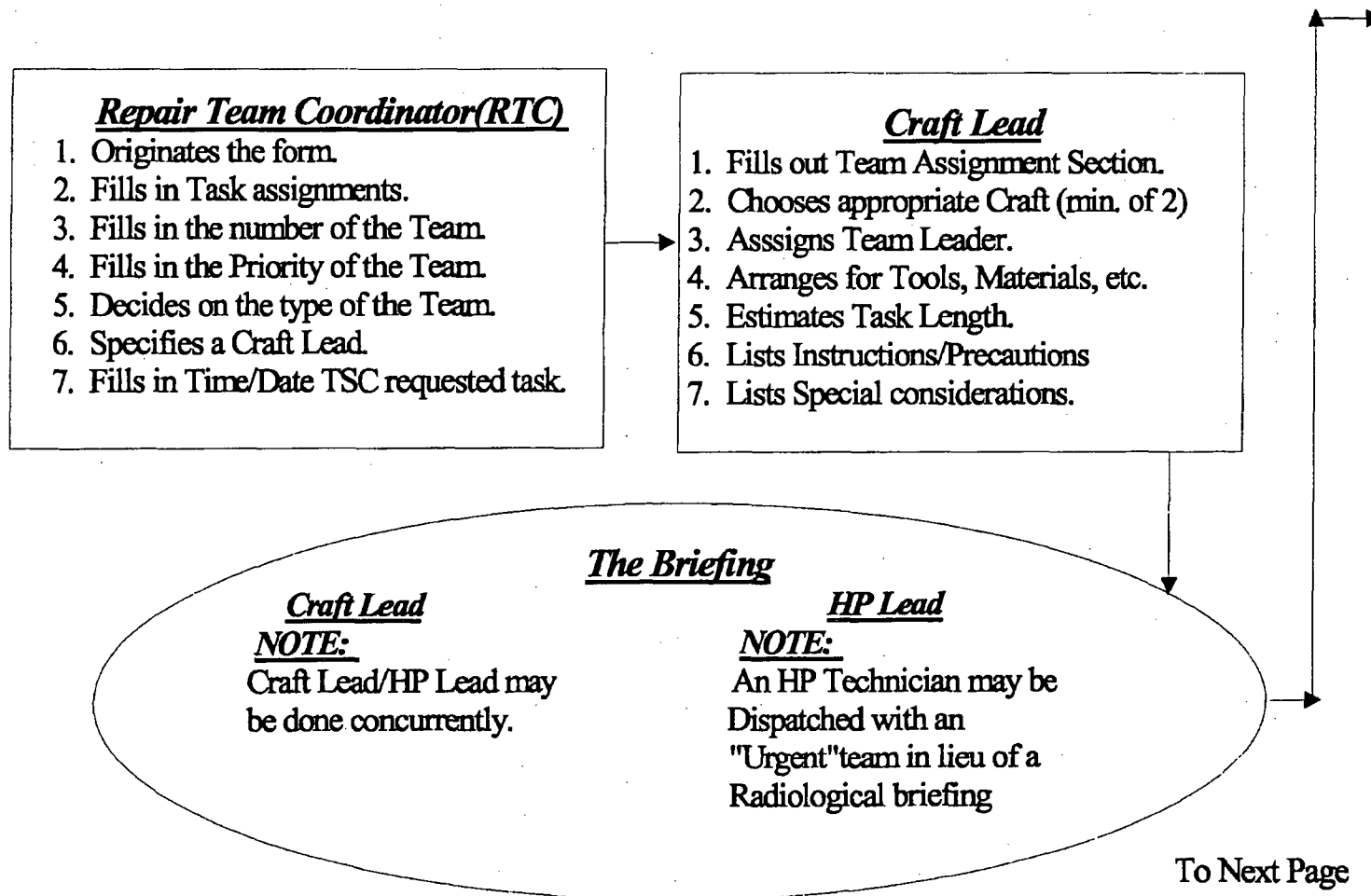
- A. Click on the Stop button.
- B. Click on With Terminate in the follow on dialog box.
- C. Verify that the ERDS link has been terminated:
 1. Note that the ERDS State field changes to Terminate, then Quiet.
 2. Shut down the PC.

NOTE: If you desire other functions, or program information, the ERDS Users Manual is stored in the OSC HP Lead's Cabinet.

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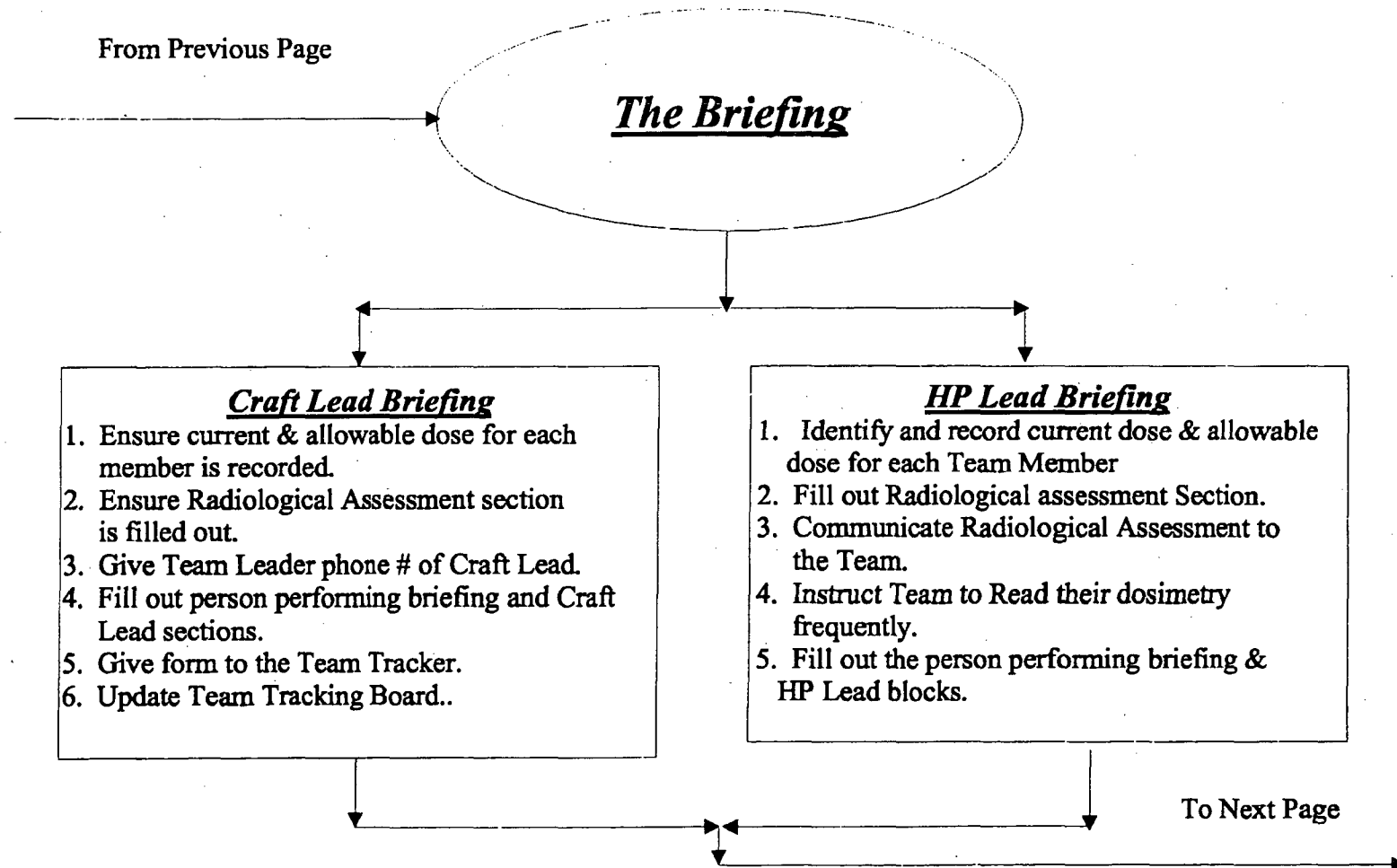
Repair Team Briefing/Debriefing Form Flow Path

Note: This flow path also has activities that happens at the various stops in the OSC.



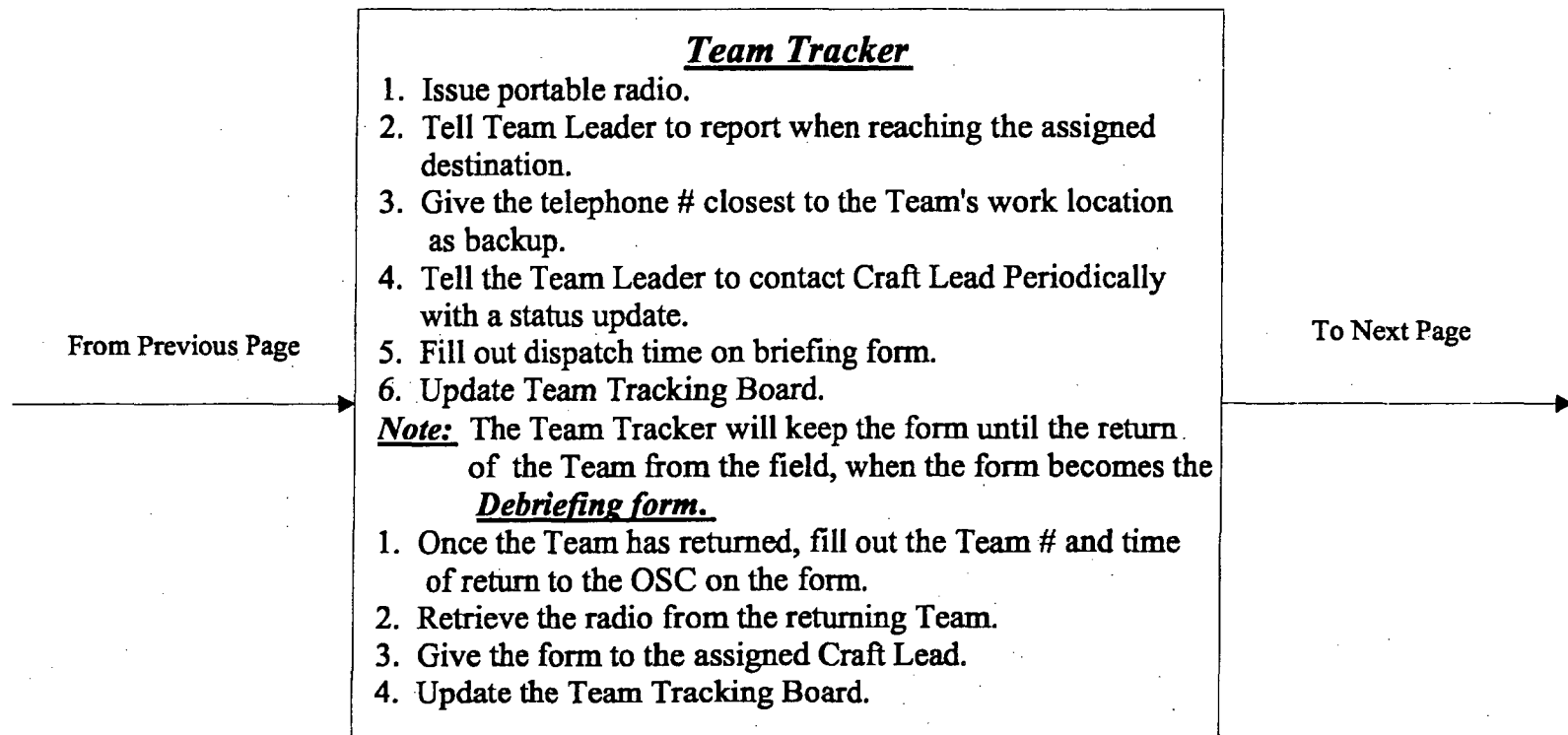
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Repair Briefing/Debriefing Form Flow Path (continued)



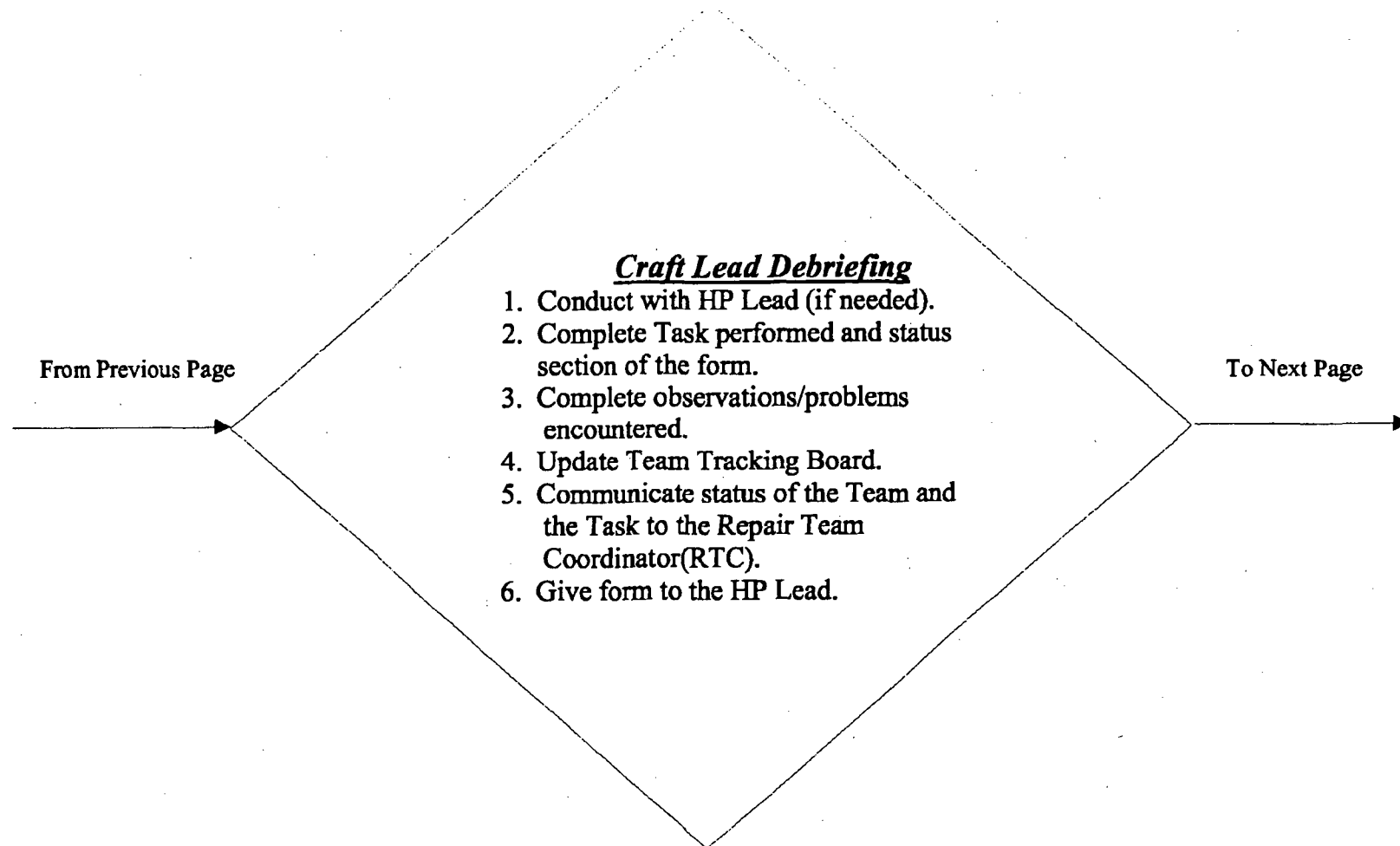
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