



October 10, 2000

L-2000-206
10 CFR 50 Appendix E

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Emergency Plan Implementing Procedures

In accordance with 10 CFR 50 Appendix E, enclosed is a copy of the revised procedures that implement the Emergency Plan as listed below.

<u>Number</u>	<u>Title</u>	<u>Revision</u>	<u>Implementation Date</u>
EPIP-02	Duties And Responsibilities Of The Emergency Coordinator	7	September 25, 2000
EPIP-10	Off-Site Radiological Monitoring	4	September 26, 2000
HP-202	Environmental Monitoring During Emergencies	27	September 27, 2000

EPIP-02 was revised to remove reference to a canceled site policy, clarify windspeed for unit shutdown, and revise re-entry guidelines. EPIP-10 corrected the sample location designation on Attachment 5, added dose rate or concentration estimating capability, and revised the dose and survey data worksheet. HP-202 corrected on-site monitoring locations 15 and 16 on the Figure in Appendix B. Editorial and administrative changes were also made to the listed procedures.

Please contact us if there are any questions regarding these procedures.

Very truly yours,

Rajiv S. Kundalkar
Vice President
St. Lucie Plant

RSK/tlt

Enclosures

cc: Regional Administrator, USNRC, Region II (2 copies)
Senior Resident Inspector, USNRC, St. Lucie Plant w/o

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ST. LUCIE PLANT EMERGENCY PLAN IMPLEMENTING PROCEDURE

SAFETY RELATED

Procedure No.
EPIP-02

Current Rev. No.
7

Effective Date:
09/25/00

Title:

DUTIES AND RESPONSIBILITIES OF THE EMERGENCY COORDINATOR

Responsible Department: **EMERGENCY PLANNING**

Revision Summary

Revision 7 - Deleted policy reference per PMAI, clarified windspeed for unit shutdown, revised re-entry guidelines and made editorial changes. (J. R. Walker, 09/21/00)

Revision 6 - **THIS PROCEDURE HAS BEEN COMPLETELY REWRITTEN.** Deleted information and instructions for off-site notifications and PARs. Relocated to new EPIP-08 off-site notifications and protective action recommendations. Addressed early activation of emergency response facilities per PMAI PM00-13-122. Made administrative and editorial changes. (Donna Calabrese, 05/31/00)

Revision 5 - Added instructions for implementation / actuation of new gai-tronics alarm - emergency plan activation and made human factors improvements. (J. R. Walker, 01/18/00)

Revision 4 - Clarified records required, revised EC turnover process, changed "at the site" to "within the Owner Controlled Area", clarified use of field monitoring data for PARs, added guidance for completing the NRC notification form, and made editorial changes. (J. R. Walker, 11/02/99)

Revision	FRG Review Date	Approved By	Approval Date	
0	12/15/97	J. Scarola Plant General Manager	12/15/97	S__OPS DATE _____ DOCT PROCEDURE _____ DOCN EPIP-02 _____ SYS _____ COMP COMPLETED _____ ITM 7 _____
7	09/21/00	R. G. West Plant General Manager	09/21/00	
		N/A Designated Approver		<div style="border: 2px solid black; padding: 5px; display: inline-block;"> CONTROL 818 COPY </div>
		N/A Designated Approver (Minor Correction)		

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PROCEDURE PRODUCTION

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1.0 PURPOSE

This procedure provides guidance and instructions to be followed by the Emergency Coordinator when an emergency occurs that requires the implementation of the Radiological Emergency Plan for St. Lucie Plant.

NOTE

One or more of the following symbols may be used in this procedure:

§ Indicates a Regulatory commitment made by Technical Specifications, Condition of License, Audit, LER, Bulletin, etc., and shall NOT be revised without Facility Review Group review and Plant General Manager approval.

¶ Indicates a management directive, vendor recommendation, plant practice or other non-regulatory commitment that should NOT be revised without consultation with the plant staff.

2.0 REFERENCES/RECORDS REQUIRED/COMMITMENT DOCUMENTS

2.1 References

1. St. Lucie Plant Updated Final Safety Analysis Report (UFSAR) Unit 1 and Unit 2 (Section 9.5.A.7.2)
- §₁ 2. St. Lucie Plant Radiological Emergency Plan (E-Plan)
3. St. Lucie Plant Physical Security Plan
4. St. Lucie Plant Safeguards Contingency Plan
5. E-Plan Implementing Procedures (EPIP 00-13)
6. 10 CFR 50, Domestic Licensing of Production and Utilization Facilities.
7. NUREG/BR-0150, Vol. 1, Response Technical Manual (USNRC).
8. NUREG-0654, FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

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2.0 REFERENCES/RECORDS REQUIRED/COMMITMENT DOCUMENTS		
(continued)		
2.1 (continued)		
9. EPA 400-R-92-001, Manual of Protective Actions Guides and Protective Actions for Nuclear Incidents, October, 1991.		
2.2 Records Required		
¶10	A copy of the checklists or data generated by this procedure shall be maintained in the plant files in accordance with QI-17-PSL-1, Quality Assurance Records. Records include:	
1. Emergency Class Checklists		
2.3 Commitment Documents		
¶11	1. PMAI PM96-04-165, "ITR 96-006" (Unusual Event Declared Due to Dropped Rod)	
¶12	2. NRC Inspection Report 91-01, Closure of IFIs 89-31-03 and 89-31-01	
¶13	3. PMAI PM96-09-185, Condition Report CR-96-1750 (Off-site Notification Using Commercial Phone)	
¶15	4. PMAI PM96-05-233, (Off-site Notification Process).	
¶16	5. Condition Report CR 96-2389, (Off-site Dose Calculations).	
¶17	6. Condition Report CR 98-1536 (EC Responsibilities Remain in the Control Room).	
¶18	7. PMAI PM98-09-006 (Control of NLOs Under E-Plan).	
¶19	8. Condition Report CR 99-1406 (Field Operator Dosimetry Under E-Plan).	
¶110	9. PMAI PM99-10-191, Condition Report CR 99-1656 (Quality Records, Downpower Guidance Due to Hurricanes).	

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(continued)		
2.3 (continued)		
¶ ₁₁	10. PMAI PM99-10-142, Condition Report CR 99-1647 (EC Turnover).	
¶ ₁₂	11. PMAI PM99-09-016, (PARs Based on FMT Data, Completion of NRC Notification Form).	
¶ ₁₃	12. PMAI PM00-01-043, (Gai-Tronics E-Plan Alarm).	
¶ ₁₄	13. PMAI PM00-03-122, (Early Activation of ERFs).	
3.0 RESPONSIBILITIES		
3.1 The Nuclear Plant Supervisor (NPS) and the shift operating staff represent the first line of response to any developing emergency condition. The primary responsibility of the NPS is to control the condition as well as possible.		
3.2 The NPS upon declaration of an emergency classification becomes the Emergency Coordinator (EC). The NPS remains the EC until the position is turned over.		
Specific Responsibilities of the EC are:		
Direction of the on-site emergency organization to bring the emergency under control.		
Notification of off-site agencies within specific time limits as mandated by regulations.		
Changes in Emergency Classification based on changing conditions.		
Protective Action Recommendations (PARs) until turnover to the Recovery Manager.		
Interfaces with the Nuclear Regulatory Commission (NRC) Reactor Safety Operations Coordinator (RSOC) when the NRC site team arrives at the TSC.		

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4.0 DEFINITIONS

4.1 Owner Controlled Area Evacuation (= Site Evacuation) - The evacuation from the owner controlled area of all personnel except those required to place the plant in a safe condition, the Emergency Response Organization (ERO), and Security personnel to fulfill responsibilities for evacuation.

4.2 Release (during any declared emergency)

- 1. Any effluent monitor increase of (approximately) 10 times or one decade above pre-transient values.**

OR

- 2. Health Physics detecting airborne radioactivity levels in excess of 25% derived air concentration (DAC) outside of plant buildings due to failure of equipment associated with the declared emergency.**

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5.0 INSTRUCTIONS

5.1 General Overview

- ¶7,11 1. Upon Declaration of an emergency classification the NPS becomes the EC.

To ensure access to the EC for direction and control decisions and so that the responsibilities of the position can be successfully completed, the EC position shall remain, initially in the affected Control Room and then in the Technical Support Center (TSC), when it goes operational.

Prior to the TSC being operational, the duties and responsibilities of the EC, while a Control Room position, may be turned over to another qualified EC:

- If both Units are in classified events, the EC should locate in the Unit's Control Room with the highest classified event. If the site is in a dual Unit event, the EC should locate in the Unit 1 Control Room (due to proximity to the TSC).

If the TSC is activated, Then the EC position is turned over to an EC qualified member of plant management and the position relocated to the TSC. The prospective EC receives a turnover (refer to Attachment 3, Turnover Guidelines) from the Control Room EC and then reports to the TSC. Following verification of TSC operational readiness, the prospective EC accepts EC responsibility from the Control Room EC. The TSC EC may temporarily turnover responsibility to the TSC OPS Coordinator as the need arises.

2. To meet the above responsibilities, plus others described in this procedure, the EC will likely need to delegate many tasks. Although delegated, the completion of these tasks is still the responsibility of the EC.

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5.0 INSTRUCTIONS (continued)

5.1 General Overview (continued)

2. (continued)

The EC shall not delegate the following responsibilities prior to Emergency Operations Facility (EOF) being declared operational:

- A. Classification of the emergency.**
- B. The decision to notify state and local authorities and the content of those notifications.**
- C. Recommendation of protective actions for the public.**

Once the EOF is operational and proper turnover has been conducted, the Recovery Manager (RM) will assume responsibility for off-site notifications to the state and local authorities and for recommending protective actions.

3. Order of Succession

If the NPS is incapacitated, Then the EC shall be (in order of succession):

- A. Assistant Nuclear Plant Supervisor (ANPS) (from the affected unit)**
- B. Nuclear Watch Engineer (NWE)**
- C. Any other member of the plant staff with an active SRO license.**

4. Watch Relief

- A. The EC shall grant permission for watch relief, including his/her own, only when it is safe in his/her judgement to do so.**

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5.0 INSTRUCTIONS (continued)

5.1 General Overview (continued)

5. Early Activation of Emergency Response Facilities

It may be useful to have technical and/or operational support available early in an emergency prior to when the Technical Support Center (TSC), Operational Support Center (OSC), or Emergency Operations Facility (EOF) is required to be operational. Activation of any of these facilities does not require declaration of an emergency class or entry into a specific emergency classification. If early activation of one or more of the facilities is desired, then follow these guidelines:

- A.** This is an option during normal working hours only.
- B.** A page announcement should be made to request that appropriate Emergency Response Organization personnel to report to the [identify what facility/facilities is/are to be activated early].
- C.** Turnover of EC responsibilities is done in accordance with Step 5.1.1., above.
- D.** The E-Plan Activation Alarm is used only when the Emergency Response Facilities (ERFs) are to be activated in accordance with the requirements of the Emergency Plan (i.e., at the Alert or higher emergency level) and is provided for in the checklist included in this procedure.
- E.** Staff augmentation due to actual facility activation is to be done in accordance with the Alert Checklist or Site Area or General Emergency Checklist which are part of this procedure.

6. Security Event

- A.** Site security and Local Law Enforcement (LLEA) will take the lead in response to a Security Event in accordance with the Security Plan.

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5.0 INSTRUCTIONS (continued)

5.1 General Overview (continued)

6. (continued)

B. Based on the nature of the Security Event and as conditions warrant, the Emergency Coordinator may delay, postpone or institute special arrangements concerning, but not limited to:

Emergency Response Facility (ERF) activation

Local or Site Evacuation

Site or Radiation Controlled Area (RCA) access

Operator field activities

Unit shutdown

7. Severe Weather Considerations

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If a hurricane warning is in effect, and either one or both Unit(s) is/are in Mode 1, 2 or 3, Then use the following criteria for unit shutdown:

NOTE

Sustained hurricane force winds are sustained winds of 74 mph (64 kt or 119 kph) or greater.

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A. For storms projected to reach a Category 1 or 2, the Unit(s) shall be placed in HOT STANDBY (Mode 3) or below at least two (2) hours before the projected onset of sustained hurricane force winds within the Owner Controlled Area and both Units shall remain off-line for the duration of the hurricane force winds (or restoration of reliable offsite power).

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B. For storms projected to reach Category 3, 4 and 5 prior to landfall, the Units shall be shut down to a temperature less than 350 degrees T ave. at least two (2) hours before the projected onset of sustained hurricane force winds within the Owner Controlled Area and both Units shall remain off-line for the duration of the hurricane force winds (or restoration of reliable offsite power).

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C. Establish an acceptable update frequency with state and local officials.

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5.0 INSTRUCTIONS (continued)

5.1 General Overview (continued)

8. Drill Messages

During exercises, drills, or tests, **ALL MESSAGES** shall begin and end with **THIS IS A DRILL** or **THIS IS AN EXERCISE** or **THIS IS A TEST**.

END OF SECTION 5.1

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.2 Emergency Declaration Checklist

CAUTION

State and/or local authorities shall be notified within 15 minutes of declaration of the emergency classification.

NOTE

Steps should be performed in the order presented. When conditions warrant, steps may be performed out of sequence. PA announcements are provided as a guideline. Actual announcements may vary from the text provided.

1. The NPS shall declare the emergency to the Control Room staff and formally announce that he/she is the Emergency Coordinator (EC). ___/___

2. Notify plant personnel using Gai-tronics and boost function. ___/___

"Attention all plant personnel, Unit (1) (2) has declared (classification). Shift Technical Advisor and Duty Call Supervisor report to the Control Room immediately. All other plant personnel be aware and listen for further instructions. Limit radio and phone use until further notice." ___/___

3. Complete the appropriate Emergency Classification Section Checklist (attached):

A. Section 5.3 (Notification of) **Unusual Event Checklist** ___/___

B. Section 5.4 **Alert Checklist** ___/___

C. Section 5.5 **Site Area or General Emergency Checklist** ___/___

END OF SECTION 5.2

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.3 UNUSUAL EVENT CHECKLIST (continued)

NOTE

The Duty Call Supervisor (DCS) is a specifically designated and trained supervisor responsible for assisting the Emergency Coordinator (EC) in making notifications and calls to the Emergency Response Organization (ERO).

4. If the DCS is not available to perform off-site notifications, Then perform the required notifications in accordance with EPIP-08, Off-site Notifications and Protective Action Recommendations. ___/___ /R7
5. Ensure notification of Plant Management, Security and the Nuclear Division Duty Officer (NDDO). This may be accomplished by the DCS. ___/___
6. Reassess corrective and protective actions. Verify assigned activities are under way and proper progress is being made. Reassign personnel and emergency teams as necessary.
7. Continue to assess conditions and review any changes against the Emergency Action Levels (EALs) in EPIP-01, Classification of Emergencies.
8. Reclassify the event as necessary and follow instructions in the appropriate checklist.

NOTE

New notification forms shall be prepared for all updates.

/R7

9. If the classification is unchanged but a significant change in plant conditions has occurred, Then start a new Unusual Event Checklist. ___/___

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.3 UNUSUAL EVENT CHECKLIST (continued)

10. If the event can be terminated, Then complete the notification forms (State, NRC) and notify the following:

State Warning Point ___/___

Plant Management ___/___

Security ___/___

NDDO ___/___

NRC ___/___

11. All Unusual Event Checklist items completed/satisfied. ___/___

END OF SECTION 5.3

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.4 ALERT CHECKLIST

Date / /
 Message #

NOTE

- For assistance with control of Non-licensed Operators (NLOs), refer to:
 - Attachment 4, Re-entry Guidelines.
 - Attachment 5, Basis for Exposure Limits for Emergency Response Personnel.
- Prepare a new checklist for each notification made during an Alert emergency.
- The term "release" has a specific definition in Section 4.0 of this procedure.

/R7

CAUTION

Any data related to a release of radioactive material (e.g., off-site dose projections or field monitoring readings) shall first be reviewed against the Emergency Action Levels (EALs) in EPIP-01, Classification of Emergencies, and secondarily against the Protective Action Recommendation (PAR) guidance in EPIP-08, Off-Site Notifications and Protective Action Recommendations, for applicability.

/R7

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1. If a radioactive release has occurred or is in progress, Then notify Chemistry to promptly perform off-site dose calculations per EPIP-09, Off-site Dose Calculations, and report results to the EC. If Chemistry is unavailable, Then have the DCS call out a Chemist.
2. If evacuation of an area is necessary, Then initiate a local evacuation in accordance with EPIP-07, Conduct of Evacuations/Assembly. (Refer to Attachment 2, Criteria for Evacuation.)

 /

 /

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5.0 INSTRUCTIONS (continued) TIME / INIT

5.4 ALERT CHECKLIST (continued)

¶₁₃ 3. Sound the Emergency Plan (E-Plan) Activation Alarm (N/A for updates). ____/____

4. Notify plant personnel of the emergency declaration using Gai-tronics and boost function (N/A for updates).

"Attention all plant personnel, Unit (1) / (2) has declared an ALERT."

"All emergency response organization personnel report at once to your assigned emergency response facility."

"All non-emergency response organization personnel report to your normal work location or contact your supervisor."

Repeat the announcement. ____/____

¶₁₂ 5. If a release is in progress, Then review personnel access with Health Physics personnel and notify Security personnel with any special instructions (N/A for updates). ____/____

NOTE

The Duty Call Supervisor (DCS) is a specifically designated and trained Supervisor responsible for assisting the Emergency Coordinator (EC) in making notifications and calls to the Emergency Response Organization (ERO).

6. If the DCS is not available to initiate staff augmentation, Then perform the call-out process in accordance with EPIP-03, "Emergency Response Organization Notification/ Staff Augmentation." (N/A for updates.) ____/____ /R7

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5.0 INSTRUCTIONS (continued) TIME / INIT

5.4 ALERT CHECKLIST (continued)

- 7. If the DCS is not available to perform off-site notifications, Then perform the required notifications in accordance with EPIP-08, Off-site Notifications and Protective Action Recommendations. ___/___ /R7
- 8. Verify notification of Plant Management, Security and the NDDO. This may be accomplished by the DCS. ___/___
- 9. Initiate the Operations Department Accountability Aid for both Unit 1 and Unit 2 and provide this list to the TSC when requested. This may be accomplished by the DCS. (N/A for updates). ___/___
- 10. Ensure Operations field personnel have returned to the Control Room to obtain emergency Electronic Personal Dosimetry (EPD) from the HP Kit. ___/___
- 11. Reassess corrective and protective actions. Verify assigned activities are under way and proper progress is being made. Reassign personnel and emergency teams as necessary.
- 12. Continue to assess conditions and review any changes against the Emergency Action Levels (EALs) in EPIP-01, Classification of Emergencies.
- 13. Reclassify the event as necessary and follow instructions in the appropriate checklist.

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NOTE
New notification forms shall be prepared for all updates.

/R7

- 14. If the classification is unchanged but a significant change in plant conditions has occurred, Then start a new Alert Checklist. ___/___

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.4 ALERT CHECKLIST (continued)

15. If a State/Local notification has not been completed in the last 60 minutes, Then provide a routine update. Start a new notification form and make the appropriate notifications.

___/___

16. If the event can be terminated, Then complete the notification forms (State, NRC) and notify the following:

State Warning Point

___/___

Plant Management

___/___

Security

___/___

NDDO

___/___

NRC

___/___

17. All Alert Checklist items completed/satisfied.

___/___

END OF SECTION 5.4

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5.0 INSTRUCTIONS (continued) TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST

Date / /
Message #

NOTE
<ul style="list-style-type: none"> • For assistance with control of Non-licensed Operators (NLOs), refer to: <ul style="list-style-type: none"> ■ Attachment 4, Re-entry Guidelines ■ Attachment 5, Basis for Exposure Limits for Emergency Response Personnel • Prepare a new notification form for each notification made during a Site Area Emergency or General Emergency. • The term "release" has a specific definition in Section 4.0 of this procedure.

/R7

CAUTION
<p>Any data related to a release of radioactive material (e.g., off-site dose projections or field monitoring readings) shall first be reviewed against the Emergency Action Levels (EALs) in EPIP-01, Classification of Emergencies, and secondarily against the Protective Action Recommendation (PAR) guidance in EPIP-08, Off-Site Notifications and Protective Action Recommendations, for applicability.</p>

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¶₆

1. If a radioactive release has occurred or is in progress, Then notify Chemistry to promptly perform off-site dose calculations per EPIP-09, Off-site Dose Calculations, and report results to the Emergency Coordinator. If Chemistry is unavailable, Then have the DCS call out a Chemist. /
2. If a radioactive release has occurred or is in progress, Then identify wind direction. /

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST (continued)

NOTE

When the EOF is declared operational AND the Recovery Manager has assumed responsibility, Then notifications and PARs will be performed from the EOF.

¶₁₂

3. If a release is in progress, Then review personnel access with Health Physics personnel and notify Security personnel with any special instructions (N/A for updates).

____/____

¶₁₃

4. If the Technical Support Center, Operational Support Center and Emergency Operations Facility are **NOT** activated, Then:

- A. Sound the Emergency Plan (E-Plan) Activation Alarm (N/A for updates).

____/____

- B. Notify plant personnel of the emergency declaration using Gai-tronics and boost function (N/A for updates).

"Attention all plant personnel, Unit (1)/(2) has declared a (SITE AREA EMERGENCY)/(GENERAL EMERGENCY)."

"All emergency response organization personnel report at once to your assigned emergency response facility."

____/____

- C. Repeat Steps A and B above (N/A for updates).

____/____

5. If the site is **NOT** evacuated, Then sound the Site Evacuation Alarm.

____/____

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST (continued)

NOTE

To provide a clear announcement, the following step should be read and the content of the announcement determined prior to starting the announcement.

6. Make the necessary plant announcement using Gai-tronics and boost function:

A. If done in Step 5.5.4 above, Then GO TO Step 5.5.6.B.

OR

Announce the following (N/A for updates):

"Attention all plant personnel, Unit (1)/(2) has declared a (SITE AREA EMERGENCY)/
(GENERAL EMERGENCY)."

NOTE

An alternate off-site Assembly Area at the Jensen Beach parking area is available if the wind direction is from 146° to 270°.

B. If the site is **NOT evacuated and there is **NOT** or has **NOT** been a radiological release, Then announce the following:**

"All non-emergency response organization personnel are to commence evacuation of the Owner Controlled Area, report to your vehicle and proceed to your homes."

OR

If the site is **NOT** evacuated and there is or has been radiological release, Then announce the following:

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST (continued)

6. (continued)

B. (continued)

"All non-emergency response organization personnel are to commence evacuation of the Owner Controlled Area. Persons leaving the site are to proceed (North)/(South) away from the plant to (Jaycee Park)/(Jensen Beach Parking Area) for contamination check, accountability and further instructions."

7. If a SITE AREA EMERGENCY, Then REPEAT Steps 5.5.6.A and 5.5.6.B above (N/A for updates).

OR

If a GENERAL EMERGENCY, Then REPEAT Step 5.5.6.A above (N/A for updates).

8. If the site is NOT evacuated, Then order Security to ensure evacuation of the Owner Controlled Area and to report personnel accountability as soon as possible (N/A for updates).

____/____

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5.0 INSTRUCTIONS (continued) TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST (continued)

CAUTION

PARs are always required for General Emergencies and may be required for lesser emergencies. Refer to EPIP-08, Off-site Notifications and Protective Action Recommendations.

NOTE

The Duty Call Supervisor (DCS) is a specifically designated and trained supervisor responsible for assisting the Emergency Coordinator (EC) in making notifications and calls to the Emergency Response Organization (ERO).

9. If the TSC and OSC are **NOT activated, Then:** ___/___

A. Notify the DCS to initiate staff augmentation in accordance with EPIP-03, Emergency Response Organization Notification/Staff Augmentation, if available.

OR

B. Perform the call-out process in accordance with EPIP-03. /R7

10. If the DCS is **NOT available to perform off-site notifications, Then perform the required notifications in accordance with EPIP-08, Off-site Notifications and Protective Action Recommendations.** ___/___ /R7

11. Verify notification of Plant Management, Security and NDDO. This may be accomplished by the DCS. ___/___

12. Initiate the Operations Department Accountability Aid for both Unit 1 and Unit 2 and provide this list to the TSC when requested. This may be accomplished by the DCS. (N/A for updates). ___/___

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5.0 INSTRUCTIONS (continued)		<u>TIME / INIT</u>
5.5 <u>SITE AREA OR GENERAL EMERGENCY CHECKLIST</u> (continued)		
	13. Verify with Security that the evacuation of the Owner Controlled Area has been completed and all personnel have been accounted for (N/A for updates).	___/___
	14. Update the State Warning Point and NRC when the evacuation is complete. This may be accomplished by the DCS or TSC. (N/A for updates).	___/___ /R7
19	15. Ensure Operations field personnel have returned to the Control Room or OSC to obtain emergency Electronic Personal Dosimetry (EPD) (N/A for updates).	___/___
18	16. Direct that all Non-licensed Operators (NLOs), from both Units, report to the OSC (when operational) following evacuation of the Owner Controlled Area (N/A for updates).	___/___
	17. Reassess corrective and protective actions. Verify assigned activities are under way and proper progress is being made. Reassign personnel and emergency teams as necessary.	___/___
	18. Continue to assess conditions and review any changes against the Emergency Action Levels (EALs) in EPIP-01, Classification of Emergencies.	___/___
	19. Upgrade to a General Emergency, as necessary. Start new checklist upon upgrading.	___/___
	20. <u>If</u> the classification is unchanged but a significant change in plant conditions has occurred <u>AND</u> the EOF is <u>NOT</u> operational, <u>Then</u> start a new Site Area or General Emergency Checklist, prepare notification forms and make the appropriate notifications as soon as possible.	___/___

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5.0 INSTRUCTIONS (continued)

TIME / INIT

5.5 SITE AREA OR GENERAL EMERGENCY CHECKLIST (continued)

CAUTION
Only the Recovery Manager (RM) can authorize the downgrading of emergency classifications from Site Area or General Emergency.

NOTE
If the EOF is not operational at this time, contact Recovery Manager for information concerning turnover of notification and PAR responsibilities.

- 21. If the event can be downgraded or terminated, Then discuss with Recovery Manager.** /

1/2

NOTE
New notification forms shall be prepared for all updates.

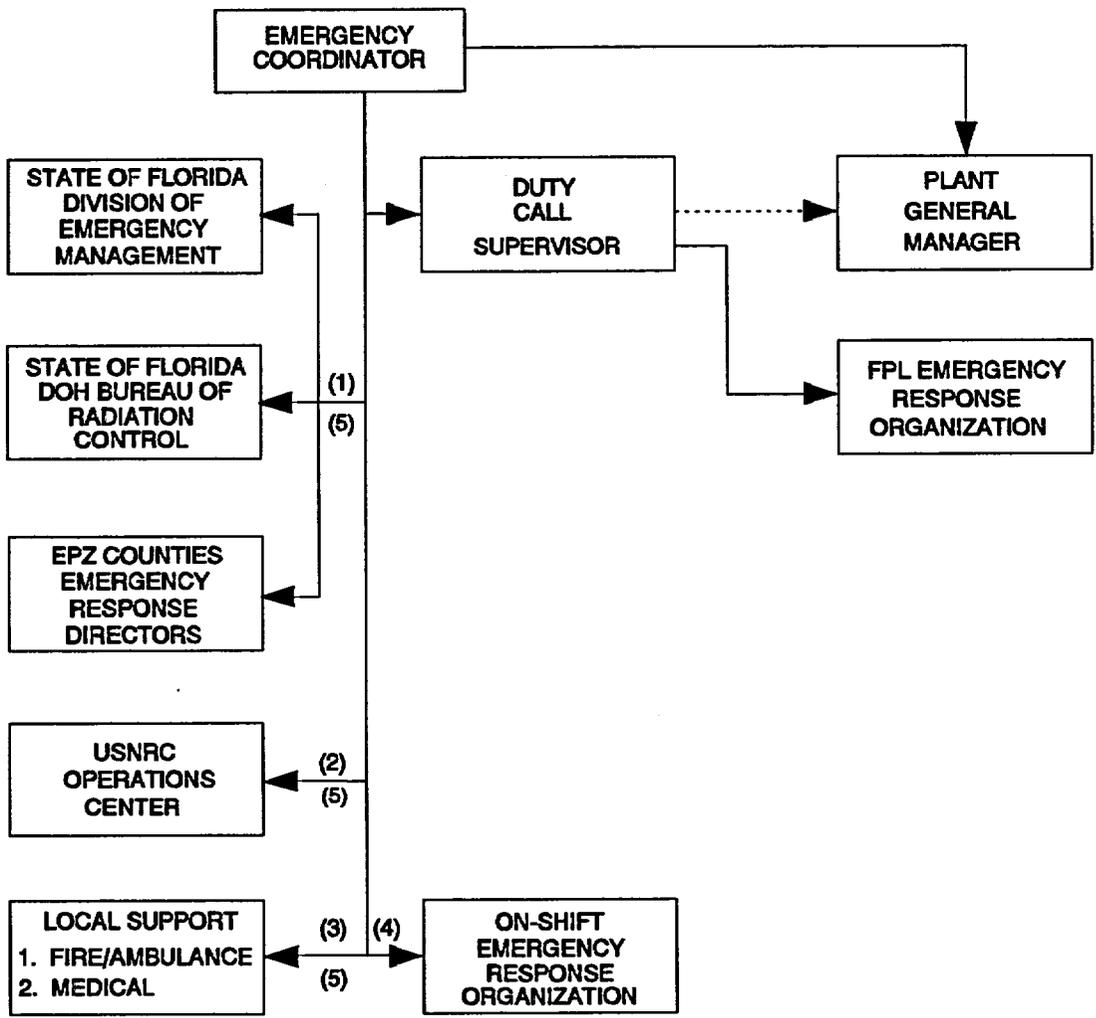
/R7

- 22. If an off-site notification has not been completed in the last 60 minutes AND the EOF is **NOT** operational, Then provide a routine update. Start a new notification form and make the appropriate notifications.** /

- 23. All Site Area or General Emergency Checklist items completed/satisfied.** /

END OF SECTION 5.5

**ATTACHMENT 1
INITIAL NOTIFICATION FLOW
(Page 1 of 1)**



Legend:
 _____ Primary Notification Pathway
 - - - - - Alternate Notification Pathway

- (1) Via State Hot Ring Down Telephone (HRD)
- (2) Via Emergency Notification System (ENS)
- (3) Medical & Fire Emergencies Only, As Needed
- (4) Via Plant Public Address System (PA)
- (5) May be performed by the Duty Call Supervisor.

(EPIP-02A.WPG)

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**ATTACHMENT 2
CRITERIA FOR EVACUATION**

(Page 1 of 1)

A. Criteria for Local Evacuation

The need for Local Evacuation should be determined in accordance with the following criteria:

Evacuate the affected local area in which any of the following conditions occur:

1. Area Radiation Monitor Alarm.
2. Containment Evacuation Alarm.
3. Unevaluated direct radiation dose rate increase in excess of 100 mRem/hour above normal levels.
4. Unexpected airborne radioactivity concentration in excess of 1×10^{-9} micro Ci/cc.
5. Removable radioactive surface contamination in an unposted area in excess of 1000 dpm/100 cm² beta-gamma over an area of 100 ft².
6. Removable radioactive surface contamination in an unposted area in excess of 50 dpm/100cm² alpha over an area of 100 ft².
7. The Emergency Coordinator determines that a situation exists for which Local Evacuation is appropriate.

B. Criteria for Owner Controlled Area Evacuation

The Owner Controlled Area shall be evacuated in the following circumstances:

1. Site Area Emergency
2. General Emergency
3. If the Emergency Coordinator determines that the entire Owner Controlled Area should be evacuated.

END OF ATTACHMENT 2

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**ATTACHMENT 3
TURNOVER GUIDELINES**

(Page 1 of 2)

Upon arrival at the affected Control Room, the prospective Emergency Coordinator should review the following items/issues with the Control Room Emergency Coordinator (not in a particular order):

NOTE

This information (1-10 below) should be reviewed with the DCS.

1. Type of accident or incident
2. Plant status
3. Equipment out-of-service
4. Operator actions underway
5. Radiological conditions
6. Meteorological conditions
7. Procedure status
8. Emergency Plan activities underway, including any on-site or off-site protective actions
9. Conditions and/or trends of concern
10. Personnel injuries or radiation exposures

Prior to leaving Control Room verify the status of the following:

1. Emergency classification
2. Off-site notifications

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ATTACHMENT 3 <u>TURNOVER GUIDELINES</u> (Page 2 of 2)		
<p>Bring the following items to the Technical Support Center:</p> <ol style="list-style-type: none">1. Copy of RCO log (entries from start of the event)2. Completed notification forms (State and NRC)3. Operations Accountability Aid (only if completed)		
END OF ATTACHMENT 3		

REVISION NO.: 7	PROCEDURE TITLE: DUTIES AND RESPONSIBILITIES OF THE EMERGENCY COORDINATOR	PAGE: 31 of 34
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**ATTACHMENT 4
RE-ENTRY GUIDELINES
(Page 1 of 1)**

CAUTION

As specified in ADM-17.09, Invoking 10 CFR 50.54(x), the Emergency Coordinator (EC) may (with the concurrence of a licensed senior operator) waive re-entry requirements to place the plant in a safe shutdown condition or mitigate a release, if this immediate action is needed to protect the health and safety of the public.

1. **Prior to evacuation and with the Operational Support Center (OSC) NOT operational.**

Re-entry guidelines do not apply.

2. **Prior to evacuation and with the OSC operational.**

1_a Operators in the field should return to the Control Rooms and obtain an Electronic Personal Dosimeter (EPD) from the Health Physics Emergency Kit prior to returning to field.

3. **Evacuation ordered and with the OSC NOT operational.**

Operator actions in the field must be viewed as re-entry activities. Operators shall return to the Control Rooms following the evacuation order. Operators shall obtain an Electronic Personal Dosimeter (EPD) from the Health Physics Emergency Kit, if not done previously. Re-entry into the plant requires:

- a. The EC (initially the NPS) authorize the entry.
- b. Maintenance of appropriate radiological and safety measures.
- c. Tracking the whereabouts of the team.

4. **Evacuation ordered and with the OSC operational**

- a. NLOs, from both Units, are to report to the OSC once it is declared operational.
- b. All field activities are re-entries and shall be coordinated and controlled by the OSC.

END OF ATTACHMENT 4

/R7

REVISION NO.: 7	PROCEDURE TITLE: DUTIES AND RESPONSIBILITIES OF THE EMERGENCY COORDINATOR	PAGE: 32 of 34
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ATTACHMENT 5
§1 BASIS FOR EXPOSURE LIMITS FOR
EMERGENCY RESPONSE PERSONNEL
 (Page 1 of 3)

Exposure to emergency response personnel should be maintained As Low As Reasonably Achievable (ALARA). Actions taken during an emergency should take into consideration the amount of exposure required to accomplish the task versus the potential benefit to the public health and safety.

Conditions may warrant re-entry into high radiation areas leading to exposure in excess of the regulatory limit. Except for rescue of personnel (life-saving only), authorization must be given in advance by the Emergency Coordinator (EC) in consultation with the TSC Health Physics Supervisor (or alternate). If time permits, the EC should obtain concurrence from the Recovery Manager if the EOF is operational. In any case, where regulatory limits have been exceeded the EC shall notify the RM of the event.

For those remote circumstances involving an event in progress and obtaining EC approval will result in leaving the accident scene or decrease the victim(s) chance of survival, lifesaving actions may be performed without obtaining EC approval. The EC shall be notified immediately following the rescue operation.

Re-entry personnel that have been selected/chosen to exceed regulatory exposure limits should be volunteers⁽⁴⁾, broadly familiar with the risks involved (radiosensitivity of fetuses, effects of acute exposures, etc.), whose normal duties have trained them for such missions.

EPA 400 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, EPA 400-R-92-001 states that "To assure adequate protection of minors and the unborn during emergencies, the performance of emergency services should be limited to non-pregnant adults". FPL endorses this guidance; however, FPL recognizes that it is the right of the worker to make the decision to perform as an on-site emergency worker, understanding the potential risks involved.

Since, by their very nature, emergency exposures requiring immediate action are not planned, they are not controlled as a Planned Special Exposure. Dose received from exposure under emergency conditions will be added to the dose received during the current year, prior to the emergency, to determine compliance with the occupational dose limits in 10 CFR 20.

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ATTACHMENT 5
§1 BASIS FOR EXPOSURE LIMITS FOR
EMERGENCY RESPONSE PERSONNEL
 (Page 2 of 3)

Doses above regulatory limits will require reporting pursuant to 10 CFR 20.2202 and 20.2203. Any dose in excess of the annual limits specified in Section 20.1201(a) will be accounted for in accordance with 10 CFR 20.1206(e). If an individual exceeds any of these limits, then the individual will not be available for additional dose under 20.1201(a).

- | |
|---|
| NOTE |
| 1. Both Total Dose (TEDE) and Thyroid Dose (CDE) should be used for purposes of controlling exposure. |
| 2. Protective clothing, including respirators, should be used where appropriate. |

For the following missions, the exposure limit is ⁽¹⁾ :	Total Dose ⁽²⁾ (TEDE)	THYROID ⁽³⁾ (CDE)
Performance of actions that would not directly mitigate the event, minimize escalation, or minimize effluent releases.	5 REM	50 REM
Performance of actions that mitigate the escalation to the event, rescue persons from a <u>non-life</u> threatening situation, minimize exposures or minimize effluent releases.	10 REM	100 REM
Performance of actions that decrease the severity of the event or terminate the processes causing the event in an attempt to control effluent releases to avoid extensive exposure of large populations. Also, rescue of persons from a <u>life-threatening</u> situation.	25 REM	250 REM
Rescue of person from a <u>life-threatening</u> situation. (Volunteers ⁽⁴⁾ should be above the age of 45.)	(5)	(5)

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ATTACHMENT 5

**§1 BASIS FOR EXPOSURE LIMITS FOR
EMERGENCY RESPONSE PERSONNEL**

(Page 3 of 3)

- (1) Exposure limits to the lens of the eye are 3 times the Total Dose (TEDE) values listed.
- (2) Total Dose (TEDE) is the total whole body exposure from both external and internal (weighted) sources - Total Effective Dose Equivalent.
- (3) Thyroid Dose (CDE) commitment from internal sources - Committed Dose Equivalent. The same dose limits also apply to other organs (CDE), skin (Shallow Dose Equivalent) and extremities (Extremity Dose Equivalent).
- (4) Volunteers with full awareness of risks involved including numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- (5) No upper limit for Total Dose (TEDE) and/or Thyroid Dose (CDE) exposure has been established because it is not possible to prejudge the risks that one person should be allowed to take to save the life of another. Also, no specific limit is given for thyroid exposure since in the extreme case, complete thyroid loss might be an acceptable sacrifice for a life saved. This should not be necessary if respirators and/or thyroid protection for rescue personnel are available as the result of adequate planning.

END OF ATTACHMENT 5



**ST. LUCIE PLANT
EMERGENCY PLAN
IMPLEMENTING PROCEDURE**

SAFETY RELATED

Procedure No.
EP-10

Current Rev. No.
4

Effective Date:
09/26/00

Title:

OFF-SITE RADIOLOGICAL MONITORING

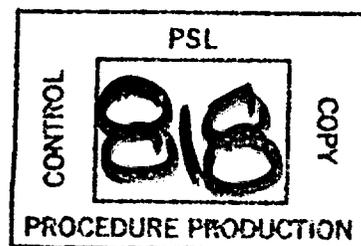
Responsible Department: **EMERGENCY PREPAREDNESS**

Revision Summary

Revision 4 - Corrected sample location designation on Attachment 5, added dose rate or concentration estimating capability, made administrative and editorial changes, and revised the dose and survey data worksheet. (J. R. Walker, 09/21/00)

Revision 3 - Added on-site monitoring points, made administrative changes, and incorporated new attachment. (J.R. Walker, 09/21/99)

Revision 2 - Improved status board update instructions, corrected procedure number to address QA comment from periodic review (Appendix J), and added editorial changes. (J. R. Walker, 03/18/99)



Revision	FRG Review Date	Approved By	Approval Date	S__OPS
<u>0</u>	<u>12/15/97</u>	<u>J. Scarola</u> Plant General Manager	<u>12/15/97</u>	DATE _____ DOCT <u>PROCEDURE</u> DOCN <u>EP-10</u> SYS _____ COMP <u>COMPLETED</u> ITM <u>4</u>
<u>4</u>	<u>09/21/00</u>	<u>R. G. West</u> Plant General Manager	<u>09/21/00</u>	
		<u>N/A</u> Designated Approver		
		<u>N/A</u> Designated Approver (Minor Correction)		

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1.0 PURPOSE

1.1 Discussion

- 1. This procedure provides instructions for tabulating off-site monitoring data and calculating doses of the Field Monitoring Team (FMT) personnel based on data resulting from off-site radiological monitoring.**
- 2. Field monitoring activities are directed by the Technical Support Center (TSC) initially and later by the Emergency Operations Facility (EOF), once it goes operational.**
- 3. This procedure is to be used by the FMT Comm/Coord in the TSC and the FMT Coord in the EOF.**
- 4. Field monitoring activities are governed by two procedures:**
 - A. This procedure provides instructions for direction and control of the FMTs, and**
 - B. HP-202, Environmental Monitoring During Emergencies, provides instructions for personnel on FMTs.**

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2.0 REFERENCES/RECORDS REQUIRED/COMMITMENT DOCUMENTS

NOTE

One or more of the following symbols may be used in this procedure:

§ Indicates a Regulatory commitment made by Technical Specifications, Condition of License, Audit, LER, Bulletin, etc., and shall NOT be revised without Facility Review Group review and Plant General Manager approval.

¶ Indicates a management directive, vendor recommendation, plant practice or other non-regulatory commitment that should NOT be revised without consultation with the plant staff.

2.1 References

- §₁ 1. St. Lucie Plant Technical Specifications Unit 1 and Unit 2 (Section 6.10.1)
- 2. St. Lucie Plant Radiological Emergency Plan (E-Plan)
- §₂ 3. Florida Power and Light Topical Quality Assurance Report (TQAR)
- 4. Florida Radiological Emergency Management Plan for Nuclear Power Plants
- 5. E-Plan Implementing Procedures (EPIP-00-13)
- 6. HP - 200 Series Procedures
- 7. St. Lucie Plant Emergency Response Directory (ERD)
- 8. QI-17-PSL-1, Quality Assurance Records
- 9. EPA-400-R-92-001, EPA Manual of Protection Action Guides and Protective Actions for Nuclear Incidents, October, 1991.
- 10. FPL Environmental Survey Team Map (10 mile EPZ)
- ¶₁ 11. HP Form 100, Emergency Response Personnel Dose Monitoring

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2.0 REFERENCES/RECORDS REQUIRED/COMMITMENT DOCUMENTS (continued)

2.2 Records Required

\S_1

1. Data collected and generated by this procedure should be recorded.
2. Recorded information shall be forwarded to the Emergency Preparedness Supervisor following the event, for review and archival in accordance with Technical Specification 6.10.1 and QI-17-PSL-1.

2.3 Commitment Documents

\S_2

1. Nuclear Energy Policy on Exposure Limits for Emergency Response Personnel, Revision to Policy Statement, Ltr. No. JNO-HP-94-056, 26 October, 1994.

3.0 RESPONSIBILITIES

3.1 Technical Support Center Health Physics Supervisor (TSCHPS)

1. The TSCHPS or his designee is responsible for the activation, staffing, and direction of the Field Monitoring Team(s).
2. Directions for the TSCHPS are found in the HP-200 Series procedures.

3.2 EOF Health Physics Manager

1. The EOF HP Manager is responsible for field monitoring activities when the EOF is operational and a turnover has occurred with the TSCHPS.
2. Directions for the EOF HP Manager are found in EPIP-06, Activation and Operation of the Emergency Operations Facility.

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3.0 RESPONSIBILITIES (continued)

3.3 Field Monitoring Team Communicator/Coordinator (FMT Comm/Coord)

1. In the TSC, the FMT Comm/Coord, with the concurrence of the TSCHPS, determines the monitoring points based upon meteorological conditions and population zones.
2. Communicates with the Field Monitoring Teams (FMTs) via the FPL radio system or telephone.
3. Informs the FMTs of all changes in pertinent meteorological and radiological data as well as in the status of the emergency and conditions at the plant.
4. Provides all survey results to the TSCHPS.
5. Tracks exposure levels of all members of the FMTs.

NOTE

When the EOF is operational, responsibility for determining sampling locations for the FMTs transfers to the EOF. The TSC retains the communication interface with the FMTs.

6. Provides all accumulated monitoring data to the EOF once it is manned.
7. Conducts a turnover with the FMT Coord in the EOF.

3.4 Field Monitoring Team Coordinator (FMT Coord)

1. In the EOF, FMT Coord, with the concurrence of the EOF Health Physics Manager, determines the monitoring points based upon meteorological conditions, population zones, and previous sampling locations.
2. Coordinates field monitoring activities with the Florida Bureau of Radiation Control.
3. Provides all survey results to the EOF HP Manager.

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4.0 DEFINITIONS

4.1 Florida Bureau of Radiation Control - a division of the State of Florida Department of Health, responsible for off-site radiological monitoring and operating the Mobile Emergency Radiological Laboratory (MERL).

4.2 Release (during any declared emergency) -

- 1. Any effluent monitor of (approximately) ten times or one decade above pre-transient values**

OR

- 2. Health Physics detecting airborne radioactivity levels in excess of 25 percent Derived Air Concentration (DAC) outside of plant buildings due to failure of equipment associated with the declared emergency.**

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5.0 INSTRUCTIONS

- 5.1** This section provides general information and instructions for members of the Emergency Response Organization (ERO).
- 5.2** Position specific checklists are included as attachments to this procedure.
- 5.3** Individuals specifically designated as members of the ERO are identified in the ERD.
- 5.4** When notified, ERO members are to report to their Emergency Response Facility (ERF) as quickly as possible if available and able to do so.
- 5.5** Reporting to Assigned Facility
- 1.** Upon arrival at the TSC:
 - A.** Sign in on the status board on the South (rear) wall of the facility in the space corresponding to your position (TSC HP Communicator - one of two).
 - B.** Obtain a "Player" badge and place your name (and position title, if necessary) on the badge with a dry erase marker or in any other non-permanent manner.
 - C.** Make your workstation/location operational.
 - D.** Notify your supervisor or the TSC Supervisor of your readiness status.
 - E.** Assist Security in establishing accountability by signing in on a form similar to Attachment 3A, TSC ERO Shift Staffing and Accountability Roster, to procedure EPIP-04, Activation and Operation of the Technical Support Center.

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5.0 INSTRUCTIONS (continued)

5.5 Reporting to Assigned Facility (continued)

2. Upon arrival at the EOF:

- A. Present Security with a form of picture identification.**
- B. Inform Security of your "fitness for duty" status.**
- C. Obtain and wear a position specific access badge provided by Security.**
 - 1. Place your name on the badge with a dry erase marker or in any other non-permanent manner.**
- D. Sign in on the Staffing Board located on the south wall of the "bullpen" (room 101).**
- E. Make your workstation/location operational.**
- F. Notify your supervisor of your readiness status.**

§₂ 5.6 Only controlled copies of nuclear safety-related procedures, drawings, and other available plant information shall be used. Non-controlled documents or drawings should be verified with a controlled copy prior to use.

5.7 During facility briefings, stop what you are doing, pay attention, and contribute, as requested.

5.8 Upon termination of the event:

- 1. Return workstation/location to a normal state and assist in restoring the facility to a ready condition.**
- 2. Collect all significant information and documentation, such as notes and completed data sheets (not bound in the procedure notebooks), and forward this material to the supervisor/manager of the facility.**
- 3. The emergency facility supervisor/manager will forward this paperwork to the Emergency Preparedness Supervisor.**

END OF SECTION 5.0

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**ATTACHMENT 1
(TSC) FMT COORD/COMM CHECKLIST
(Page 1 of 4)**

NOTE
When necessary or appropriate, steps of this checklist may be performed out of sequence.

- | | | |
|-----------|---|-----------------------|
| A. | <u>ACTIVATION</u> | <u>INITIAL</u> |
| | 1. Refer to section 5.0 of this procedure (included in position package) and review the general instructions. | _____ |
| | 2. Verify operability of HP radio, refer to Attachment 3, Communications Guidelines, to this procedure. | _____ |

- B. OPERATION**
1. Review Attachment 4, Field Monitoring Guidelines, to this procedure.

NOTE
Field Monitoring Teams may be activated at the discretion of the EC, but usually are dispatched based on emergency classification as follows:

Alert - dispatch one team to survey on-site/near-site

Site Area Emergency - dispatch three teams, one for on-site/near-site surveys and two teams for off-site surveys

General Emergency - same as for Site Area Emergency

- | | | |
|----|--|-------|
| 2. | Determine status of FMTs from the TSCHP. | _____ |
| 3. | Review areas to be surveyed with the TSCHPS with the aid of Attachment 5, Preselected On-site Monitoring Points, and Attachment 6, Preselected Off-site Monitoring Points. | _____ |
| 4. | Establish radio contact with FMTs. | _____ |

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**ATTACHMENT 1
(TSC) FMT COORD/COMM CHECKLIST
(Page 2 of 4)**

B. OPERATION (continued)

INITIAL

NOTE

When the EOF is operational, responsibility for determining sampling locations for the FMTs transfers to the EOF. The TSC retains responsibility for:

1. Communications interface with the FMTs.
2. Exposure controls for FMTs.
3. Updating the FMTs on current conditions.

5. Steps to occur continually while this activity is underway:

- a. Communicate with the FMTs via the HP Off-site Channel, refer to Attachment 3, Communications Guidelines.
- b. Provide FMTs with sample locations.
- c. Provide FMTs with sampling instructions (e.g., open and close window readings, air sample, etc.).
- d. Record field survey data, use Attachment 7, Field Monitoring Teams Survey Results, to this procedure, refer to Attachment 7A, Field Monitoring Teams Survey Results - Instructions.
 1. Using carbon paper, make a copy as the data is entered into the form. Retain the original, provide the copy to the TSC Administrative Staff to update the status board.

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 12 of 37
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**ATTACHMENT 1
(TSC) FMT COORD/COMM CHECKLIST
(Page 3 of 4)**

B. OPERATION (continued)

INITIAL

5. (continued)

NOTE

¶1. The TSCHPS shall control the exposure for the FMT members to within FPL Administrative Exposure Limits of:

A. 5 rem Total Effective Dose Equivalent (TEDE)

OR

B. 50 rem committed Dose Equivalent (CDE) to the thyroid from the inhalation of radioiodine.

¶1.2. FMT member exposures will be controlled by monitoring their Deep Dose Equivalent (DDE) and they shall be recalled from further exposure before exceeding 5 rem DDE.

e. Track exposure levels of FMT members, use Attachment 8, Dose and Survey Data Worksheet, to this procedure, refer to Attachment 8A, Dose and Survey Data Worksheet - Instructions.

f. Inform the FMTs of all changes in pertinent meteorological and radiological data as well as in the status of the emergency and conditions at the plant.

g. Provide all survey results and FMT exposure levels to the TSCHPS.

1. To estimate dose, dose rate, or concentration, refer to Attachment 9, Estimating Dose, Dose Rate, or Concentration At Other Distances.

/R4

6. Provide all accumulated monitoring data to the EOF. _____

7. Conduct a turnover with the FMT Coord in the EOF. _____

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ATTACHMENT 1
(TSC) FMT COORD/COMM CHECKLIST
 (Page 4 of 4)

C. CLOSEOUT

INITIAL

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Terminated all field sampling. 2. Recalled all FMTs to the site. 3. Instructed FMTs to return all equipment to footlockers at the Site Assembly Station. 4. Closed out the log. 5. Provided all completed paperwork (not bound in the position notebook) to the TSCHPS. 6. Returned position notebook to storage cabinet. | <hr/>
<hr/>
<hr/>
<hr/>
<hr/>
<hr/> |
|---|--|

/R4

END OF ATTACHMENT 1

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 14 of 37
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**ATTACHMENT 2
(EOF) FMT COORD CHECKLIST
(Page 1 of 3)**

<p>NOTE When necessary or appropriate, steps of this checklist may be performed out of sequence.</p>

- | A. <u>ACTIVATION</u> | <u>INITIAL</u> |
|---|-----------------------|
| 1. Refer to Section 5.0 of this procedure (included in position package) and review the general instructions. | _____ |
| 2. Establish communications with the FMT Coord/Comm in the TSC. | _____ |
| 3. Conduct turnover with the FMT Coord/Comm in the TSC. | _____ |
|
B. <u>OPERATION</u> | |
| 1. Review Attachment 4, Field Monitoring Guidelines, to this procedure. | |
| 2. Review FMT results received from the TSC with the EOF HP Manager. | _____ |
| 3. Take responsibility for selection of sampling locations for FMTs. | _____ |
| 4. Review areas to be surveyed with the EOF HP Manager with the aid of Attachment 5, Preselected On-site Monitoring Points, and Attachment 6, Preselected Off-site Monitoring Points. | _____ |

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 15 of 37
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**ATTACHMENT 2
(EOF) FMT COORD CHECKLIST**

(Page 2 of 3)

B. OPERATION (continued)

INITIAL

5. Steps to occur continually while this activity is underway:

NOTE

The FMT Coord/Comm in the TSC maintains responsibility for:

1. Communications interface with the FMTs.
2. Exposure controls for FMTs.
3. Updating the FMT on current conditions.

- a. Coordinate field monitoring activities with the TSC.
- b. Provide FMTs with sampling instructions (e.g., open and closed window readings, air samples, etc.).
- c. Coordinate field monitoring activities with the Florida Bureau of Radiation Control.
- d. Record field survey data, use Attachment 7, Field Monitoring Teams Survey Results, refer to Attachment 7A, Field Monitoring Teams Survey Results - Instructions.
 1. Using carbon paper, make a copy as the data is entered into the form. Retain the original, provide the copy to the EOF Rad Status Board Keeper to update the status board.
- e. Provide all survey results to the EOF HP Manager.
 1. To estimate dose, dose rate or concentration, refer to Attachment 9, Estimating Dose, Dose Rate or Concentration At Other Distances.
- f. Post field monitoring locations and results on the EPZ map.

/R4

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 16 of 37
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**ATTACHMENT 2
(EOF) FMT COORD CHECKLIST
(Page 3 of 3)**

C. CLOSEOUT

INITIAL

- | | |
|---|-------|
| 1. Terminated all field sampling. | _____ |
| 2. Provided all completed paperwork (not bound in the position notebook) to the EOF HP Manager. | _____ |
| 3. Returned position notebook to the Recovery Manager's office. | _____ |

/R4

END OF ATTACHMENT 2

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 17 of 37
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ATTACHMENT 3
COMMUNICATIONS GUIDELINES
(Page 1 of 3)

NOTE

If communications are associated with drill or exercise, the statement "This is a drill" should precede and follow the actual message.

A. HP OFF-SITE RADIO CHANNEL

A unique 900 MHz channel for communications with the off-site FMTs. The table radio, labeled "Off-site Radio" can be operated either by depressing the "transmit" button on the console or by removing the handset and depressing the "push-to-talk" bar in the handset. The "xmit" light is lit during transmission. (Preference should be given to using the handset.)

B. GENERAL GUIDELINES

1. Always speak clearly, firmly, and with normal tone when using any communication system.
2. The sender and receiver shall be clearly identified.
3. Message text:
 - a. Communication must be free of ambiguity. Slang terms shall not be used. Avoid the use of words that sound alike; for example, avoid increase and decrease, use raise and lower instead.
 - b. Communications must be specific. Use noun names for plant equipment, not acronyms; for example use low pressure safety injection pump instead of LPSI.

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ATTACHMENT 3
COMMUNICATIONS GUIDELINES

(Page 2 of 3)

B. GENERAL GUIDELINES (continued)

3. (continued)

- c. The phonetic alphabet should be used to identify specific train, bus, channel, or equipment designations, not just letter identifier; for example, refer to the 1Alpha heater drain pump, not the 1A heater drain pump. The following is the phonetic alphabet to be used:

A Alpha	J Juliet	S Sierra
B Bravo	K Kilo	T Tango
C Charlie	L Lima	U Uniform
D Delta	M Mike	V Victor
E Epsilon	N November	W Whiskey
F Foxtrot	O Oscar	X X-Ray
G Golf	P Papa	Y Yankee
H Hotel	Q Quebec	Z Zulu
I India	R Romeo	

- d. The phonetic alphabet should not be used for stringed letter references, acceptable acronyms, or location symbols; for example, AB bus, AC or DC, TSC, respectively.
4. Acknowledgement and confirmation (3-way communication) - messages shall be comprised of proper transmission, acknowledgement, and confirmation.
- a. The message is properly transmitted from the originator to the receiver.
- b. The message receiver shall acknowledge the communication by giving functional repeat-back to the message originator. The repeat-back can be provided by either paraphrasing or explaining the message in one's own words, or by verbatim repeat-back. In all cases, verbatim repeat-back shall be used for equipment identifiers.

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ATTACHMENT 3
COMMUNICATIONS GUIDELINES

(Page 3 of 3)

B. GENERAL GUIDELINES (continued)

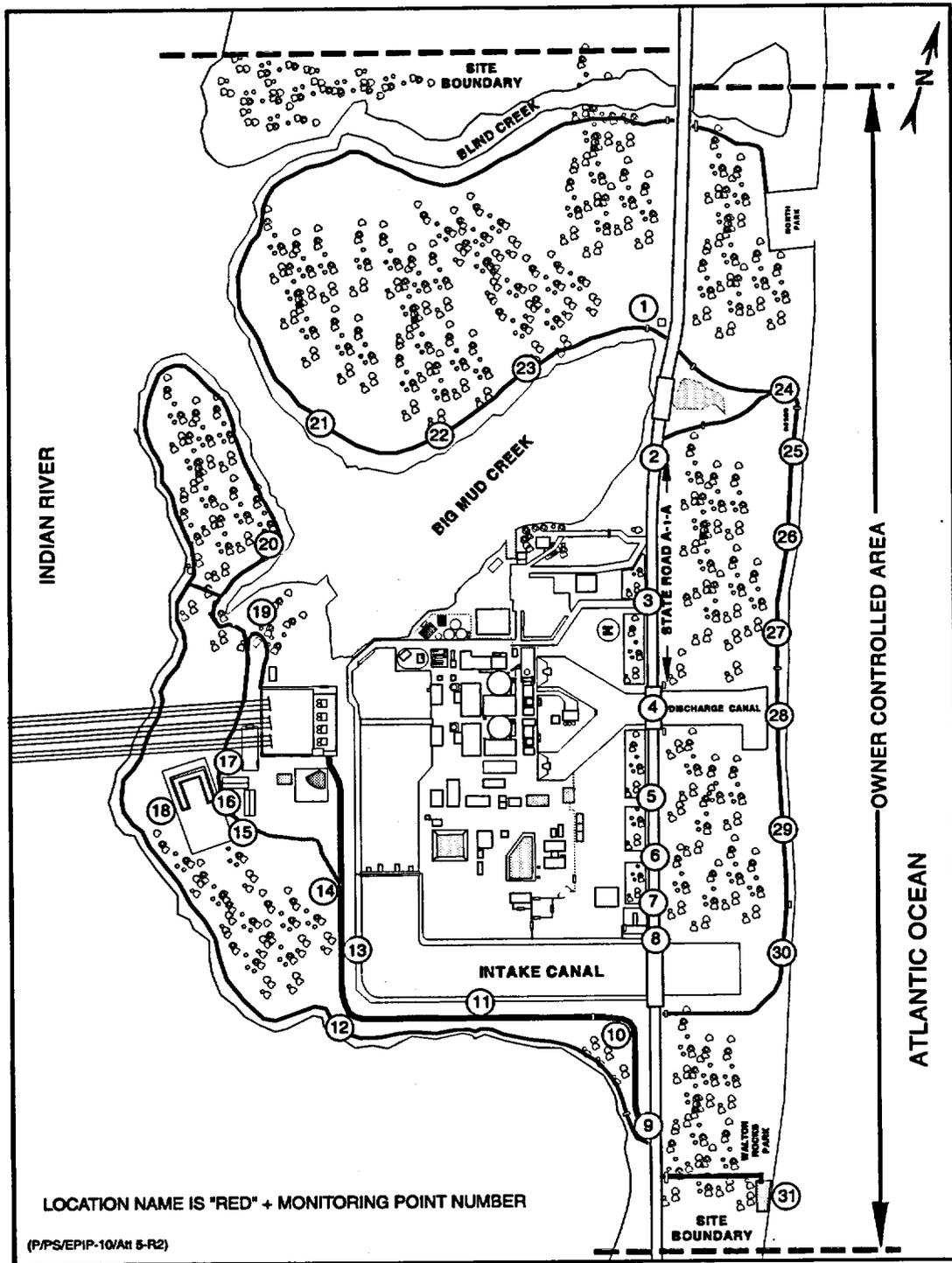
4. (continued)
 - c. If the message receiver does not understand the message, he/she shall ask for the message to be repeated.
 - d. If an incorrect repeat-back is given, the message originator shall immediately correct the miscommunication with a statement such as, "WRONG", followed by restating the correct message.
 - e. The message originator shall confirm the acknowledgement (repeat-back) with a statement such as, "That is correct".
5. Use of the Call Sign is not necessary when communicating with the HP Off-site Channel radio (station ID occurs every 30 minutes automatically).
6. Prior to transmission, ensure that information has been verified and approved by the appropriate authority, as necessary.
7. Ensure that any incoming pertinent information is provided to the TSCHPS.
8. Maintain documentation of any significant information provided or received.

END OF ATTACHMENT 3

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 20 of 37
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ATTACHMENT 4 <u>FIELD MONITORING GUIDELINES</u> (Page 1 of 1)		
<u>Purpose</u>		
<p>The purpose of field monitoring is to detect and characterize an airborne plume of radioactive material. This could be the only source of information for an unmonitored release.</p>		
<u>Strategy</u>		
<ol style="list-style-type: none"> 1. Disperse teams as follows: <ul style="list-style-type: none"> - Owner Controlled Area, one team - Left and right of the plume centerline at some distance (e.g., 2-5 miles), two teams 2. Determine if a release is in progress (i.e., has any FMT reported survey meter readings greater than background). 3. Estimate plume location by using wind speed, wind direction, and time of release. 4. If doses or projections are not limiting, attempt to characterize plume width and location of plume centerline (= highest reading on a transverse path across the plume). 5. To assess radiological composition, obtain and analyze an air sample to establish an iodine to noble gas ratio. 6. Attempt to determine actual plume boundaries, use predesignated monitoring locations as reference points, to ensure appropriate Protective Actions are in place (or recommended) for areas impacted by the plume. 7. Collaborate with State teams to increase data collected and maximize resources (cover as large an area as possible or needed). 8. Results of field monitoring provide feedback to dose calculations/assessment; SURVEY DOSE RATES SHOULD NEVER EXCEED PROJECTED DOSE RATES. 		
END OF ATTACHMENT 4		

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ATTACHMENT 5
PRESELECTED ON-SITE MONITORING POINTS
(Page 1 of 4)



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**ATTACHMENT 5
PRESELECTED ON-SITE MONITORING POINTS**

(Page 2 of 4)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-1	Met Tower, Site Assembly Sta.	0.5	A
Red-2	Gate A & Rte A1A	0.3	B
Red-3	Gate B & Rte A1A	0.25	B
Red-4	Discharge Canal Bridge @ Rte A1A	0.2	D
Red-5	Gate C & Rte A1A	0.25	E
Red-6	Gate D & Rte A1A	0.3	F
Red-7	Gate E & Rte A1A	0.33	F
Red-8	Gate F & Rte A1A (north side of intake canal)	0.45	G
Red-9	Gate G & Rte A1A	0.6	G
Red-10	Ball Park Road (first north to westbound corner)	0.5	G
Red-11	Ball Park Road (@ mile marker on berm)	0.46	G, H
Red-12	Ball Park Road (@ corner turning north)	0.5	H, J
Red-13	Ball Park Road (post in berm, midway between monitoring points Red 12 & 14)	0.38	J

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ATTACHMENT 5
PRESELECTED ON-SITE MONITORING POINTS

(Page 3 of 4)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-14	Ball Park Road (@ left turn towards Gun Range/ Picnic Pavilion)	0.3	K
Red-15	Gate W-25 (east side of Gun Range)	0.4	L
Red-16	Picnic Pavilion	0.33	L
Red-17	Intersection of Boat Ramp turnoff & road to Fire Training Area	0.32	L
Red-18	Gate W-26 (west side of Gun Range)	0.5	L
Red-19	Boat Ramp	0.36	M, N
Red-20	Fitness Trail (@ .5 mi. sign)	0.5	N
Red-21	Road, north side of Big Mud Creek (opposite Boat Ramp)	0.35	P
Red-22	Road, north side of Big Mud Creek (opposite City Water Storage Tanks)	0.30	Q
Red-23	Road, north side of Big Mud Creek (opposite Barge Slip)	0.4	R
Red-24	Turtle Beach Parking Lot	0.62	B
Red-25	Large foot bridge	0.54	B, C
Red-26	Small foot bridge	0.51	C

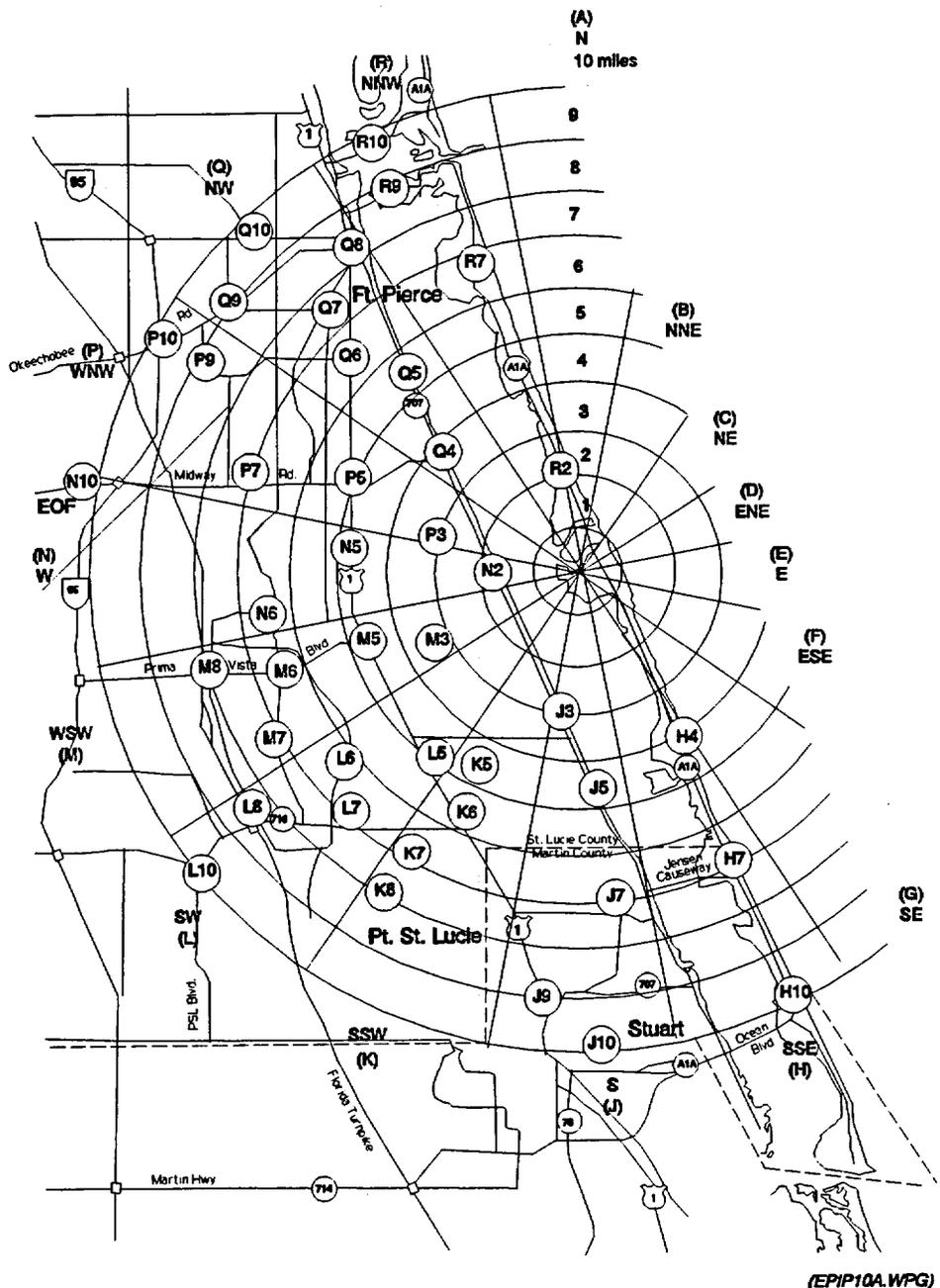
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ATTACHMENT 5
PRESELECTED ON-SITE MONITORING POINTS
 (Page 4 of 4)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-27	Concrete power pad	0.5	C
Red-28	Discharge Canal Header	0.5	D
Red-29	Halfway between Discharge & Intake Canal Headers	0.52	E
Red-30	Intake Canal Header	0.6	F
Red-31	Walton Beach entrance road (@ fork in the road)	0.8	G

END OF ATTACHMENT 5

ATTACHMENT 6
PRESELECTED OFF-SITE MONITORING POINTS
(Page 1 of 5)



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ATTACHMENT 6
PRESELECTED OFF-SITE MONITORING POINTS

(Page 2 of 5)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
R2	S.R. A1A, NNW of plant site (Little Mud Creek Bridge)	2.3	R
R7	Intersection of S.R. A1A and Clipper Blvd. (Entrance to Ocean Village)	6.7	R
R9	S.R. A1A, NNW of plant site (West of Fire Dept. at Siren)	8.6	R
R10	East side of North Bridge (S.R. A1A)	9.6	R
Q4	Intersection of Indian River Dr. (S.R. 707) and White Rd., East of White City and South of Fort Pierce	3.7	Q
Q5	Intersection of Indian River Dr. (S.R. 707) and Rio Vista Dr.	5.4	Q
Q6	Intersection of U.S. 1 and Edwards Rd. (S.R. 611.B), South side of Ft. Pierce near railroad crossing	6.4	Q
Q7	Intersection of Oleander Blvd. (S.R. 605) and Virginia Ave.	7.4	Q
Q8	Intersection of U.S. 1 and Delaware Ave.	8.1	Q
Q9	Intersection of Okeechobee Rd. (S.R. 70) and Hartman Rd. (S. 41st St. near siren)	9.1	Q
Q10	Intersection of Orange Ave. (S.R. 68) and Angle Rd.	9.6	Q

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 27 of 37
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ATTACHMENT 6
PRESELECTED OFF-SITE MONITORING POINTS

(Page 3 of 5)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
P3	Intersection of Bartow St. and Yucca Dr.	3.2	P
P5	Intersection of U.S. 1 and Midway Rd. (S.R. 712) White City	5.2	P
P7	Intersection of Midway Rd. (S.R. 712) and Christiansen Rd. (at siren)	7.1	P
P9	Intersection of McNeil Rd. and Edwards Rd. (611B)	8.7	P
P10	Intersection of Okeechobee Rd. (S.R. 70) and I-95	9.7	P
N2	S.R. 707 West of plant site (at siren)	2.0	N
N5	Intersection of U.S. 1 and Saeger Rd. (south of White City)	4.8	N
N6	Intersection of St. James Dr. and Airoso Blvd.	6.4	N
N10	St. Lucie's EOF, Intersection of S.R. 712 and I-95	10.2	N
M3	East end of N. Mediterranean Blvd.	3.4	M
M5	Intersection of U.S. 1 and Prima Vista Blvd., Port St. Lucie	4.8	M
M6	Intersection of Prima Vista Blvd. and Airoso Blvd.	6.5	M

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 28 of 37
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**ATTACHMENT 6
PRESELECTED OFF-SITE MONITORING POINTS**

(Page 4 of 5)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
M7	Intersection of Airoso Blvd. and Whitmore Dr.	7.3	M
M8	Intersection of Prima Vista Blvd. and Bayshore Blvd.	7.8	M
L5	Intersection of U.S. 1 and Walton Rd., Port St. Lucie	4.8	L
L6	Intersection of Floresta Dr. and Thornhill Dr.	6.4	L
L7	Intersection of Whitmore Drive and Port St. Lucie Blvd.	7.2	L
L8	Intersection of Port St. Lucie Blvd. and Fla. Turnpike	8.4	L
L10	Intersection of Port St. Lucie Blvd. and Cairo Ave.	10	L
K5	Intersection of Lennard Rd. and Blossom Rd.	4.7	K
K6	Intersection of U.S. 1 and Port St. Lucie Blvd., Port St. Lucie	5.7	K
K7	Intersection of Morningside Blvd. and Westmoreland Blvd.	7.1	K
K8	Intersection of Morningside Blvd. and River Vista Dr.	8.0	K
J3	Intersection of Walton Rd. and Indian River Dr. (S.R. 707)	3.4	J

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ATTACHMENT 6
PRESELECTED OFF-SITE MONITORING POINTS

(Page 5 of 5)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
J5	Intersection of Indian River Dr. (S.R. 707) and Mockingbird Hill Rd. (near siren)	4.7	J
J7	Intersection of Jensen Beach Blvd. (S.R. 707A) and Savannah Rd. (S.R. 723)	7.0	J
J9	Intersection of Wright Blvd. (S.R. 723) and U.S. 1	9.2	J
J10	Martin Memorial Hospital	10.0	J
H4	S.R. A1A, south of plant (at siren) North to entrance to Nettle's Island	4.0	H
H7	Intersection of S.R. A1A and the Jensen Beach turnoff (A1A Alt.) (at siren)	6.9	H
H10	Intersection of S.R. A1A and Ocean Blvd. (Elliott Museum)	9.8	H

END OF ATTACHMENT 6

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 31 of 37
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ATTACHMENT 7A
FIELD MONITORING TEAMS SURVEY RESULTS - INSTRUCTIONS

(Page 1 of 2)

The following instructions are provided for the completion of Attachment 7. The columns in Attachment 7 have been numbered from 1-9. An explanation of the data expected in each column is provided below. Prior to entering data into the table, place the date at the top of the page. Use multiple forms as necessary and number sequentially. Print your name at the bottom of each form and initial.

1. **Time of Survey** - This is the time that survey data was gathered in the field, time should be based on a 24 hour clock (e.g., 2 a.m. = 0200 hours and 7 p.m. = 1900 hours).
2. **Wind Direction** - This is the direction FROM which the wind is blowing, this information is posted on and should be obtained from the dose assessment status board.
3. **Affected Sectors** - The affected sectors are determined by the wind direction, 3 (or possibly 4) sectors are affected, this information is posted on and should be obtained from the dose assessment status board.
4. **Team** - There are 3 FPL FMTs, usually designated R = red, O = orange, and B = blue, the R team is usually the first dispatched and conducts surveys on-site/near-site, the other two teams go off-site.
5. **Miles from Plant** - This is determined by the sampling location.
 - A. **On-site/near-site Team (=Red Team)** - Monitoring locations within the Owner Controlled Area are given in Attachment 5, Preselected On-site Monitoring Points. Each location is designated as "Red - monitoring point number" (e.g., Red-25). The distance from the plant as well as a description of the location of each monitoring point is provided as part of the attachment.
 - B. **Off-site Teams (=Orange and Blue Teams)** - Monitoring locations within the 10 mile EPZ, outside the Owner Controlled Area, are given in Attachment 6, Preselected Off-site Monitoring Points. If a preselected monitoring point is used, the designation gives both sector and distance (e.g., point R9 is approximately 9 miles from the plant in Sector R). The preselected monitoring points can also be used to estimate distances.

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ATTACHMENT 7A
FIELD MONITORING TEAMS SURVEY RESULTS - INSTRUCTIONS

(Page 2 of 2)

6. **Survey Location** - If a preselected monitoring location is used, a location designation is provided for each point in both Attachments 5 and 6. If other points are used, the FMT should provide a clear location (e.g., distance from and name of closest intersection or landmark).

7. **Survey Results** -
 - a. **Plume DDE (mrem/hr)** - This is a measure of external exposure, measured by a survey meter (dose rate meter). The recorded value is the closed window reading in millirem per hour.

 - b. **Thyroid CDE (mrem/hr)** - This is a measure of thyroid dose rate due to inhalation of radioiodines. The thyroid dose rate is calculated using Attachment 7B, Estimate of Thyroid Dose Rate, to this procedure. The recorded value is in millirem per hour.

8. **Survey Greater Than Projected (Y/N)** - Field monitoring results provide important feedback on the accuracy of dose projections. Field readings should be compared to projected doses and dose rates and reviewed with the TSCHPS or EOF HP Manager, as appropriate. Example: compare the measured dose rate at 5 miles at 1045 with the dose rate at 5 miles from the 0830 2 hour projection, field readings should never exceed projections.

9. **Comments** - Record any significant extra or useful information.

END OF ATTACHMENT 7A

REVISION NO.: 4	PROCEDURE TITLE: OFF-SITE RADIOLOGICAL MONITORING	PAGE: 33 of 37
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**ATTACHMENT 7B
ESTIMATE OF THYROID DOSE RATE**

(Page 1 of 1)

Field Monitoring Teams will take direct radiation readings and air samples and analyze air samples for radioiodine (I-131) concentration.

1. Radioiodine (I-131) analysis should normally be performed using portable analyzers with scintillation detectors.
2. Thyroid Dose (CDE) Rate, from the inhalation of iodines, is estimated using the following equation:

$$\underline{\quad A \quad} \text{ (mrem/hr)} = 1.3 \text{ E}+9 \times \underline{\quad B \quad} \times \underline{\quad C \quad} \text{ (uCi/ml)}$$

Where A = Thyroid Dose (CDE) Rate

B = Factor from table below

C = Iodine 131 concentration measured in the field (from HP 202.1, Environmental Airborne Activity Calculation Form.)

Time is Hours since Reactor Trip

<u>Time (hour)</u>	<u>Factor</u>	<u>Time (hour)</u>	<u>Factor</u>
0	1.45	9	1.32
1	1.43	10	1.30
2	1.41	11	1.29
3	1.40	12	1.28
4	1.38	13	1.28
5	1.37	14	1.27
6	1.35	15	1.26
7	1.34	24	1.19
8	1.33	36	1.13

3. Plug in values for B and C to calculate the Thyroid Dose (CDE) Rate.

$$\underline{\hspace{2cm}} \text{ (mrem/hr)} = 1.3 \text{ E}+9 \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \text{ (uCi/ml)}$$

END OF ATTACHMENT 7B

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ATTACHMENT 8
DOSE AND SURVEY DATA WORKSHEET
(Page 1 of 1)

NOTE
Recall a Field Monitoring Team from further exposure before either member exceeds 5,000 mrem (DDE).

Member A: _____

Team: _____ Member B: _____ Date: ____/____/____

1 Survey Location	2 Sector	3 Time of Survey	4 Measured Gamma Dose Rate (mrem/hr)	5 Measured Iodine -131 (µCi/ml)	6 Time in Plume (minutes)	7 DRD Reading (mrem)	8 Thyroid Dose (mrem)
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		
			OPEN		A		
			CLOSED		B		

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ATTACHMENT 8A
DOSE AND SURVEY DATA WORKSHEET - INSTRUCTIONS

(Page 1 of 2)

The following instructions are provided for the completion of Attachment 8. The columns in Attachment 8 have been numbered from 1-7. An explanation of the data expected in each column is provided below. One data sheet is to be used for each FMT (red, orange, blue). The team and the names of the two members of each team are to be filled-in at the top of the form. Prior to entering data into the table, place the date at the top of the page. Use multiple forms for each team as necessary and number sequentially. Print your name at the bottom of each form and initial.

1. Survey Location - If a preselected monitoring location is used, a location designation is provided for each point in both Attachment 5, Preselected On-site Monitoring Points, and Attachment 6, Preselected Off-site Monitoring Points. If other points are used, the FMT should provide a clear location (e.g., distance from and name of closest intersection or landmark).
2. Sector - The 10 mile Emergency Planning Zone (EPZ) around St. Lucie Plant is divided into 16 sectors which are labeled A-R (I and O are not used). Identify the sector in which the field data was collected. Refer to the FPL Environmental Survey Map (10 mile EPZ) posted in the TSC. The 10 mile EPZ is also shown on Page 1 of Attachment 6.
3. Time of Survey - This is the time that survey data was gathered in the field, time should be based on a 24 hour clock (e.g., 2 a.m. = 0200 hours and 7 p.m. = 1900 hours).
4. Measured Gamma Dose Rate (mrem/hr) - This is direct radiation measure of dose rate from a survey meter, recorded in millirem per hour. Both an open and closed window reading should be recorded. The open window reading allows for an estimate of beta dose.
5. Measured Iodine - 131 (uCi/ml) - This is an air sample in which the concentration of Iodine - 131 is measured in a certain volume, recorded in microcuries per milliliter.

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ATTACHMENT 8A
DOSE AND SURVEY DATA WORKSHEET - INSTRUCTIONS

(Page 2 of 2)

6. Time in Plume (Minutes) - This is the time the FMT members actually spent in the plume. It is recorded as a separate measure for each team member. The value is recorded in minutes.

7. DRD Reading (mrem) - This is a Direct Reading Dosimeter (DRD) reading that should be recorded each time the FMT member exits the plume. The DRD records a cumulative dose. The value is recorded in millirem. Electronic Personal Dosimeters (EPDs) may also be used with the DRDs.

8. Thyroid Dose (mrem) - Thyroid dose is determined by multiplying the dose rate calculated in Attachment 7B, Estimate of Thyroid Dose Rate, times the time in the plume (column 6). The value is recorded in millirem.

/R4

END OF ATTACHMENT 8A

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ATTACHMENT 9
ESTIMATING DOSE, DOSE RATE OR CONCENTRATION AT OTHER
DISTANCES
 (Page 1 of 1)

CAUTION
 As with any approximation, caution and judgement should be applied when using an estimated value.

1. To estimate dose, dose rate or concentration at a distance other than where surveys were taken, use the following equation:

$$E = M * (MD/ED)^Z$$

Where E = estimated dose, dose rate or concentration

ED = distance at which an estimated dose, dose rate or concentration is desired

M = actual measured dose, dose rate or concentration

MD = distance at which the actual measured dose, dose rate or concentration was taken

Z = exponent based on stability class

<u>Stability Class</u>	<u>Z Value</u>
A, B	2.0
C, D	1.5
D, E, F	1.0

(based on EPA-400, Chapter 5)

/R4

END OF ATTACHMENT 9



ST. LUCIE PLANT HEALTH PHYSICS PROCEDURE

SAFETY RELATED

Procedure No.
HP-202

Current Rev. No.
27

Effective Date:
09/27/00

Title:

ENVIRONMENTAL MONITORING DURING EMERGENCIES

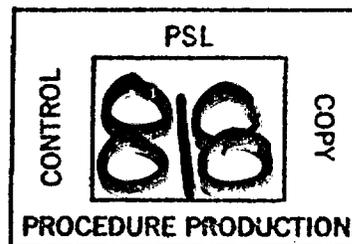
Responsible Department: **HEALTH PHYSICS**

Revision Summary

Revision 27 - Corrected on-site monitoring locations 15 & 16 on Figure in Appendix B. (J. R. Walker, 09/21/00)

Revision 26 - Changed NCPM to GCPM. (Don Reisinger, 01/13/99)

Revision 25 - Added Red Team survey points. (Don Reisinger, 09/16/99)



Revision	FRG Review Date	Approved By	Approval Date	S__OPS
<u>0</u>	<u>07/07/81</u>	<u>C. M. Wethy</u> Plant General Manager	<u>07/13/81</u>	DATE _____ DOCT <u>PROCEDURE</u> DOCN <u>HP-202</u> SYS _____ COMP <u>COMPLETED</u> ITM <u>27</u>
<u>27</u>	<u>09/21/00</u>	<u>R. G. West</u> Plant General Manager	<u>09/21/00</u>	
		<u>N/A</u> Designated Approver		

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

1.0 TITLE:

ENVIRONMENTAL MONITORING DURING EMERGENCIES

2.0 REVIEW AND APPROVAL:

See cover page

3.0 PURPOSE:

To provide a method for the determination of radioiodine concentrations and dose rates in the environment due to releases of radioactive materials from the plant under accident conditions.

3.1 The off-site Field Monitoring Teams monitor releases in the Emergency Planning Zone (EPZ) from the plant out to a distance of approximately 10 miles.

3.2 The on-site Field Monitoring Team monitors releases outside the plant PROTECTED AREA but within the OWNER-CONTROLLED AREA.

4.0 LIMITS AND PRECAUTIONS:

4.1 Off-site monitoring within the Plume Exposure Pathway EPZ shall be performed by St. Lucie Field Monitoring Teams.

4.2 Field Monitoring Teams shall be under the direction of the TSC HP Supervisor (TSCCHPS) in the Technical Support Center (TSC).

4.3 One member of each Field Monitoring Team shall be a qualified Health Physics Technician (HPT).

4.4 All Field Monitoring Team members shall wear personal dosimetry while doing monitoring.

4.5 Field Monitoring Teams should obtain FPL vehicles equipped with a cigarette lighter (power supply for portable radio) to use for transportation. Vehicles should have their engines on (running) and radios on during field activities.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

4.0 LIMITS AND PRECAUTIONS: (continued)

- 4.6 The Field Monitoring Teams shall drive out of the release plume to count samples.
- 4.7 Respiratory protection equipment is available for each Field Monitoring Team and shall be used when the team is in the release plume.
- 4.8 The FPL Field Monitoring Teams shall communicate sample analysis data only to the plant unless otherwise directed by the TSCHPS.
- 4.9 The responsibility of the on-site Field Monitoring Team is to monitor releases on the FPL owned property. The Site Assembly Station is a principle location to monitor and other locations as directed by the TSCHPS.
- 4.10 The TSCHPS shall deploy the Field Monitoring Teams according to the following emergency classifications:

ALERT	Onsite	1 Team
SITE AREA/ GENERAL EMERGENCY	Onsite Offsite	1 Team (if not previously deployed) 2 Teams

- 4.11 Ensure all personnel using/handling the radios are familiar with the warnings/precautions contained in Appendix A to this procedure.

5.0 RELATED SYSTEMS STATUS:

None

6.0 REFERENCES:

- 6.1 St. Lucie Plant Radiological Emergency Plan (E-Plan)
- 6.2 HP-200, Health Physics Emergency Organization
- 6.3 EPIP-10, Off-site Radiological Monitoring
- 6.4 FP&L Environmental Survey Team Map (10 mile EPZ)

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

7.0 RECORDS REQUIRED:

7.1 Field Monitoring Team Log Book

7.2 Table 1, Field Monitoring Team Check List

7.3 The following document when completed shall be maintained in the plant files in accordance with QI-17-PSL-1, "Quality Assurance Records."

1. Form HP 202.1, Environmental Airborne Activity Calculation Form

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

8.0 INSTRUCTIONS:

- 8.1** The TSCHPS directs the staffing and deployment of the Field Monitoring Teams. Upon the declaration of an ALERT level emergency the on-site out-of-plant Field Monitoring Team shall be activated and the off-site Field Monitoring Teams may be activated at the discretion of the Emergency Coordinator. If the classification is a SITE AREA or GENERAL EMERGENCY the on-site out-of-plant Field Monitoring Team and the off-site Field Monitoring Teams shall be activated.

NOTE

1. Verify respirator qualification of all field team members - consult the Radiation Exposure Summary Report.
2. Verify vehicle has cigarette lighter.
3. SAS keys are at the North Security Building, if needed.

- 8.2** The HP Supervisor in the Operational Support Center (HPOSC) is responsible for the deployment of the Field Monitoring Teams and ensuring each HPT is:

1. Paired with a driver
2. Provided a vehicle
3. Red Team only
 - Given a hand-held radio
 - Given a pair of boltcutters (from the OSC HP Emergency kit)

NOTE

The first team to complete Table 1, Field Monitoring Team Checklist, becomes the Red Team and is the first dispatched to the field.

- 8.3** Upon arrival at the Site Assembly Station (SAS) the Field Monitoring Teams call the Technical Support Center (TSC). The TSCHPS designates the on-site Field Monitoring Team as the Red Team, the off-site Field Monitoring Team as the Blue Team and the other off-site Field Monitoring Team as the Orange Team.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

8.0 INSTRUCTIONS: (continued)

- 8.4 Each Field Monitoring Team shall inventory their respective Emergency Kit and complete the Field Monitoring Team Checklist (see Table 1).
- 8.5 Equipment operability shall be verified in accordance with Appendix A, Operability Instructions.

NOTE

Supplemental or replacement equipment and/or instruments are available in the spare Emergency Kit.

- 8.6 Following completion of inventories and equipment checks, the Field Monitoring Teams will be given instructions on required monitoring points. Monitoring points are designated using Emergency Planning Zone (EPZ) map coordinates, highway and road numbers/names, or the points shown in Appendix B, Preselected On-site Monitoring Points and/or Appendix C, Preselected Off-site Monitoring Points under the direction of the TSCHPS.
- 8.7 Field Monitoring Teams will proceed to the designated monitoring points.

NOTE

If a release is in progress, Field Monitoring Teams should monitor dose rates and count rates during transit and report any indications of a plume to the TSC. Ensure count rate meter is operating in cab of truck during transit.

- 8.8 Prior to arriving at the sampling location, place a AgX cartridge and particulate filter in the sample head. Mark the upstream face of both filters.
- 8.9 Upon arrival at the sampling location, the Field Monitoring Team should perform a dose rate survey in following manner. Record the time arrived at location in the blank labeled Time on Form HP 202.1, Environmental Airborne Activity Calculation Form found in this procedure.
1. Holding the survey instrument at head height with the detector upward, and beta window open, obtain a radiation reading of the overhead plume. The beta window should be open to assist in detecting low levels in the plume. If a positive indication is observed, close the beta window and observe the gamma dose rate. Enter the dose rates on worksheet HP 202.1, line 3.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

8.0 INSTRUCTIONS: (continued)

8.9 (continued)

2. Report the dose rates to the plant.
3. With the vehicle engine running, connect the air sampler power leads to the vehicle's battery, taking care to connect the positive and negative cables to the positive and negative battery terminals, respectively.
4. Start the stop watch and note the air flow rate. Run the air samples long enough to collect a 6 cubic foot sample, unless otherwise instructed.
5. During air sampling, the Field Monitoring Teams should observe the dose rate instrument for significant changes in dose rates. Report significant changes to the plant.
6. The Field Monitoring Team shall drive out of the release plume and count the samples.
7. Remove the AgX cartridge and particulate filter from the sampler head and place in separate labeled bags. Analyze the AgX cartridge per Appendix A, Step 5, save both samples as further inhouse analysis may be desired.

8.10 Air samples should be bagged, labeled and a log entry made of the following information:

1. Date and start time of sample
2. Duration of sample
3. Average flow rate of air sampler
4. Location of sample (map coordinates, landmarks, etc.)
5. Field Monitoring Team name
6. Air sampler number
7. Ludlum 2218 Analyzer Serial Number

ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES

8.0 INSTRUCTIONS: (continued)

- 8.11 Communicate the data as indicated on the worksheet (HP 202.1), enter similar information in the bound logbook and standby for further instructions.
- 8.12 The TSCHPS may direct that a longer sampling period be used if very low release concentrations are suspected to be occurring.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**TABLE 1
FIELD MONITORING TEAM CHECKLIST**

1.0 Emergency Kit (Footlocker) Inventory - verify necessary items.

NOTE

1. Magnetic-mount antenna is on top of kit.
2. If kit seal is unbroken, Then go to step 2.

- | | | |
|------|---|-------|
| 1.1 | TLD (2) | _____ |
| 1.2 | EPD (2) | _____ |
| 1.3 | DRD, 0 - 5 R (2) | _____ |
| 1.4 | Dosimeter Charger (1) | _____ |
| 1.5 | Full Face Respirator (2) (can be functionally checked on the spot) | _____ |
| 1.6 | Charcoal Canister (2) | _____ |
| 1.7 | AgX Cartridge (6) | _____ |
| 1.8 | Particulate Filter (6) | _____ |
| 1.9 | Stopwatch (1) | _____ |
| 1.10 | Air Sample Bag (6) | _____ |
| 1.11 | Surgical Gloves (6) | _____ |
| 1.12 | Tweezers (1) | _____ |
| 1.13 | Flashlight (1) | _____ |
| 1.14 | Calculator (1) | _____ |
| 1.15 | Portable Radio | _____ |
| 1.16 | Power Cord with Cigarette-lighter Plug | _____ |
| 1.17 | Microphone with Cable | _____ |
| 1.18 | DC Power Receptacle with Battery Chips | _____ |
| 1.19 | Logbook (1) | _____ |
| 1.20 | List of TSC Phone Numbers (1) | _____ |
| 1.21 | Procedure, HP-202 (1) | _____ |
| 1.22 | HP 202.1 Forms (6) | _____ |
| 1.23 | Set of Site and Local Maps (1) | _____ |
| | | |
| 2.0 | Verify Operability of Equipment (All tests in accordance with Appendix A, Operability Instructions) | |
| 2.1 | High Volume Air Sampler with battery cables | |
| | 1. Perform operability check IAW Appendix A. | _____ |
| 2.2 | Portable Dose Rate Instrument | |
| | 1. Perform operability check IAW Appendix A. | _____ |
| 2.3 | Portable Count Rate Instrument | |
| | 1. Perform operability check IAW Appendix A. | _____ |
| 2.4 | Ludlum 2218 Analyzer | |
| | 1. Perform operability check IAW Appendix A. | _____ |
| 2.5 | Field Team Radio | |
| | 1. Review Operating Instructions. | _____ |
| | 2. Attach magnetic-mount antenna to radio and vehicle. | _____ |
| | 3. Plug radio power cord into vehicle cigarette lighter. | _____ |
| | 4. Test radio. | _____ |
| | | |
| 3.0 | Prior to departing the Site Assembly Station verify the following: | |
| 3.1 | Radio check completed with the Plant | _____ |
| 3.2 | Dose Rate and Count Rate Instruments in cab and on lowest scale | _____ |
| 3.3 | Portable Count Rate Instrument in Emergency Kit (Footlocker) | _____ |
| 3.4 | Respirators in the cab | _____ |
| 3.5 | Field Team Members equipped with dosimetry | _____ |
| 3.6 | Maps in vehicle cab | _____ |
| 3.7 | Bolt cutters available (Red Team only) | _____ |

Team Name _____

Inventory by _____ Date ____/____/____

Operability Checks by _____ Date ____/____/____

ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES

APPENDIX A
OPERABILITY INSTRUCTIONS

(Page 1 of 11)

1. Connect Hi Vol Air Sampler to truck battery (observe polarity) with engine running, turn air sampler on, confirm that flow is > 1.0 cfm, with collection filters and holder in place.
2. Portable Dose Rate Instrument - Check calibration sticker, battery test and response to supplied check source.
3. Portable Count Rate Instrument - Check calibration sticker, battery test (unplug line cord) and response to supplied check source.
4. Battery and Operational Checks of the Ludlum Model 2218:

NOTE

Should it be necessary to use Channel 2, items contained within parentheses are settings to be used for Channel 2, see Figure 1.

Verify that the RECYCLE knob is OFF. The knob is labeled and located on the rear panel of the instrument.

4.1 Check the battery as follows:

NOTE

If an instrument fails the battery check, it can be used only if it is connected to AC power and successfully passes the operational check.

- A. Turn the POWER knob to BAT.
- B. Unplug the AC line cord.
- C. Depress the BAT testbutton.
- D. Observe the condition below the RATE SCALE.

ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES

APPENDIX A
OPERABILITY INSTRUCTIONS

(Page 2 of 11)

4. (continued)

4.1 (continued)

E. If battery condition is not within the acceptable BAT TEST range, plug in the AC line cord and turn the POWER knob to CHARGE. Attach a label to the instrument stating Instrument is charging, started charge at _____ AM/PM on _____, 19_____.

F. If the battery condition is acceptable, then continue with the steps below.

4.2 Set the STABILIZER toggle switch to OFF.

4.3 Ch1 (Ch2), set the ADD-OFF-SUBTRACT knob to ADD.

4.4 Ch2 (Ch1), set the ADD-OFF-SUBTRACT knob to OFF.

4.5 Ch1 and Ch2, set the ON-BYPASS toggle switch to BYPASS.

4.6 Ch1 (Ch2), set the WINDOW and the THRESHOLD dials (in accordance with) settings on the side of the 2218 cabinet.

4.7 Set the unused Channel's WINDOW and THRESHOLD dials to 10.0.

4.8 Ch1 (Ch2), set the IN-OUT toggle switch to IN.

4.9 Ch2 (Ch1), set the IN-OUT toggle switch to OUT.

4.10 Set the MINUTES knob to X1.

4.11 Set the LIVE-CLOCK toggle switch to LIVE.

4.12 Set the F-S (Fast-Slow) toggle switch to S.

4.13 Set the CH1-CH2-SCALER knob to SCALER.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
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**APPENDIX A
OPERABILITY INSTRUCTIONS**

(Page 3 of 11)

4. (continued)

4.14 Set the MINUTES thumbwheel to 01.

4.15 Perform a source check as follows:

- A. Place the Ba-133 check source in the shield under the detector.
- B. Depress the COUNT-RESET button to start counting.
- C. When counting stops, compare the displayed counts with the acceptance range that is located on the side of the instrument.
- D. If the displayed counts are within the acceptance range, then go to Step 4.17. If the displayed counts are not within the acceptance range, then go to Step 4.16.

4.16 High Voltage (HV) adjustments are performed as follows:

- A. Set the MINUTES knob to EXT.
- B. Place the Ba-133 check source in the shield under the detector.
- C. Depress the COUNT-RESET button to start counting.
- D. Observe the COUNTS/MINUTE (Count Rate Meter) scale while making small adjustments in voltage to obtain the maximum count rate achievable.
- E. Increase or decrease the voltage with the HV (High Voltage) dial.
- F. Set the MINUTES knob to X1.
- G. Depress the COUNT-RESET button to start counting.
- H. When counting stops, compare the displayed counts with the acceptance range that is located on the side of the instrument.

**ST. LUCIE PLANT
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**APPENDIX A
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4. (continued)

4.16 (continued)

- I. If the displayed counts are within the acceptance range, then go to Step 4.17. If the displayed counts are not within the acceptance range, then do not use the instrument.
- J. Tag the instrument OUT-OF-SERVICE, give the reason.
- K. Obtain another 2218 and perform the operability check.

4.17 Set the MINUTES thumbwheel to 05.

4.18 The battery and operational response checks have been successfully completed and the instrument has been set to count samples.

5. Operation of the Ludlum Model 2218:

5.1 Obtain Form HP 202.1, Environmental Airborne Activity Calculation Form.

5.2 Verify that the MINUTES thumbwheel is set to 05, adjust as necessary.

5.3 Perform a Background Count by depressing the COUNT-RESET button.

5.4 If the Background Counts are greater than 10,000 counts, then move to an area of presumed lower background. Repeat step 5.3. If the Background Counts are less than 10,000 counts, then go to the next step. If the background counts are still greater than 10,000 counts, continue and try to locate a lower background area.

5.5 Enter the number of counts in the blank labeled Background Counts on Form HP 202.1 and 5 in the blank labeled Count Time.

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5. (continued)

5.6 Calculate the Background Counts Per Minute (BCPM) by dividing the Background Counts by the Minutes.

5.7 Calculate the MINIMUM DETECTABLE COUNT (MDCR) using the following formula:

$$MDCR = BKG (CPM) + 4.66 \sqrt{\frac{BKG (CPM)}{BKG \text{ COUNT TIME (MIN)}}$$

5.8 Place the air sample cartridge in the shield under the detector so that the inlet side of the cartridge is facing the detector.

5.9 Count the sample by depressing the COUNT-RESET button.

5.10 If the Gross Counts are greater than 750,000 counts, then reduce the counting time to 1 minute by setting the MINUTES thumbwheel to 01. Repeat step 5.8. If the Gross Counts are less than 750,000 counts, then go to the next step.

5.11 Enter the number of counts in the blank labeled Gross Counts on Form HP 202.1 and 5 or 1 (as appropriate) in the blank labeled Count Time.

5.12 Calculate the Gross Counts Per Minute (GCPM) by dividing the Gross Counts by the Minutes.

5.13 Compare sample GROSS COUNT PER MINUTE (GCPM) to the calculated MDCR.

1. If GCPM is less than MDCR ($GCPM < MDCR$), Then report I^{131} activity as less than minimum detectable activity (<MDA).
2. If GCPM is equal to or greater than MDCR ($GCPM \geq MDCR$) GO TO step 5.14.

**ST. LUCIE PLANT
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**APPENDIX A
OPERABILITY INSTRUCTIONS**

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5. (continued)

5.14 Calculate the Net Counts Per Minute (NCPM) by subtracting the BCPM from the GCPM and enter in the blank labeled NCPM on Form HP 202.1.

5.15 Calculate the I-131 concentration ($\mu\text{Ci/ml}$) by entering the requested values in the following formula.

$$I-131 \mu\text{Ci/ml} = \frac{NCPM}{(2.63 E+09) (\text{_____ Ft}^3 \text{ volume})}$$

Background Counts per Minute= _____ (5.6)

Gross Counts per Minute = _____ (5.12)

Net Counts per Minute = _____ (5.14)

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX A
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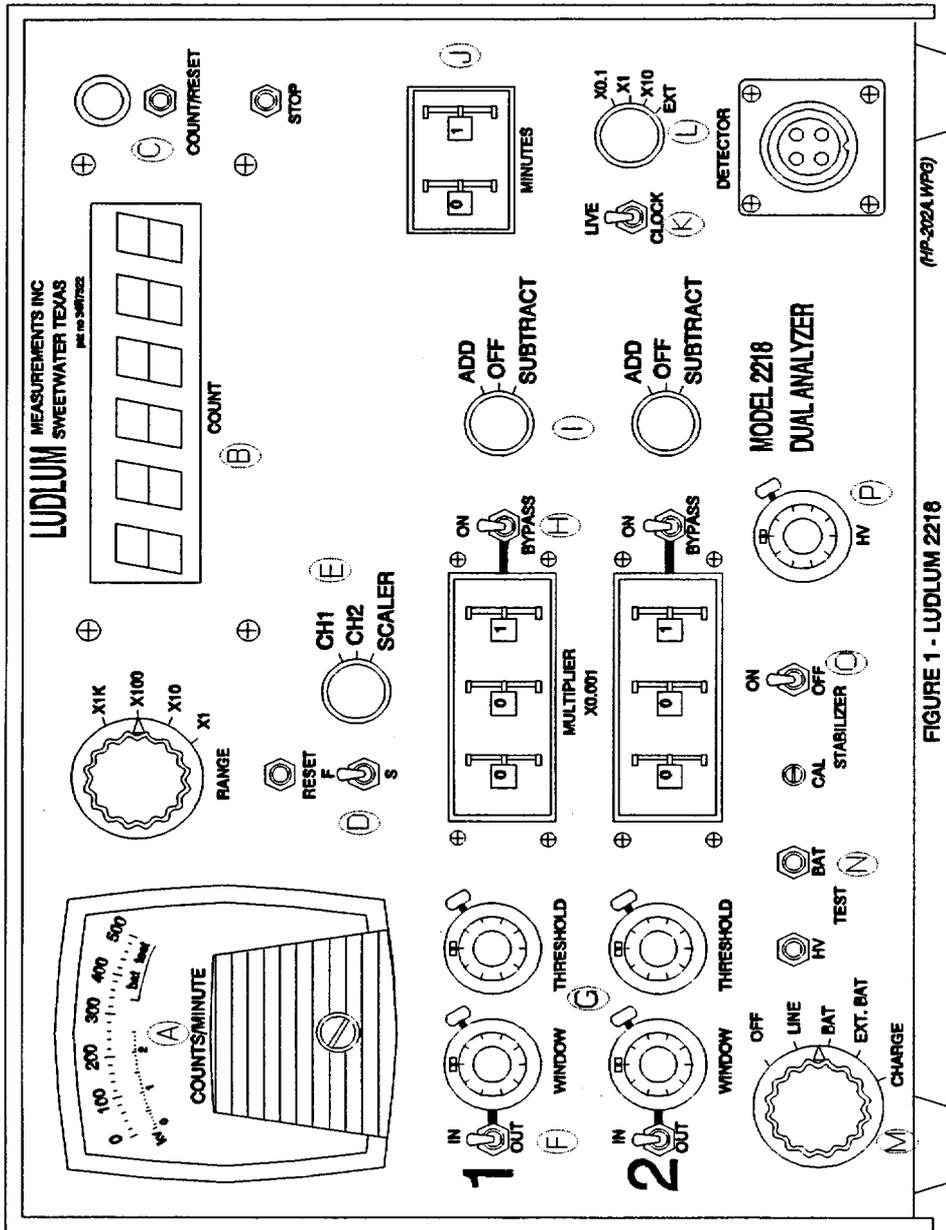


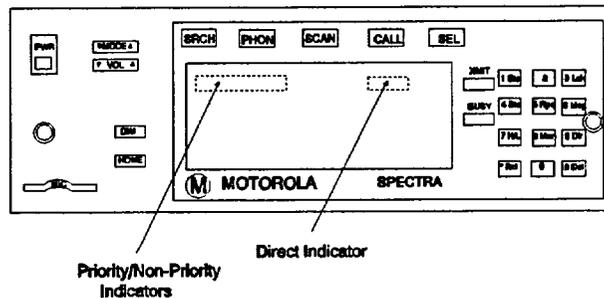
FIGURE 1 - LUDLUM 2218

<p>Battery Check M - set to "BAT" N - depress test button to check battery condition A - Indicates battery condition on "BAT TEST" scale</p>	<p>HV Adjustment L - set to "EXT" C - depress button to start count P - adjust voltage A - observe maximum count rate</p>	<p>Count Verification L - set to "X1" C - depress button to start count B - compare counts with acceptance range for the instrument</p>	<p>Operational Check (Ch1) Operation O - toggle to "OFF" I - Ch1 to "ADD"; Ch2 to "OFF" H - toggle to "BYPASS" for Ch1 and Ch2 G - Ch1 set WINDOW and THRESHOLD in accordance with settings on side of instrument; Ch2 set WINDOW and THRESHOLD to "10.0" F - toggle to "IN" for Ch1 and "OUT" for Ch2</p>	<p>L - set to "X1" K - toggle to "LIVE" D - toggle to "S" E - set to "SCALER" J - set to "01" for check set to "05" for sample count C - depress button to start count</p>
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**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX A
OPERABILITY INSTRUCTIONS
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Operating Instructions for the Motorola Spectra Radio



(HP-202B.WPG)

To Turn On The Radio: Press the power switch once.

To Set Volume and Squelch: Hold [Vol] rocker down to increase or decrease volume as desired; then release. The display shows volume levels from 0 to 15. The radio is ready to receive calls. On conventional modes with *Private Line* or *Digital Private Line*, press [Mon] or remove the microphone from the hang-up clip to defeat the coded squelch. Press again to return to coded-squelch operation. To adjust squelch level, hold [Mon] until a beep sounds; use [Mode] to select squelch level. Press [Home].

To Change Modes: Press [Mode] to select desired mode, or press [Home] to access the preprogrammed home mode.

To Transmit: Press and hold the microphone PTT; when the transmit light comes on solid and no alert tones sound (or a talk-permit tone or ID sidetone sounds), speak into the microphone in a normal voice. State your FCC call sign at the beginning of each transmission.

To Talk Mobile-to-mobile (Conventional Modes): Press [Dir]; the DIR indicator lights to indicate direct (mobile-to-mobile) operation. Press [Dir] again to return to repeater operation.

To Activate operator Selected Coded Squelch (Conventional Modes): Press [MPL]; the MPL indicator lights to indicate the operator selected value is now active. Press [MPL] again to return to the mode strapped value.

To Activate Scan: Press [Scan] to start the scanning operation. The radio scans a preselected list of modes for activity. If no activity exists, the display shows your selected mode. When a scanned channel or talkgroup becomes active, the display shows the active mode name. The PRI and NPRI indicators show priority. Press [Scan] again to stop scanning.

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**APPENDIX A
OPERABILITY INSTRUCTIONS**

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**Operating Instructions for the Motorola Spectra Radio
(continued)**

To Edit a Scan List: Hold [Scan] until a beep sounds and the scan indicator blinks. Then,

- (1) Use [Mode] to select the mode you want to program.
- (2) Press [Sel] to add or to remove the displayed mode to the scan list. Repeat these steps to add to or change the list as desired. Then press [Home].

To Select Scan Mode Priority: When editing a Priority Scan list, you may designate two of the modes as priorities by pressing the [Sel] button as indicated below. When priorities are set, press [Home] to end scan list selection.

Press [Sel]	Assigns Mode to	Indicator
1 Time	Non-Priority	NPRI Lights
2 Times	Second Priority	PRI Lights
3 Times	First Priority	PRI Blinks

NOTE

The radio should be turned off whenever the engine is off to avoid draining the vehicle battery.

GENERAL SAFETY INFORMATION

The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA) has established an electromagnetic energy safety standard that applies to the use of this equipment. Proper use of this radio will result in exposure below the OSHA limit. The following precautions are recommended:

- DO NOT operate the transmitter of a mobile radio when someone outside the vehicle is within two feet (0.6 meter) of the antenna.
- DO NOT operate the transmitter of a fixed radio (base station, microwave, the rural telephone RF equipment) or marine radio when someone is within two feet (0.6 meter) of the antenna.

**ST. LUCIE PLANT
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ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX A
OPERABILITY INSTRUCTIONS**

(Page 10 of 11)

**Operating Instructions for the Motorola Spectra Radio
(continued)**

**GENERAL SAFETY INFORMATION
(continued)**

- DO NOT operate the transmitter of any radio unless all RF connectors are secure and any open connectors are properly terminated.
- DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.
- All equipment must be properly grounded according to Motorola installation instructions for safe operation.
- All equipment should be serviced only by a qualified technician.

Refer to the appropriate section of the product service manual for additional pertinent safety information.

INSTALLATION SAFETY WARNING

Consider the occupants' safety when you choose a location for the radio. Do not mount the radio overhead or on a sidewall unless you take special precautions.

If someone were to remove the radio and fail to replace it properly, road shock could bump the radio loose and the falling radio could, in some circumstances, cause serious injury to the driver or a passenger. In a crash, even when properly installed, the radio could break loose and become a dangerous missile.

If you must mount the radio overhead or on a sidewall, give it the added protection of a retaining strap.

OPERATIONAL SAFETY WARNINGS

WARNING

For vehicles equipped with electronic anti-skid systems, see ANTI-SKID BRAKING PRECAUTIONS Publication, Motorola Number 68P81109E34.

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APPENDIX A
OPERABILITY INSTRUCTIONS

(Page 11 of 11)

Operating Instructions for the Motorola Spectra Radio
(continued)

OPERATIONAL SAFETY WARNINGS
(continued)

WARNING

For vehicles equipped with electronic ignition systems, check the service manual for warnings about the use of two-way radio equipment in the vehicle.

WARNING

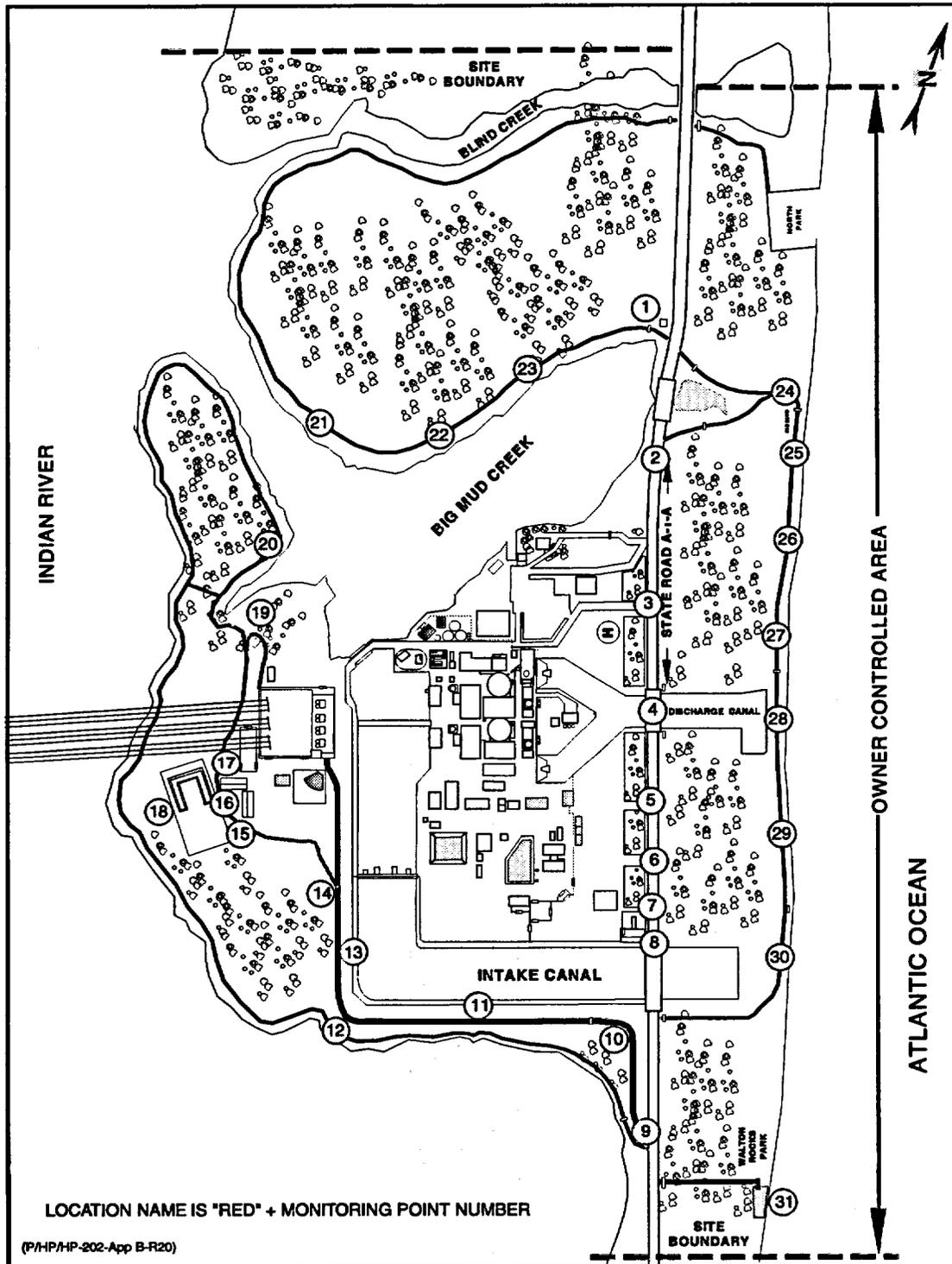
It is mandatory that radio installation in vehicles fueled by liquefied petroleum gas conform to the following standard:

National Fire Protection Association standard NFPA 58 applies to radio installation in vehicles fueled by liquefied petroleum (LP) gas with LP gas container in the trunk or other sealed-off space within the interior of the vehicles. This standard requires that:

1. Any space containing radio equipment shall be isolated by a seal from the space in which the LP gas container and its fittings are located.
2. Remote (outside) filling connections shall be used.
3. The container space shall be vented to the outside.

**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX B
PRESELECTED ON-SITE MONITORING POINTS
(Page 1 of 4)**



**ST. LUCIE PLANT
HEALTH PHYSICS PROCEDURE NO. HP-202, REVISION 27
ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX B
PRESELECTED ON-SITE MONITORING POINTS
(Page 2 of 4)**

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-1	Met Tower, Site Assembly Sta.	0.5	A
Red-2	Gate A & Rte A1A	0.3	B
Red-3	Gate B & Rte A1A	0.25	B
Red-4	Discharge Canal Bridge @ Rte A1A	0.2	D
Red-5	Gate C & Rte A1A	0.25	E
Red-6	Gate D & Rte A1A	0.3	F
Red-7	Gate E & Rte A1A	0.33	F
Red-8	Gate F & Rte A1A (north side of intake canal)	0.45	G
Red-9	Gate G & Rte A1A	0.6	G
Red-10	Ball Park Road (first north to westbound corner)	0.5	G
Red-11	Ball Park Road (@ mile marker on berm)	0.46	G, H
Red-12	Ball Park Road (@ corner turning north)	0.5	H, J
Red-13	Ball Park Road (post in berm, midway between monitoring points Red 12 & 14)	0.38	J
Red-14	Ball Park Road (@ left turn towards Gun Range/ Picnic Pavilion)	0.3	K

**ST. LUCIE PLANT
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**APPENDIX B
PRESELECTED ON-SITE MONITORING POINTS**

(Page 3 of 4)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-15	Gate W-25 (east side of Gun Range)	0.4	L
Red-16	Picnic Pavilion	0.33	L
Red-17	Intersection of Boat Ramp turnoff & road to Fire Training Area	0.32	L
Red-18	Gate W-26 (west side of Gun Range)	0.5	L
Red-19	Boat Ramp	0.36	M, N
Red-20	Fitness Trail (@ .5 mi. sign)	0.5	N
Red-21	Road, north side of Big Mud Creek (opposite Boat Ramp)	0.35	P
Red-22	Road, north side of Big Mud Creek (opposite City Water Storage Tanks)	0.30	Q
Red-23	Road, north side of Big Mud Creek (opposite Barge Slip)	0.4	R
Red-24	Turtle Beach Parking Lot	0.62	B
Red-25	Large foot bridge	0.54	B, C
Red-26	Small foot bridge	0.51	C
Red-27	Concrete power pad	0.5	C
Red-28	Discharge Canal Header	0.5	D

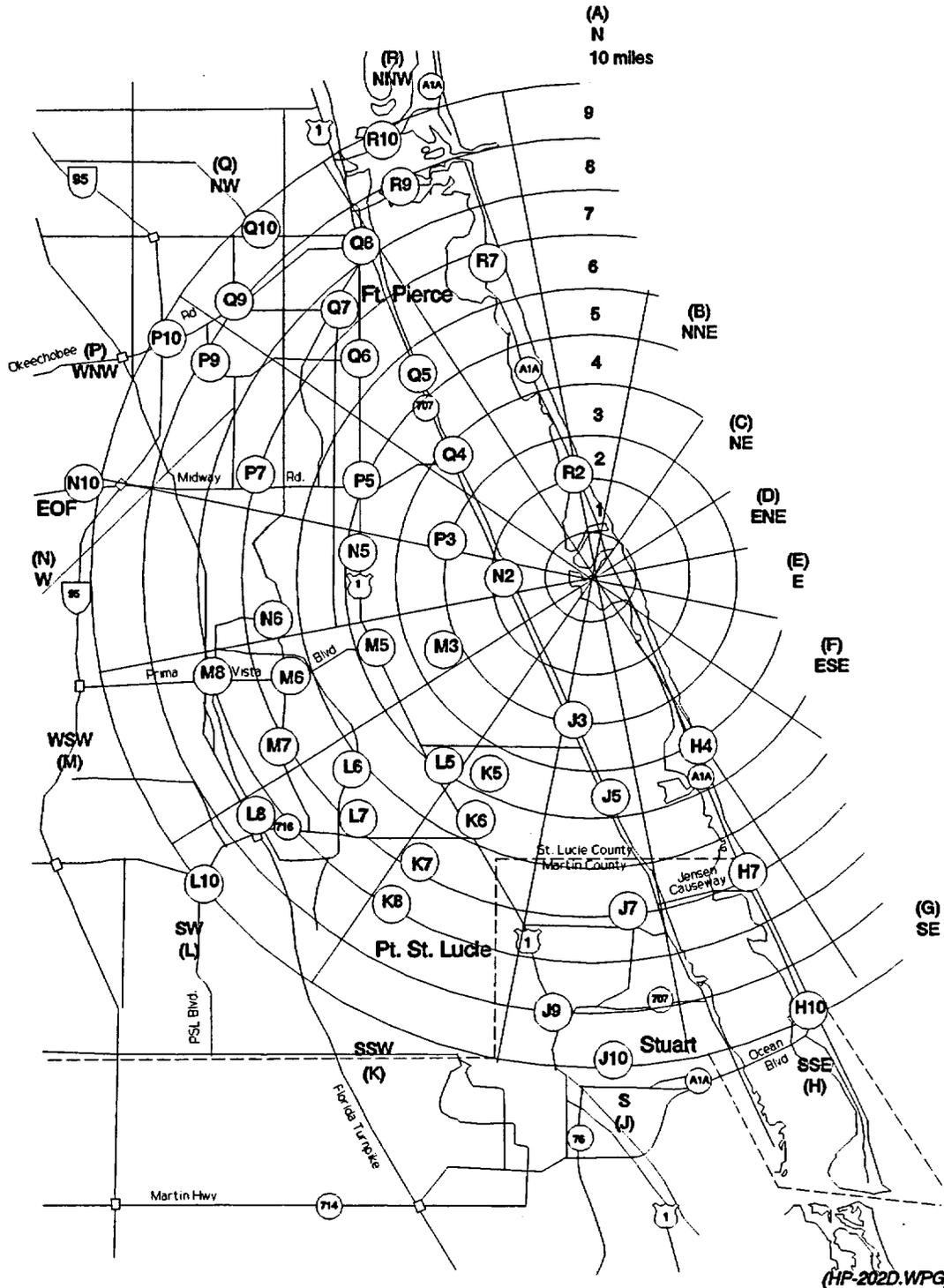
ST. LUCIE PLANT
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APPENDIX B
PRESELECTED ON-SITE MONITORING POINTS
(Page 4 of 4)

<u>MONITORING POINT</u>	<u>LOCATION</u>	<u>DISTANCE FROM PLANT (MILES)</u>	<u>EPZ SECTOR</u>
Red-29	Halfway between Discharge & Intake Canal Headers	0.52	E
Red-30	Intake Canal Header	0.6	F
Red-31	Walton Beach entrance road (@ fork in the road)	0.8	G

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**APPENDIX C
PRESELECTED OFF-SITE MONITORING POINTS
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(HP-202D.WPG)

**ST. LUCIE PLANT
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ENVIRONMENTAL MONITORING DURING EMERGENCIES**

**APPENDIX C
PRESELECTED OFF-SITE MONITORING POINTS
(Page 2 of 4)**

Monitoring Point	Location	Distance From Plant	EPZ Sector
R2	S.R. A1A, NNW of plant site (Little Mud Creek Bridge)	2.3	R
R7	Intersection S.R. A1A and Clipper Blvd. (Entrance to Ocean Village)	6.7	R
R9	S.R. A1A, NNW of plant site (West of Fire Dept. at Siren)	8.6	R
R10	East side of North Bridge (S.R. A1A)	9.6	R
Q4	Intersection of Indian River Dr. (S.R. 707) and White Rd., East of White City and South of Fort Pierce	3.7	Q
Q5	Intersection of Indian River Dr. (S.R. 707) and Rio Vista Dr.	5.4	Q
Q6	Intersection of U.S. 1 and Edwards Rd. (S.R. 611.B), South side of Ft. Pierce near railroad crossing	6.4	Q
Q7	Intersection of Oleander Blvd. (S.R. 605) and Virginia Ave.	7.4	Q
Q8	Intersection U.S. 1 and Delaware Ave.	8.1	Q
Q9	Intersection of Okeechobee Rd. (S.R. 70) and Hartman Rd. (S. 41st St.) (near siren)	9.1	Q
Q10	Intersection of Orange Ave. (S.R. 68) and Angle Rd.	9.6	Q
P3	Intersection of Bartow St. and Yucca Dr.	3.2	P
P5	Intersection of U.S. 1 and Midway Rd. (S.R. 712), White City	5.2	P
P7	Intersection of Midway Rd. (S.R. 712) and Christianson Rd. (at siren)	7.1	P

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**APPENDIX C
PRESELECTED OFF-SITE MONITORING POINTS
(Page 3 of 4)**

Monitoring Point	Location	Distance From Plant	EPZ Sector
P9	Intersection of McNeil Rd. and Edwards Rd. (611B)	8.7	P
P10	Intersection of Okeechobee Rd. (S.R. 70) and I-95	9.7	P
N2	S.R. 707 West of plant site (at siren)	2.0	N
N5	Intersection of U.S. 1 and Saeger Rd. (south of White City)	4.8	N
N6	Intersection of St. James Dr. and Airoso Blvd.	6.4	N
N10	St. Lucie's EOF, Intersection of S.R. 712 and I-95	10.2	N
M3	East end of N. Mediterranean Blvd.	3.4	M
M5	Intersection of U.S. 1 and Prima Vista Blvd., Port St. Lucie	4.8	M
M6	Intersection of Prima Vista Blvd. and Airoso Blvd.	6.5	M
M7	Intersection of Airoso Blvd. and Whitmore Dr.	7.3	M
M8	Intersection of Prima Vista Blvd. and Bayshore Blvd.	7.8	M
L5	Intersection of U.S. 1 and Walton Rd., Port St. Lucie	4.8	L
L6	Intersection of Floresta Dr. and Thornhill Dr.	6.4	L
L7	Intersection of Whitmore Drive and Port St. Lucie Blvd.	7.2	L
L8	Intersection of Port St. Lucie Blvd. and Fla. Turnpike	8.4	L
L10	Intersection of Port St. Lucie Blvd. and Cairo Ave.	10	L

**ST. LUCIE PLANT
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**APPENDIX C
PRESELECTED OFF-SITE MONITORING POINTS
(Page 4 of 4)**

Monitoring Point	Location	Distance From Plant	EPZ Sector
K5	Intersection of Lennard Rd. and Blossom Rd.	4.7	K
K6	Intersection of U.S. 1 and Port St. Lucie Blvd., Port St. Lucie	5.7	K
K7	Intersection of Morningside Blvd. and Westmoreland Blvd.	7.1	K
K8	Intersection of Morningside Blvd. and River Vista Dr.	8.0	K
J3	Intersection of Walton Rd. and Indian River Dr. (S.R. 707)	3.4	J
J5	Intersection of Indian River Dr. (S.R. 707) and Mockingbird Hill Rd. (near siren)	4.7	J
J7	Intersection of Jensen Beach Blvd. (S.R. 707A) and Savannah Rd. (S.R. 723)	7.0	J
J9	Intersection of Wright Blvd. and U.S. 1	9.2	J
J10	Martin Memorial Hospital	10.0	J
H4	S.R. A1A, south of plant (at siren) North to entrance to Nettle's Island	4.0	H
H7	Intersection of S.R. A1A and the Jensen Beach turnoff (A1A Alt.) (at siren)	6.9	H
H10	Intersection of S.R. A1A and Ocean Blvd. (Elliot Museum)	9.8	H

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HP 202.1
ENVIRONMENTAL AIRBORNE ACTIVITY CALCULATION FORM

- * 1. Team _____ Date ___/___/___ Time _____
- * 2. Location _____
- * 3. Radiation Survey: Window Open _____ mrem/hr
 Window Closed _____ mrem/hr

4. Air Sample Volume:

Sample Start Time _____ Sample Stop Time _____
 Starting Flow Rate _____ CFM Ending Flow Rate _____ CFM
 Average Flow Rate _____ CFM Sample Time _____ Min
 Sample Volume = Average Flow Rate (CFM) X Sample Time (Min)
 = _____ CFM X _____ Min = _____ Cubic Feet

NOTE

In the event radioiodine (I-131) analysis cannot be done in the field, the TSC HP Supervisor will provide for the transport of air samples to the plant site for analysis.

5. Background Count Rate = Background Counts / Count Time
 = _____ counts / _____ Min = _____ BKG cpm

6. $MDCR = BKG \text{ cpm} + 4.66 \sqrt{\frac{BKG \text{ cpm}}{BKG \text{ Count Time}}} = \text{_____ } MDCR \text{ (cpm)}$

7. Gross sample count rate (GCPM) = Gross counts / Count Time
 = _____ counts / _____ min
 = _____ GCPM

8. If "GCPM" is less than "MDCR", Then ¹³¹I activity is "<MDA" (less than detectable).

9. Net Count Rate (NCPM) = GCPM - Bkg cpm
 NCPM = _____ GCPM - _____ BKG cpm
 NCPM = _____

10. ¹³¹I activity ($\mu\text{Ci/ml}$) = $\frac{\text{(_____ } NCPM \text{)}}{(2.63 \text{ E} + 09) \text{ (_____ sample volume, Ft}^3\text{)}}$

- * 11. ¹³¹I activity = _____ $\mu\text{Ci/ml}$
- * 12. Plume Departure Time _____
- * 13. Plume Stay Time: _____ minutes

Survey performed by _____

NOTIFY TSC OF ALL * ITEMS