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CALLAWAY PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-A0001

EMERGENCY RESPONSE ORGANIZATION

RESPONSIBLE DEPARTMENT **Emergency Preparedness**

PROCEDURE OWNER **S. J. Crawford**

WRITTEN BY **S. J. Crawford**

PREPARED BY **S. J. Crawford**

APPROVED BY Warren A Witt

DATE ISSUED 11-9-01

This procedure contains the following:

Pages	1	through	5
Attachments	1	through	1
Tables		through	
Figures		through	
Appendices		through	
Checkoff Lists		through	

This procedure has _____ checkoff list(s) maintained in the mainframe computer.

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Non-T/S Commitments 003

TABLE OF CONTENTS

EMERGENCY RESPONSE ORGANIZATION

1 PURPOSE AND SCOPE

1.1 PURPOSE/SCOPE

This procedure defines administrative and maintenance expectations of the Emergency Response Organization.

2 DEFINITIONS

2.1 "As Needed" Personnel – Emergency Response Personnel identified as "as needed" on Table 5 of the **RERP**. Notified to respond by manual callout conducted by their respective coordinator.

2.2 Emergency Response Personnel – Pre-designated personnel, in addition to Rapid Responders, who staff the Emergency Response Facilities to make them capable of fulfilling all intended emergency functions. Emergency Response Personnel may be duty or non-duty responders.

2.3 Duty Responders – Emergency Response Personnel designated for rotating on-call coverage scheduled around the clock to ensure response during off-normal working hours.

2.4 Emergency Response Organization - An organization that has been established to provide technical and logistical direction in the event of a radiological emergency declaration at the Callaway Plant. This organization is structured to provide Plant control and coordination of on-site response, coordination of off-site response and dissemination of information to the public.

2.5 Emergency Response Organization Staffing Levels – The desired staffing level for the Emergency Response Organization is to maintain six (6) individuals qualified in each emergency response position identified in the Radiological Emergency Response Plan. The minimum staffing level is three (3) qualified individuals per position.

2.6 Emergency Telephone Directory – A document published and distributed quarterly, containing the telephone numbers of the Plant's Emergency Response Facilities (ERFs), off-site emergency telephone numbers, and phone numbers of individuals by position of the Emergency Response Organization.

2.7 Mobilization – The process of staffing the Emergency Response Facilities with the Emergency Response Organization. This includes announcements over Plant Gai-tronics System and activation of the Cellular Paging System.

2.8 Non-Duty Responders – Designated Emergency Response Personnel that are not on a duty schedule but are expected to respond to emergency pages at all times if fit-for-duty and within the response goal times.

2.9 Rapid Responders – Pre-designated Duty Responders assigned to staff the Technical Support Center and the Emergency Operations Facility sufficiently to relieve Control Room personnel of emergency functions not directly related to operation of the Plant. Rapid Responders are designated on a rotating basis to be available for mobilization via the Cellular Paging System. When designated on duty, personnel remain fit for duty and within their designated response time of the Plant.

3 PROCEDURE

3.1 EMERGENCY RESPONSE ORGANIZATION (ERO)

Mobilized at the ALERT or higher emergency classification or when deemed necessary by the Shift Supervisor. The ERO augments the on-shift operating organization and consists of the Rapid Responders and Designated Emergency Response Personnel.

3.1.1 Responsibilities of Emergency Response Organization (ERO) members:

3.1.1.1 Maintaining qualifications and requalifications as per **EIP-ZZ-A0066**, RERP Training Program.

3.1.1.2 Informing Emergency Preparedness Department as per **APA-ZZ-00902**, Employee Personnel Changes, Termination, and/or Access Withdrawal, of terminating employment at the Callaway Plant or circumstances that would no longer allow participation as an ERO member.

3.1.1.3 Being aware, that if declared pregnant, they will not respond and will be deleted as an ERO member. **(CARS 200000370)**

3.1.1.4 Being aware, that if their TLD is taken due to medical procedures, they will not respond until their TLD is returned. **(CARS 200105018)**

3.1.1.5 Participating in required tests, drills, and exercises.

NOTE:	When paged by the Plant for an Emergency, instructions are displayed on the pager. Any Group Pages that do not display Emergency Response Organization instructions should be disregarded. **(CARS 199802824)**

3.1.1.5.1 A **TEST** requires a phone call to the emergency Audix.

3.1.1.5.2 A **DRILL** requires a call to the emergency Audix, except when onsite during normal working hours, plus actual response to your designated Emergency Response Facility.

3.1.1.5.3 An **EMERGENCY** requires the same response as a DRILL.

NOTE:	If an ACTUAL Plant Emergency message is received, all ERO members that are fit for duty should respond.

3.1.1.6 Apply ERO sticker to driver license and get a new sticker if license is renewed.

3.1.2 Responsibilities of Duty Responders:

3.1.2.1 Wear or maintain assigned pager within hearing range at all times.

3.1.2.2 Maintain the duty cellular phone (if assigned) available for use at all times.

3.1.2.3 Remain "fit for duty" as specified in Callaway Plant Policies and Procedures.

3.1.2.4 Maintain ability to respond to the respective Emergency Response Facility within their response time goal, as specified in the RERP.

3.1.2.5 Respond to paging instructions safely and immediately.

3.1.2.6 Ensure duty exchange and turnover is verbal in all cases.

3.1.2.7 Emergency Preparedness should be notified of trades involving one day or greater so the duty schedule can be updated.

3.1.2.8 Rapid Responders responding to the EOF should be in possession of a key to the EOF to allow quick access.

3.1.2.9 Recovery Managers/Company Spokespersons, Technical Assessment Coordinators/Lead Engineers, Off-site Liaison Coordinators/EOF Communicators, and Dose Assessment Coordinators have Rapid Responder duty responsibilities as well as other Emergency Response Organization positions, and should respond to all emergency pages if fit for duty.

3.1.3 Responsibilities of Non-Duty Responders:

NOTE:	Non-Duty Responders are considered emergency responders at all times. Exceptions are when the responder is not fit for duty, sick, on vacation, or out of the response area.

3.1.3.1 The responder is expected to maintain assigned pager within hearing range at all times.

3.1.3.2 Follow the instructions displayed on the pager in a safe and immediate manner.

3.2 MAINTAINING THE EMERGENCY RESPONSE ORGANIZATION

3.2.1 Emergency Preparedness (EP)

3.2.1.1 Is responsible for the overall maintenance of the Emergency Response Organization.

3.2.1.2 Publishes and distributes the Emergency Telephone Directory per the Surveillance program.

3.2.1.3 Ensures minimum staffing levels of the Emergency Response Organization is maintained by using Emergency Response Organization Maintenance Form, Attachment 1.

3.3 MAINTENANCE OF THE EMERGENCY RESPONSE ORGANIZATION DURING REFUEL OUTAGE PERIODS

3.3.1 Approximately sixty days prior to a refuel outage, Emergency Preparedness and Outage Scheduling reviews the outage organization.

3.3.2 Emergency Response Organization Positions are identified with outage positions or qualified personnel to ensure round the clock coverage for the Emergency Response Organization during refuel outages.

4 REFERENCES

4.1 10CFR26, Fitness for Duty

4.2 10CFR50.47, Emergency Plans

4.3 10CFR50 Appendix E, Emergency Planning and Preparedness for Production and Utilization

4.4 Callaway Plant Radiological Emergency Response Plan (**RERP**)

4.5 NRC Reg Guide 1.101, Emergency Planning and Preparedness for Nuclear Power Reactors

4.6 NUREG 0654/FEMA-REP-01, Revision 1, November 1980

4.7 **APA-ZZ-00902**, Employee Personnel Changes, Termination, and/or Access Withdrawal

4.8 **EIP-ZZ-A0066**, RERP Training Program

5 RECORDS

5.1 Q. A. Records

None

5.2 Commercial Records

5.2.1 Emergency Response Organization Maintenance Form, CA-#2448 (File Number K250.0010)

EMERGENCY RESPONSE ORGANIZATION MAINTENANCE FORM

NAME _____ SOCIAL SECURITY NUMBER _____ - _____ - _____

EMERGENCY RESPONSE POSITION _____ ERO CODE _____

ADDITION

_____ INITIAL

1. Does the individual have a color vision impairment? ☐ Yes ☐ No

> **NOTE:** If color vision impairment is identified by the individual, Fitness for Duty Nurses will evaluate to determine if the impairment would prevent the individual from performing Emergency Response Organization duties. **(CARS 199700904)**

_____ INITIAL

2. ERO Code added to Personnel Database.

_____ INITIAL

3. Qualified for Emergency Position per **EIP-ZZ-A0066**.

_____ INITIAL

4. Emergency Response Organization Listing updated on the EP Intranet Page.

_____ INITIAL

5. Pager assigned. Number _____

_____ INITIAL

6. Apply responder sticker to driver license.

_____ INITIAL

7. Schedule a drill observation (preferred) or walk-through of the Emergency Response Facility with a qualified individual, Training Department, or Emergency Preparedness Department. **(CARS 199803843)**

I have read and understand the expectations pertaining to my ERO position.

_____
Signature, ERO Member

DELETION

_____ INITIAL

1. ERO Code removed from Personnel Database.

_____ INITIAL

2. Emergency Response Organization Listing updated on the EP Intranet Page.

_____ INITIAL

3. Pager and/or cellular telephone returned.

_____ INITIAL

4. Ensure the person is aware that they are not to respond as an ERO Member, unless reinstated.

cc: Individual
Department Head
EP File K250.0010

ATTACHMENT 1
CA-#2448

EMERGENCY RESPONSE ORGANIZATION EXPECTATIONS

General

NOTE:	Contract personnel MUST meet the requirements of a separate agreement.

ALL Emergency Response Organization (ERO) personnel are responsible for:

- Attending scheduled RERP training to maintain qualifications in accordance with **EIP-ZZ-A0066**.
- Participating in RERP Tests, Drills, and Exercises, as either a player or controller.
- Notifying the Emergency Preparedness department if their ERO pager or cellular phone (if assigned) is lost or needs repair. If you are on duty, contact someone to take your duty or contact the Control Room for another pager. **(CARS 200104877)**
- Notifying the Emergency Preparedness department if ERO responsibilities can no longer be filled.
- Being aware that if your TLD is taken by Health Physics for medical reasons or declared pregnancy, that you will be relieved of ERO responsibilities until the TLD is returned. **(CARS 200000370, 200105018)**
- Being aware that when responding to an emergency page from on site, responds directly to the Emergency Facility, don't call the toll free number.
- Ensuring the ERO sticker is applied to the driver license and getting a new sticker when the license is renewed.

Duty Section Personnel

ALL Rapid Responders, and individuals assigned other ERO positions with assigned Duty Sections, are expected to meet the below requirements when **ON DUTY**:

- Wear and maintain their assigned pagers at all times.
- Carry and maintain the duty cellular phone (if assigned) at all times.
- Be in possession of a key to the EOF for quick access (EOF Rapid Responders only).
- Remain "fit for duty" as specified in Callaway Plant Policies and Procedures.
- Maintain the ability to respond to their respective Emergency Response Facility within the response time goal, as specified in the RERP.
- Respond to paging instructions safely and immediately.
- When assuming or being relieved of Duty, turnover will be verbal in ALL cases.
- When trading duty for periods of one day or greater, contact the Emergency Preparedness department so that the Duty Schedule can be updated on the LAN.

Non-Duty Section Personnel

All personnel assigned to Non-Duty Section ERO positions are expected to meet the below requirements at all times (exceptions to these expectations are when individuals are not fit for duty, sick, on vacation, or out of the response area):

- Wear and maintain their assigned pagers at all times.
- Respond to paging instructions safely and immediately.

EIP-ZZ-00211
Revision 020
October 22, 2001

CALLAWAY PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-00211

FIELD MONITORING

RESPONSIBLE DEPARTMENT Emergency Preparedness

PROCEDURE OWNER T.W. Parker

WRITTEN BY T.W. Parker

PREPARED BY T.W. Parker

APPROVED BY Warren A. Witt

DATE ISSUED 11-9-01

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Attachments	1	through	3
Tables		through	
Figures		through	
Appendices		through	
Checkoff Lists		through	

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TABLE OF CONTENTS

FIELD MONITORING

1 PURPOSE AND SCOPE

1.1 PURPOSE

Implement processes, in the event of a radioactive release from Callaway Plant, to support dose projection calculations by:

- Sampling a radioactive plume.
- Tracking the path of a radioactive plume.
- Assessing consequences to the surrounding areas resulting from a radioactive plume released from Callaway Plant.

1.2 SCOPE

Establishes responsibilities of Field Monitoring Teams (FMT) members, communicators, and coordinators.

Quickly form, brief, and dispatch FMTs necessary to support dose projections while ensuring:

- Teams have the necessary sampling and safety equipment.
- Equipment is in good condition and operationally checked.

2 RESPONSIBILITIES

2.1 Health Physics Coordinator (HPC) forms FMTs.

2.2 Dose Assessment Coordinator (DAC) directs and assesses FMT activities. **COMN 3375**

2.3 Dose Assessment Staff (DAS) reports to the DAC. DAS records the FMT locations and sample data. DAS maintains the radiological status boards in the EOF. **COMN 3355**

2.4 FMTs track and quantify plume dose rates. In cooperation with the State Department of Health, FMTs also assist in the collection of environmental sample media. **COMN 3396**

3 PRECAUTIONS

3.1 FIELD MONITORING TEAM

3.1.1 Primary method of communication between FMTs and the EOF is the radio on Repeater Plant 2.

3.1.1.1 If radio communications are lost or intermittent, the cellular phone should be used.

3.1.2 Primary method of communication between FMTs and the Backup EOF should be the cellular phone.

3.1.2.1 If phone communications are lost or intermittent, use the radio on Repeater Plant 2.

3.1.3 If communications cannot be established via alternate radio channels or cellular phone, return to the appropriate facility (EOF, Backup EOF, or Callaway Plant) and contact the DAC.

3.1.4 Minimize the time in the plume. Perform all sample counting and calculations outside the plume location.

3.1.5 In the event the Plume is passing overhead during the Operational Check of the GPS units, the units will be considered Operationally SAT, if the GPS MAP 162 indicates 2D or 3D navigation or the GPS 12/12XL automatically changes to the Position Page. Sufficient time must be allowed for the units to acquire the appropriate number of satellites needed for navigation. **CARS 200105973**

3.1.6 Ventilation from outside sources should be minimized upon entry into the plume. Place vehicle ventilation in recirculation (depress MAX button, REC will light on your display) or off (for vehicles without A/C). Ensure windows are closed.

3.1.7 Silver Zeolite cartridges used for Iodine sampling are a hazardous waste. Return all cartridges to Chemistry for processing in accordance with APA-ZZ-00832 .

3.1.8 Designation of radioactive materials is not necessary while the items are under the control of a Field Monitoring Team member.

4 PROCEDURE

4.1 TEAM FORMATION

4.1.1 The HPC designates a FMT Leader from the available Support Area Personnel.

4.1.2 The HPC requests a FMT Driver from the Ops Support Coordinator.

4.1.2.1 FMT obtains the vehicle keys from the Ops Support Coordinator or Health Physics Coordinator.

4.1.3 HPC briefs the FMT on current conditions. Record information on Attachment 1, Section I , Team Formation.

4.2 EQUIPMENT CHECKOUT

4.2.1 FMT Leader and Driver proceed to the Central Processing Facility (CPF) to checkout FMT equipment. Record equipment checks on Attachment 1, Section II, Equipment Checkout. FMT equipment lockers are located in the whole body count room #1102.

NOTE:	The following steps of Equipment Checkout may be performed in any order.

4.2.2 The FMT Driver should assist the Team Leader as directed.

4.2.3 Response check all survey instruments, applicable operating procedures are located in a binder stored on the outside of the FMT equipment locker.

4.2.4 Load instruments, Immediate Field Monitoring Kit, check source, and any additional equipment into the RERP vehicle.

4.2.5 Check the Global Positioning System (GPS) for proper operation. The operator aid is in the FMT procedure binder.

4.2.6 Check the DC to AC inverter for proper operation. Operational check of the air sampler using the inverter as the power source satisfies this check.

4.2.7 Check the RERP vehicle fuel supply greater than ½ full. If necessary refuel vehicle from fuel tank located at Stores 1. Key to fuel pump is on the RERP vehicle key ring.

4.2.8 Electronic dosimetry devices (ED) are susceptible to interference from radios and cellular phones. To minimize the possibility of erroneous ED readings perform the following when operating phones or radios:

NOTE:	These checks may be performed during communication check for the radio and the phone.

- Maintain ED at least 4 inches from any antenna or co-axial cable used to connect to remote antenna.
- Check ED readings for possible interference while performing radio and phone checks.

4.2.9 Check the operation of the 2-way radio in the RERP vehicle. Switch the radio to "Repeater Plant 2." Contact FMT Communicator to perform a radio check.

4.2.10 Check the operation of the cellular phone by contacting Field Team Communicator (FTC) and having the FTC return the call. The phone numbers can be found on Attachment 1, FMT Briefing/Debriefing Checklist.

4.3 TEAM BRIEFING

4.3.1 Upon completion of section 4.1 Team Formation and section 4.2 Equipment Checkout, contact the FTC and report FMT status. FMT status should be as follows:

- FMT equipment checks completed and satisfactory.
- All FMT equipment loaded in the RERP vehicle.
- FMT ready to be dispatched.

4.3.2 The FMT requests a brief from the DAC. Record information in Attachment 1, Section III Briefing and Dispatch. The brief should include but not limited to following items:

NOTE:	The DAC may have the Field Team Communicator provide the brief.

- Team designator.
- Meteorological updates.
- Status of any releases in progress or possible release.
- Survey and sample locations.
- FMT review Attachment 1, Section IV Precautions.
- Potassium Iodide recommendations.

4.4 PLUME PHASE DOSE ASSESSMENT SAMPLING

CAUTION:	Any time the Model 14C reading exceeds 1 R/hr, leave the area and notify the DAC. **CARS 199802502**

4.4.1 Determine the leading edge and/or the perimeter sides of the plume by traversing the plume as near perpendicular to the wind direction/plume direction as possible.

4.4.1.1 Place probe of Model 14C on the seat, with the audible indicator on and probe window open facing up.

4.4.1.2 Determine the GPS location when the Model 14C detects the presence of the plume; record the information on Attachment 2, FMT Radiation Survey Sheet.

4.4.1.3 Determine the GPS location the Model 14C detects the highest reading while traversing the plume, record information on Attachment 2, FMT Radiation Survey Sheet. Indicate this as a centerline (C) reading.

NOTE:	It is permissible to obtain readings in step 4.4.2 during the initial pass through the plume if the plume centerline is easily identified. **CARS 199901680**

4.4.1.4 Determine the GPS location when the Model 14C detects the plumes other perimeter, record the information on Attachment 2, FMT Radiation Survey Sheet.

4.4.2 Return to the plume centerline location and perform the following samples:

4.4.2.1 Record dose rate using the Ion Chamber instrument on the FMT Radiation Survey Sheet.

- Hold meter waist level.
- Instrument window closed.

CAUTION:	Using the DC to AC inverter with vehicle engine off may cause excessive battery drain that could strand the vehicle in an undesirable location. **CARS 199803384**

4.4.2.2 Obtain a Particulate and Iodine air sample, and if requested by the DAC, include a sample for noble gas. Air sample volumes are typically 10 ft^3 for Particulate and Iodine and 2 minutes for Noble Gas. With DAC permission, sample volumes may be reduced to a minimum of 15 seconds to maintain FMT exposures ALARA. **CARS 199802505 COMN 43477**

4.4.3 Exit the plume and purge the Particulate and Iodine sample by running the sampler for approximately 1-min. to remove noble gas interference.

4.4.4 Using a G-M count rate meter, count the Particulate and Iodine samples. Record gross counts and background counts on the FMT Radiation Survey Sheet. **COMN 42903**

4.4.5 Report survey results and sample locations to the FMT Communicator.

4.5 INGESTION PATHWAY ENVIRONMENTAL SAMPLING

4.5.1 Obtain FMT Recovery Kit, located in the equipment room of the EOF.

4.5.2 Proceed to sample locations as directed by the DAC.

4.5.3 Obtain closed window ion chamber readings at waist level (window facing down) for the area to be sampled.

4.5.4 Record radiation readings on Attachment 3, FMT Environmental Collection Worksheet.

4.5.5 Vegetation samples are collected as follows:

CAUTION:	Do not contaminate the sample with soil. Do not collect vegetation from areas that are sheltered from fallout. **CARS 199901680**

- Collect approximately one cubic foot of vegetation.
- Clip vegetation to approximately one inch above the surface of soil.
- Double bag sample and label appropriately.
- Record sample information on Attachment 3, FMT Environmental Collection Worksheet.

4.5.6 Collect soil sample as follows:

CAUTION:	Do not collect soil from areas that are sheltered from fallout. The preferred soil sampling location is areas with minimal vegetation or bare soil locations.

- If excessive vegetation is present, this should be clipped off approximately 1 inch above the soil surface and discarded. The litter at the surface and the root mat are considered part of the sample.
- Using a shovel, remove two plugs, approximately six by six inches by two inches deep and approximately 1-2 feet apart. Minimize disturbance of the grass cover or surface soil.
- Double bag sample and label appropriately.
- Record sample information on Attachment 3, FMT Environmental Collection Worksheet.

4.5.7 Collect water samples as follows:

- Collect approximately two gallons.
- Double bag sample and label appropriately.
- Record sample information on Attachment 3, FMT Environmental Collection Worksheet.

4.5.8 Collect snow samples as follows.

> *CAUTION*: Do not collect snow from areas that are sheltered from fallout. Collect approximately 12 liters.

- Collect snow to a depth that is representative at the time of release. Ensure sample area has been undisturbed since release.
- Double bag sample and label appropriately.
- Record sample information on Attachment 3, FMT Environmental Collection Worksheet.

4.5.9 Return all samples to the EOF for processing.

4.6 FIELD MONITORING TEAM DEBRIEF/RELIEF

4.6.1 Normally, relief and turnover should be performed in the field, if possible.

4.6.2 Upon direction from the DAC, FMTs should report to the EOF or alternative location for debriefing.

4.6.3 Upon return to the EOF and prior to entry to the EOF, FMT personnel should be monitored for contamination.

4.6.3.1 If the FMT personnel are returning for relief or debriefing, access to the EOF should be through the Decontamination Area.

4.6.4 The FMT Leader ensures the DAC has updated the dose records for FMT members and completes dose information in Attachment 1 Section I, Team Formation.

4.6.5 The FMT Leader should complete Attachment 1, Section V, Debriefing, and return to DAC. **CARS 199802498**

4.7 FIELD TEAM COMMUNICATOR (FMT TRACKING)

4.7.1 Using the wind direction, draw the plume centerline. The line should be drawn out to a distance based on wind speed and start time of the release.

4.7.2 If the plume centerline is within 3° (round to whole number) of a sector boundary, both sectors bordering that boundary are considered centerline sectors.

4.7.3 Using a different color than was used to draw the plume centerline, outline the outer boundaries of the affected sectors. The affected sectors include the centerline sector(s) and the adjacent sectors. Both sectors on either side of the centerline sector(s) are considered adjacent sectors.

4.7.4 When contacted by the FMT, the DAC may direct the FMT Communicator to brief the FMTs on the status of the emergency. Refer to section 4.3, Team Briefing.

4.7.5 Establish the position of the FMT with corresponding indicators (e.g., RED, BLUE, and GREEN).

4.7.6 FMT Communicator should use Attachment 2, FMT Radiation Survey Worksheet, to record survey results as they are reported by the FMTs.

4.7.7 Update the Field Monitoring Status Boards with current information from Attachment 2.

4.7.8 When sufficient data is available (a minimum of 1 point defining each side edge and a point defining the leading edge), determine and draw the plume perimeter on the map from the FMT information.

4.7.9 The Field Team Communicator should inform the DAC immediately of any significant changes to FMT radiological data.

4.7.10 The Field Team Communicator should periodically update FMTs on plant status and protective actions. **COMN 5405**

5 FINAL CONDITIONS

5.1 The Release has been terminated or is reduced to levels below the Emergency Action Levels (EAL) for the ALERT Emergency Classification.

5.2 All surveys and samples have been obtained as requested, properly identified, and returned to the designated location.

5.3 All the Field Monitoring Teams have returned for debriefing.

5.4 Emergency Kits have been inventoried, restocked, and sealed in accordance with **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics Technical Support Emergency Equipment Kits.

5.5 All records have been collected and sent to the Emergency Preparedness Department.

6 REFERENCES

6.1 Callaway Plant Radiological Emergency Response Plan (RERP)

6.2 **APA-ZZ-00832**, Hazardous and Special Waste Management Program

6.3 **HDP-ZZ-01300**, Internal Dosimetry Program

6.4 **HTP-ZZ-04102**, Operation and Calibration of the Eberline RO-2(X) Series Ion Chamber

6.5 **HTP-ZZ-04106**, Operation of the Ludlum Model 14C

6.6 **HTP-ZZ-04108**, Operation of the Ludlum Model 3 Portable Count Rate Meter

6.7 **HTP-ZZ-04121**, Operation and Calibration of the Radeco Model AVS-28A Air Sampler

6.8 **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics Technical Support Emergency Equipment Kits

6.9 FEMA REP-2, REV.2/June 1990, Guidance on Offsite Emergency Radiation Measurements Systems, Appendix D

6.10 HPCI No. 93-005, FMT Personnel Dose Evaluation

6.11 NRC Letter to Randolph dated 20010406

7 RECORDS

7.1 QA RECORDS

Attachment 1, FMT Briefing/Debriefing (File K171.0010)

Attachment 2, FMT Radiation Survey Worksheet (File K171.0010)

Attachment 3, Environmental Collection Worksheet (File K171.0010)

7.2 COMMERCIAL RECORDS

None

FMT BRIEFING / DEBRIEFING CHECKLIST

TEAM DESIGNATOR (circle one): **BLUE** - Chemistry Vehicle (#102206)
GREEN - HPTS Vehicle (#102207)
RED - I&C Vehicle (#102004)

I. TEAM FORMATION

	Name	EID	TLD ED Y/N	Exposure Margin (mRem)	Debriefed Yes/No	Final Exposure	Dose Records Updated by DAC
Leader							☐
Driver							☐
							☐

Radioactive Release:

☐ In progress YES / NO START TIME ____:____

☐ Likely to occur YES / NO PROJECTED TIME ____:____

Release location (circle one) UNIT VENT / PORV / OTHER _____

Meteorological Data:

☐ Wind Direction (degrees) From:_____ To:_____

☐ Wind Speed (mph) _____

☐ **Keys:** (may be obtained from **OSC** or the **HPC**)

Dosimetry:

☐ Retain dosimetry (ED, if issued, and TLD) when exiting MAF

Remarks:

II. EQUIPMENT CHECKOUT COMN 42536

Field Monitoring Kits:
Kits located in CPF, whole body count room #1102
Inventory Kit (not necessary if seal is intact)

- ☐ Kit Inventory *(Sat)*

Pre-operational Check Survey Instruments:
(Procedure binder in rack mounted on outside of FMT locker)

- ☐ *Air sampler (Sat)* **HTP-ZZ-04121**
- ☐ *Count rate meter (Sat)* **HTP-ZZ-04108**
- ☐ *Ion chamber survey meter (Sat)* **HTP-ZZ-04102**
- ☐ *GM survey meter (Sat)* **HTP-ZZ-04106**

Load equipment in vehicle:

- ☐ *Immediate FMT Kit*
- ☐ *Recovery FMT Kit (located at EOF equip room if needed)*
- ☐ *Air sampler*
- ☐ *GM survey meter (14c in front seat of vehicle, with the audible indicator on and probe window open, facing up.)*
- ☐ *Ion chamber survey meter*
- ☐ *Procedures (located on side of locker)*
- ☐ *Maps*
- ☐ *Emergency light*
- ☐ *Check source*

Other Equipment:
GPS System (Operator aid in FMT Kit).

- ☐ Check GPS operational with vehicle parked at the CPF.
  (GPS is SAT if it reads N38°45.6' to 45.8' W91°47.0' to 47.2' or See precaution concerning Plume Direction.)

Air sampler

- ☐ Prepare sample head. (Install filter and cartridge.)
- ☐ Check samplers air flow within calibrated range.

RERP Vehicle

NOTE:	The inverter switch location is identified by a label stating "Power Inverter Switch".

- ☐ DC to AC inverter operational (air sampler checked *Sat*)
- ☐ Fuel greater than ½ full **CARS 199802506**

(refuel at tank located at Stores 1, Pump key on vehicle key-ring)

Remarks:

II. EQUIPMENT CHECKOUT COMN 42536 (continued)

Communication Equipment: *Radio* ☐ Switch radio to Repeater Plant 2. ☐ Contact FMT communicator for operational check of the radio. (Maintain ED away from antenna or coaxial cable. Notify DAC if ED interference is observed during Radio Test.) *(Sat)* *Cellular Phone* ☐ Contact FMT communicator for operational check of the phone. FMT communicator should also contact FMT to verify phone is operational and phone number is correct. *(Sat)*	

LOCATION	TELEPHONE NUMBER
FMT Communicator EOF	(573) 676-4924
Backup EOF	(573) 526-9165
HP Coordinator TSC	(573) 676-8711
DAC EOF	(573) 676-4999 / 4907
BLUE FMT (Chemistry Veh #102206)	(573) 220-0173
GREEN FMT (HPTS Veh #102207)	(573) 220-0628
RED FMT (I&C Veh #102004)	(573) 220-2507

III. BRIEFING AND DISPATCH

Contact FMT Communicator:	**Remarks**
☐ Inform FMT communicator, FMT equipment loaded and the team is ready to be briefed and dispatched. Brief (minimum requirements): ☐ Team designator (Identified at top of page 1) ☐ Meteorological updates (Section I data) ☐ Status of any releases in progress or possible release ☐ Survey and sample locations ☐ Review of Section IV Precautions by the FMT ☐ Potassium Iodide recommendations (**HDP-ZZ-01300**, Attachment 1) Recommended (circle one) YES / NO ☐ You should not take KI if you are allergic to iodine.	

IV. PRECAUTIONS

	Remarks
☐ Maintain communications with the EOF using Repeater Plant 2. If radio communications are lost or intermittent, use the cellular phone. If communications cannot be established through alternate radio channels or cellular phone, return to the appropriate facility (EOF, BEOF, or Callaway Plant) and contact the DAC.	

❑ If the Backup EOF is being used for Field Monitoring Team direction, the cellular phones should be used for primary communications. Backup communications should be performed using Repeater Plant 2.	
❑ In the event the Plume is passing overhead during the Operational Check of the GPS units, the units will be considered Operationally SAT, if the GPS MAP 162 indicates 2D or 3D navigation or the GPS 12/12XL automatically changes to the Position Page. Sufficient time must be allowed for the units to acquire the appropriate number of satellites needed for navigation.	
❑ Minimize the time in the plume. Perform all sample analysis, calculations, etc., outside the plume location. *CAUTION*: If Model 14C Reading exceeds 1 R/hr, Leave the area and contact the DAC for further instructions.	
❑ Ventilation from outside sources should be minimized upon entry in the plume. Place vehicle ventilation in recirculation (depress MAX button, REC will light on your display) or off (for vehicles without A/C). Ensure windows are closed. *CAUTION*: Vehicle air filters may become highly contaminated and a source of radiation exposure after traversing the plume.	
❑ No eating, drinking, or smoking is allowed.	

V. DEBRIEFING

FMT Status: ☐ Team(circle one) Secured / relieved *NOTE*: Access to the EOF should be through the Decontamination Area. ☐ Date and Time _____ ____:____ Problems or Hazards encountered _____ _____ _____	**Remarks**
Surveys: ☐ Survey Worksheet complete and submitted to DAC	
Dosimetry: ☐ Exposure records updated by DAC (complete section I) **CARS 199802498**	
Internal Exposure: ☐ Probable internal exposure YES / NO ☐ Plume Immersion YES / NO If yes, schedule whole body count location:_____time:_____:_____	

Debriefing by_____
(DAC or designee)

FMT Radiation Survey Worksheet

Team Designator:
Blue Green Red

Weather Conditions:
Clear Rain Snow Sleet Mist

Date:

Dose Data

Member EID	ED Dose (mrem)	Time

Instrument ID's

CRM- -HP
GMI- -HP
ION- -HP
LAS- -HP

Notes:

- RO-XX values are < 0.5 mR/hr, report as < 0.5 mR/hr.
- If a Noble Gas sample is requested, connect marinelli at the sampler exhaust
- Ion Chamber instrument readings are closed window, waist level, unless otherwise noted
- Air samples are approximately 10 ft^3 unless directed by DAC based on keeping exposures ALARA (15 seconds min.) **CARS 199802505**
- Prior to counting, purge the Particulate and Iodine sample by running the sampler for approximately 1-min. to remove noble gas interference.

Plume Location / Plume Centerline Survey Information

Time	Latitude (N) 38° xx . xxx	Longitude (W) 91° xx . xxx	14 C mrem/hr open window	* P / C / L	RO-xx Gamma mrem/hr closed window	Bkgd (cpm)	Iodine Gross (cpm)	Particulate Gross (cpm)	Sample duration (min)	Flowrate (cfm)

* P=Perimeter, C=Centerline, L=Leading Edge. Otherwise, leave blank

File K171.0010

ATTACHMENT 2
CA-#246

Environmental Collection Worksheet						
Sample Date	Sample Time	Sample Size	Sample Type	Sample Location		Radiation (mR/hr)
				Latitude (N) 38° xx . xxx	Longitude (W) 91° xx . xxx	

Collected by: _____

Comments: _____

_____

_____

_____

_____

_____

_____

_____

EIP-ZZ-00225
Revision 007
October 26, 2001

CALLAWAY PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EIP-ZZ-00225

REENTRY

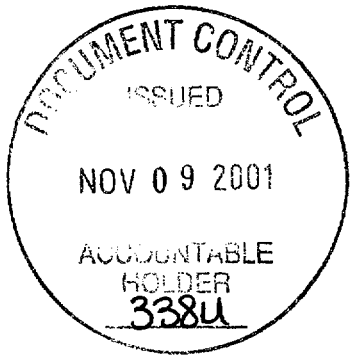
RESPONSIBLE DEPARTMENT **Emergency Preparedness**

PROCEDURE OWNER **W. R. Bevard**

WRITTEN BY **W. R. Bevard**

PREPARED BY **W. R. Bevard**

APPROVED BY Warren A. Witt



DATE ISSUED 11-9-01

This procedure contains the following:

Pages	1	through	4
Attachments	1	through	1
Tables		through	
Figures		through	
Appendices		through	
Checkoff Lists		through	

This procedure has _____ checkoff list(s) maintained in the mainframe computer.

Conversion of commitments to TRS reference/hidden text completed by Revision Number:

Non-T/S Commitments 006

TABLE OF CONTENTS

REENTRY

1 PURPOSE AND SCOPE

1.1 This procedure establishes guidelines for personnel reentry to on-site areas that have been evacuated during a Radiological Emergency.

NOTE:	Reentry to off-site areas is controlled by county commissioners using specific county emergency implementing procedures.

2 RESPONSIBILITIES

2.1 EMERGENCY COORDINATOR OR PLANT MANAGER

The Emergency Coordinator or Plant Manager, if on-site emergency organization is no longer in place, is responsible for evaluating and establishing reentry requirements to on-site areas affected by the emergency. **COMN 42501**

2.2 RECOVERY MANAGER

The recovery manager evaluates and approves the requirements prior to allowing reentry of personnel to on-site areas affected by the emergency. **COMN 42501**

2.3 HEALTH PHYSICS COORDINATOR OR SUPERINTENDENT, HEALTH PHYSICS

The Health Physics Coordinator or Superintendent, Health Physics, if on-site emergency organization is no longer in place, is responsible for evaluating radiological conditions and making recommendations used by the Emergency Coordinator/Plant Manager in establishing on-site reentry requirements.

2.4 SECURITY COORDINATOR OR SHIFT SECURITY SUPERVISOR

The Security Coordinator or Shift Security Supervisor, if on-site emergency organization is no longer in place, is responsible for coordinating controls for reentry.

3 PROCEDURE

3.1 EVALUATION

3.1.1 When reentry into an evacuated on-site area is required and requested, the Health Physics Coordinator/Superintendent, Health Physics investigates and evaluates the following:

3.1.1.1 Latest radiological conditions as indicated on installed Radiation Monitors.

3.1.1.2 Radiological survey data for the area to be reentered.

3.1.1.3 Radiological protective requirements for the area to be reentered.

3.1.2 The Emergency Coordinator/Plant Manager should evaluate all other hazards that could be present in the area such as:

a. Temperature

b. Toxic Chemicals

c. Smoke

d. Steam

e. Electrical

f. Flooding

g. The potential for future hazards to occur after reentry is allowed

3.1.3 Utilizing input from the Health Physics Coordinator/ Superintendent, Health Physics, the Emergency Coordinator/Plant Manager evaluates all hazards involved and decides what controls need to be established for reentry, such as:

3.1.3.1 Training

3.1.3.2 Briefings

3.1.3.3 Barriers and signs

3.1.3.4 Departments or work groups to be allowed reentry

3.1.3.5 To allow general or specific area reentry

3.2 ESTABLISHING REENTRY

3.2.1 In the event radiological conditions prevent normal access to areas, personnel will be informed of necessary equipment and pertinent information to ensure personnel safety and limit personnel exposure. If extensive training is required prior to reentry, personnel will receive formal training. **COMN 42499**

3.2.2 The Emergency Coordinator/Plant Manager:

3.2.2.1 Establishes controls identified in Section 3.1.

3.2.2.2 Instructs the Security Coordinator/Shift Security Supervisor as to specific areas reentry will be allowed and controls set forth for those areas.

3.2.2.3 Discusses the controls for reentry with the Recovery Manager.

3.2.3 The Recovery Manager evaluates and approves the requirements prior to allowing reentry.

3.2.4 The Emergency Coordinator/Plant Manager then:

3.2.4.1 Directs Security Coordinator/Shift Security Supervisor to restore access, and maintain controls, to specified areas.

3.2.4.2 Completes Attachment 1 REENTRY and then make the announcement on the Gai-tronics.

3.2.4.3 Periodically completes Attachment 1 UPDATE and make announcements updating the status of reentry for specific areas.

4 CLOSEOUT

4.1 When an area has been returned to a normal access condition for entry this procedure may be exited for that area

5 REFERENCES

5.1 Callaway Plant Radiological Emergency Response Plan (RERP).

5.2 NUREG-0654, FEMA-REP-1, Rev. 1.

6 RECORDS

None

REENTRY

(Repeat all announcements)

ATTENTION ALL PERSONNEL ATTENTION ALL PERSONNEL

REENTRY HAS BEEN ESTABLISHED TO _____(AREAS). THE FOLLOWING CONTROLS ARE IN PLACE _____

_____

_____

_____

_____ _____.

NOTE:	Give stipulations such as postings, barriers, or personnel to contact to reenter specified areas.

UPDATE

ATTENTION ALL PERSONNEL ATTENTION ALL PERSONNEL

THE STATUS OF REENTRY TO _____ (AREAS) IS AS FOLLOWS:

_____

_____

_____

_____

_____ _____.