Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

August 8, 2000
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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

STP NUCLEAR OPERATING COMPANY
Units 1 and 2
Docket Nos. STN 50-498; STN 50-499
Changes to Emergency Plan Implementing Procedure

In accordance with 10CFR50.4(b)(5) and 10CFR50, Appendix E, Section V, the STP Nuclear Operating Company hereby submits the attached revision of three (3) Emergency Plan Implementing Procedures.

If there are any questions regarding this matter, please contact Mr. Fred Puleo at (361) 972-8697 or myself at (361) 972-8053.

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Manager, Plant Protection

FJP/mk
Enclosure: Letter of Receipt
Summary of Changes
0ERP01-ZV-RE01, Recovery Operations, Revision 1
0PGP03-ZT-0139, Emergency Preparedness Training Program, Revision 6
0ERP01-ZV-TP02, Offsite Field Teams, Revision 8

A045

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Summary of Changes for
Recovery Operations
0ERP01-ZV-RE01, Rev. 0

This revision does not reduce the effectiveness nor change the intent of the procedure as described within the STPEGS Emergency Plan. Revision 1 is a General Revision that updates Revision 0, dated August 1991. All changes are considered enhancements.

These enhancements are:

1. Changed Procedure usage to N/A to comply with procedure 0PGP05-ZV-0004, Emergency Plan Implementing Procedure Users Guide.
2. Conversion to Microsoft Word.
3. Rewording of the Recovery definition to match Recovery as defined in 0ERP01-ZV-IN01, Emergency Classification as per Condition Report 97-19089-2.
4. Added reference to 0PGP05-ZV-0004, Emergency Plan Implementing Procedure Users Guide.

Other changes are as follows:

Change No.	Change to Revision 0	Reason
1.	Step 2.1 recovery criteria revised to match criteria given in Emergency Plan.	Consistency
2.	Rewrite of section 5.2 "Establish a recovery organization". Based on comments from the Dec. 8, 1999 Recovery Workshop, participants wanted an organization chart (provided as Attachment 1) and a brief description of responsibilities. Also, participants wanted the procedure to focus on the E-Plan requirements, vs. restart ("outage") activities.	Recovery workshop participant suggestions. Incorporate detail found in section L "Recovery and Re-entry" of the Emergency Plan.
3.	Added new 5.3 – announcement of transition to Recovery Phase.	Not specified in current revision.
4.	Section 5.5 (current 5.4) Changed "Any activity which could result in a radiological release to the environment exceeding Technical Specifications . . ." to " . . exceeding Unusual Event emergency action levels . . ." Changed (in same sentence as above) ". . .shall be reviewed and approved by the State of Texas . ." to ". . . shall be provided to the State of Texas . . ."	The Unusual Event emergency action level for radiological release is more widely understood in emergency planning. Safe operation of the Units is non-delegable to the licensee. Approval wording is inappropriate and is deleted.

Summary of Changes for
Recovery Operations
0ERP01-ZV-RE01, Rev. 0

Change No.	Change to Revision 0	Reason
5.	Added new 5.6 – termination from recovery phase	Not specified in current revision
6.	Added new Addendum 1.	Request of reviewers.

-END-

Summary of Changes for
Emergency Preparedness Training Program
0PGP03-ZT-0139, Rev. 6

This revision completes the actions of Condition Report 99-2716 (resultant from Quality Audit 98-14805), i.e., to add the provision that an Alarm Station Operator is exempt from course EPT-030, Quintron Console Operations and to add the new training requirements for the Duty Maintenance Supervisor and Chemical Analysis Technician. These changes support Revision 19 to the STPEGS Emergency Plan regarding fulfilling the Onsite Communicator and Radiation Protection protective measures positions.

Change No.	Change to Revision 5	Reason
1.	Section 2.1 - Added definition of annually.	Annually is defined in section 4.4.1. Input from review and comment process requested definition added to this section also.
2.	Section 2.6 – changed "Subject Matter Expert: As defined" to "Subject Matter Expert: As referenced".	Procedure 0PGP03-ZA-0119 no longer defines, but does reference Subject Matter Experts.
3.	Section 3.1 – changed "Manager, Emergency Response" to "Supervisor, Emergency Response"	Agreement with Emergency Plan
4.	Section 3.1.1 – deleted listing of courses that the Supervisor, Emergency Response provides development and training for.	Redundant to section 3.2.1
5.	Added 3.1.5 Severe Accident Management Guidelines Training as a responsibility of the Supervisor, Emergency Response	Current business practice
6.	3.2 Changed Nuclear Training Department to Training Department	Current organizational title
7.	3.2.1.5 Added course EPT075 as a responsibility of Training Department	Current business practice
8.	3.2.6 Changed "NTD" to "Training Department". Changed "Training Requests" to "Condition Reports".	Current organizational title Current business practice
9.	3.2.8 Changed "Notifying the Manager, Emergency Response" to "Notifying the Supervisor, Emergency Response".	Agreement with Emergency Plan.
10.	3.4 Changed "MIC Director" to "JIC Director"	Agreement with Emergency Plan
11.	Added 4.4.2.5 and 4.4.2.6 to allow controllers, evaluators, coaches or mentors to	Agreement with Emergency Plan

Summary of Changes for
Emergency Preparedness Training Program
0PGP03-ZT-0139, Rev. 6

Change No.	Change to Revision 5	Reason
	receive requalification credit.	
12.	4.5.2 Reworded to delete the requirement that SAMG Evaluators and Decision Makers require course SMG001 – Self Study Module.	SMG001 Self-Study Module ineffective. Necessary information incorporated into SMG002 Classroom Training. All SAMG personnel required to take SAMG Classroom Training.
13.	4.6.2 Changed to allow SMG202 Requal Training to be taken every three years vs. SMG002 Initial Training.	Refresher training is appropriate, not a repeat of the initial course.
14.	4.9.4 Changed Manager, Emergency Response to Supervisor, Emergency Response	Agreement with Emergency Plan
15.	Addendum 1 – Added course EPT075, RPT100, and Certifications 3226, 3564 and 3567. All other changes are to spell out (vs. abbreviate) positions.	New courses or certifications mentioned in procedure. Additional clarity.
16.	Addendum 2 – Deleted NTD047 as an alternate course number for FFD001 in opening paragraphs for each facility.	NTD047 course number is retired.
17.	Addendum 2 <u>Emergency Operations Facility Positions</u> a. SMG001 SAMG Self-Study module deleted as a requirement for all personnel. b. GET-III, Respirator Physical and Respirator Fit Test deleted as a requirement for Rad Van personnel. c. EPT-011 Emergency Communicator training added as a requirement for System Status Evaluator	 a. Pertinent information incorporated into SMG002 Classroom Training b. Rad Van personnel do not enter airborne contamination areas. c. System Status Evaluator provides input to Offsite Agency Notification Message Form when Alternate Emergency Operations Facility is activated

Summary of Changes for
Emergency Preparedness Training Program
0PGP03-ZT-0139, Rev. 6

Change No.	Change to Revision 5	Reason
18.	Addendum 2, Technical Support Center Positions, SMG001 SAMG Self-Study module deleted as a requirement for all personnel.	Pertinent information incorporated into SMG002 Classroom Training
19.	Addendum 2 Operations Support Center Positions a. EPT-444 added as a substitute course for EPT-436 for position Operations Support Center Coordinator b. Added #11, Material Handler as Operations Support Center position.	 a. Content of courses EPT-436 and 444 are identical b. Clarifies that Material Handler respirator quals are needed for Material Handler position upon activation of the Operations Support Center.
20.	Addendum 2 Control Room / Onshift Organization Positions a. Rewording of opening paragraph for clarity. Specify that operations respirator qualifications are needed only for licensed personnel, fire brigade and safe shutdown watch personnel. b. Added statement "Qualified Alarm Station Operators filling the Onsite Communicator position do not require EPT-030." c. Added statement that "IF the Duty Maintenance Supervisor does NOT have	 a. Emergency management function would be transferred to the other Unit Control Room should the affected Unit Control Room become uninhabitable. b. EPT-030 is Quintron Console Operation. Alarm Station Operators use the Quintron Console in day to day security operations. c. Current business practice. Provides scheduling flexibility and

Summary of Changes for
Emergency Preparedness Training Program
0PGP03-ZT-0139, Rev. 6

Change No.	Change to Revision 5	Reason
	course credit for EPT-075, THEN EITHER the 2nd Mechanical Maintenance OR 2nd I&C Maintenance craft person on shift SHALL have course credit for EPT-075."	maintains commitments in the Emergency Plan.
	d. Added course EPT-075 as a requirement for Duty Maintenance Supervisor.	d. Meet Emergency Plan table C-1 minimum staffing functions.
	e. New position, Chemistry Technician (RP Protective Measures). Added course RPT-100 and certifications 3564 and 3567 as a requirement for Chemistry Technician RP Protective Measures.	e. Meet Emergency Plan table C-1 minimum staffing functions.
	f. Breakout Chemistry Technician. Add cert 3226.	f. Special case of Chemistry Technician NOT filling Protective Measures position.
	g. Breakout State/County Communicator	g. Special case of Plant Operator that does not require respiratory qualification.
21.	Addendum 2, Joint Information Center, Changed Media Information Center to Joint Information Center.	Current facility name.

-END-

Summary of Changes for
Offsite Field Teams
0ERP01-ZV-TP02 Rev 8

This revision does not reduce the effectiveness nor change the intent of the procedure as described within the Emergency Plan.

- Changed Procedure usage to N/A to comply with procedure 0PGP05-ZV-0004, Emergency Plan Implementing Procedure Users Guide.

- Removed 36 BRC/State respirators w/filters.

- Revised Addendum 6 Sample Area Map, added GPS data.

- Revised Form 2, Sample Analysis Calculation Form, the formulas were not clear.

O:\PROCEDURES\APPROVED\ERP\01\0ZVRE01.01x Effective Date: 07/31/00 Print Time / Date: 8:20 AM 06/28/00	**0ERP01-ZV-RE01**	**Rev. 1** **(General)**	Page 1 of 7
Recovery Operations			
Quality	Non Safety-Related	Usage: **N/A**	Effective Date: 07/31/00

Leo Meier	N/A	N/A	Emergency Response
PREPARER	TECHNICAL	USER	COGNIZANT ORGANIZATION

Table of Contents

1.0 Purpose and Scope

1.1 This procedure provides guidance for establishing recovery operations to return the plant to a normal operating condition following a declared emergency.

1.2 This procedure implements the requirements of the South Texas Project Electric Generating Station (STPEGS) Emergency Plan specific to recovery.

2.0 Definitions

2.1 The recovery phase can be entered when all the following conditions are met:

2.1.1 The emergency conditions no longer exist and the plant is in a stable, shutdown, and safe condition.

2.1.2 The potential for uncontrolled releases of radioactive material to the environment no longer exists.

2.1.3 Major repairs, if required, have been identified in order to return the plant to operation.

2.1.4 If the event was either a Site Area Emergency or General Emergency, concurrence from the NRC, State, and County has been obtained.

3.0 Precautions and Limitations

3.1 If a Site Area or General Emergency was declared, concurrence from the NRC, State of Texas, and Matagorda County is required before declaring recovery.

4.0 Responsibilities

4.1 The Emergency Director is responsible for declaring recovery. The Emergency Director, or designee, will function as the Recovery Manager.

4.2 The Recovery Manager is responsible for implementing this procedure and returning the plant to a re-start configuration.

5.0 Procedure

5.1 Establish a prioritized list of activities and tasks.

5.1.1 The Deputy EOF Director will collect completed 0ERP01-ZV-RE02-01, "Corrective Action Items" from the EOF organization and prioritize the lists.

5.1.2 The Assistant TSC Manager will collect completed 0ERP01-ZV-RE02-01, "Corrective Actions Items Lists" from the TSC, OSC, and Control Room and prioritize the lists.

5.1.3 Conduct a meeting with key personnel from the EOF and TSC to review the lists and determine the necessary work scopes needed to return the plant to normal operation.

NOTE

Positions listed below are provided as examples of functional responsibilities. Positions do not have to be filled with ERO position incumbents.

5.2 Establish a recovery organization.

5.2.1 The recovery organization should be established based on an outage organization concept. The key elements of the recovery organization should be based on the necessary work scopes to be performed.

5.2.2 Addendum 1 "Recovery Organization" may be used as a framework for the recovery organization.

5.2.2.1 The Recovery Manager is responsible for implementing this procedure and returning the plant to a re-start configuration.

5.2.2.2 The Licensing Director shall maintain the STPNOC/NRC interface and facilitate information requests by NRC.

5.2.2.3 STPNOC Legal Counsel shall report to the Recovery Manager and perform duties as assigned.

5.2.2.4 The Restart Director shall assemble and manage the forced outage team. The restart organization should resemble an STPNOC normal outage organization and focus on returning the units to ready-for-restart status.

5.2.2.5 The Support Organization Director shall manage the various offsite liaisons and facilitate requests for information from offsite entities.

5.2.2.6 The JIC Director shall manage the STPNOC/media interface and facilitate requests for information from the media.

5.2.2.7 The Technical Manager shall be responsible for:

- Logical evaluation of the cause and effect of the emergency;
- Assisting the Restart Director in planning necessary activities to place the station in a configuration ready for restart and in the development of radiological controls for re-entry into affected areas.

5.2.2.8 The Radiological Director shall be responsible for:

- Analysis of the exposures to station personnel;
- Analysis of effluent and environmental data to quantify offsite consequences, if any; and
- Assisting the Recovery Manager in assembly of the Recovery Organization needed to expediently implement recovery.

5.2.3 Personnel in the Emergency Response Organization that are not assigned to the recovery organization will be released to their normal job functions. Additional personnel outside the Emergency Response Organization will supplement the recovery organization, as needed.

5.2.4 The NRC, State of Texas, and Matagorda County shall be informed of the formation of the recovery organization.

5.3 WHEN requirements for entry into recovery phase are met, THEN announce transition to recovery phase.

5.3.1 Issue an Offsite Agency Notification Message Form informing offsite of entry into recovery.

5.3.2 Any recommendations to relax protective measures for the public shall be reviewed and approved by the State of Texas, Matagorda County, and the NRC.

5.4 Establish procedures for the recovery effort.

5.4.1 All normal plant procedures will be followed unless specifically superseded by recovery procedures. Recovery procedures are temporary procedures and will be deleted upon completion of the recovery effort.

5.4.2 All recovery procedures will be developed, approved, and implemented in accordance with 0PGP03-ZA-0002, "Plant Procedures". Special procedure approval processes can be established by the Recovery Manager with approval of the Plant Operations Review Committee (PORC).

5.4.3 If requested by the NRC, all recovery procedures will be reviewed and approved by the NRC prior to implementation.

5.5 Initiate Special Radiological Considerations

5.5.1 A survey of the plant shall be conducted to determine special radiological hazards and the extent of contamination problems. Special re-entry requirements into the plant and plant areas shall be determined and implemented prior to re-entry.

5.5.2 A description of any activity which could result in a radiological release to the environment exceeding Unusual Event emergency action levels shall be provided to the State of Texas, Matagorda County, and the NRC.

5.5.3 Conduct a detailed analysis of exposures to station personnel.

5.5.4 Assistance in determining the extent of the radiological release and the estimated total population exposure shall be offered to the State of Texas and Matagorda County.

5.6 The Recovery Phase may be terminated when any of the following items are met:

5.6.1 The emergency condition no longer exists and the plant is ready to return to normal operations, OR

5.6.2 Repair activities are minor, the reactor is subcritical, and the plant is in a stable shutdown mode (at least Mode 3).

5.7 Issue an Offsite Agency Notification Message Form informing offsite agencies of event termination.

6.0 References

6.1 STPEGS Emergency Plan

6.2 0PGP03-ZA-0002, Plant Procedures

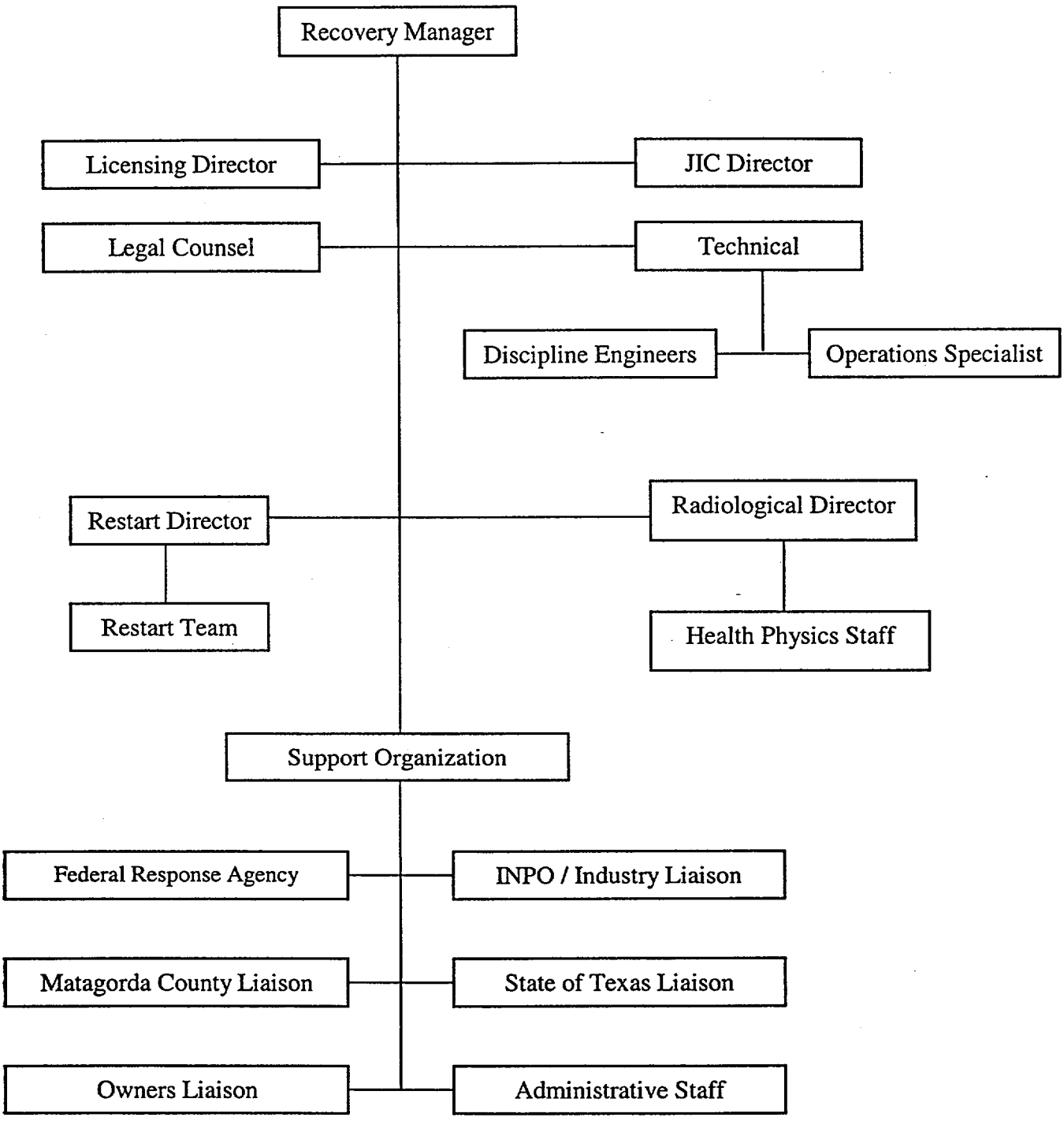
6.3 0PGP05-ZV-0004, Emergency Plan Implementing Procedure Users Guide

6.4 0ERP01-ZV-IN02, Notifications to Offsite Agencies

6.5 0ERP01-ZV-RE02, Documentation

7.0 Support Documents

Addendum 1- Recovery Organization


Recovery Manager
Licensing Director
JIC Director
Legal Counsel
Technical
Discipline Engineers
Operations Specialist
Restart Director
Radiological Director
Restart Team
Health Physics Staff
Support Organization
Federal Response Agency
INPO / Industry Liaison
Matagorda County Liaison
State of Texas Liaison
Owners Liaison
Administrative Staff

O:\PROCEDURES\APPROVED\Pgp\03\0ZT0139.06X Effective Date: 07/11/00 Print Time / Date: 3:42 PM 07/06/00	0PGP03-ZT-0139	Rev. 6	Page 1 of 21
Emergency Preparedness Training Program			
Quality	Non Safety-Related	Usage: **Available**	Effective Date: 07/11/00

R. L. Meier	N/A	N/A	Emergency Response Division
PREPARER	TECHNICAL	USER	COGNIZANT ORGANIZATION

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1.0 Purpose and Scope

1.1 Purpose

This procedure establishes the training and qualification requirements associated with the Emergency Response Organization at the South Texas Project Electric Generating Station (STPEGS).

1.2 Scope

This procedure applies to training and qualification activities conducted for onsite and offsite personnel assigned to the Emergency Response Organization (ERO). The associated onsite position titles appear in Addendum 2 and the offsite positions in Form 1.

2.0 Definitions

2.1 ANNUALLY: 12 $\pm$ 3 months

2.2 COMBINED FUNCTIONAL DRILL: As defined in Ref. 5.14, Emergency Response Exercises and Drills.

2.3 EMERGENCY PREPAREDNESS TRAINING WORKSHOP: Functional group training provided to ERO members to enhance skills.

2.4 OFFSITE: Outside the confines of the Owner Controlled Area boundaries.

2.5 ONSITE: Within the confines of the Owner Controlled Area boundaries.

2.6 SEVERE ACCIDENT, EVALUATOR, DECISION MAKER, and IMPLEMENTOR: As defined in Ref. 5.16, Severe Accident Management.

2.7 SUBJECT MATTER EXPERT: As referenced in Ref. 5.8, Management Oversight of Training Programs.

2.8 TABLE-TOP DRILL: A walkthrough training drill conducted for one or more Emergency Response Facilities or designated functional groups to enhance teamwork and individual skills.

3.0 Responsibilities

3.1 The Supervisor, Emergency Response Division, has the overall responsibility for the implementation and management of the STPEGS emergency preparedness program. The following activities are done under the oversight of the Supervisor, Emergency Response Division:

3.1.1 Provide development and training for all Emergency Preparedness Training requirements; except those courses given in 3.2.1 below.

3.1.2 Scheduling ERO training activities and notifying the targeted audience/students.

3.1.3 Maintain management oversight of the Emergency Preparedness Training Program in accordance with 0PGP03-ZA-0119, "Management Oversight of Training Programs."

3.1.4 Activating an Emergency Preparedness Training Technical Advisory Council when necessary.

3.1.5 Severe Accident Management Guidelines training for ERO personnel.

3.2 The Manager, Training Department is responsible for supporting the STPEGS emergency preparedness program through the conduct of specialty and prerequisite onsite training programs. The following activities are done under the oversight of the Manager, Training Department:

3.2.1 Provide training and re-training (as required) for the following courses:

3.2.1.1 EPT-017 - ERFDADS (Licensed Operator Training, only)

3.2.1.2 EPT-019 - RM-21/Stampede (Dose Assessment)

3.2.1.3 EPT-031 - Offsite Field Team

3.2.1.4 EPT-060 - On-Shift Dose Assessment and PARs

3.2.1.5 EPT-075 - Duty Maintenance Supervisor Protective Actions (RP)

3.2.1.6 General Employee Training

3.2.2 Report training attendance for the above training courses when scheduled.

3.2.3 Maintain lesson plan files for the Emergency Response Division as requested.

3.2.4 Ensure availability of computerized training databases.

3.2.5 Provide classroom space for scheduled training provided by the Emergency Response Division.

3.2.6 Provide appropriate Training Department personnel for drill scenario development, drill observers, drill controllers, etc. when scheduled through the yearly training schedule or through Condition Reports.

3.2.7 Facilitate drills and exercises through the use of the simulator.

3.2.8 Notifying the Supervisor, Emergency Response, when a student fails an Emergency Preparedness Training course presented by the Training Department.

3.3 The Manager, Plant Protection Department is responsible for:

3.3.1 Providing required emergency preparedness initial and re-training courses to the plant security force.

3.3.2 Providing an instructor for EPT-040 Safeguards Contingency Events when required.

3.3.3 Ensuring Emergency Medical Technicians (EMTs) maintain necessary qualifications for EMT status.

3.3.4 Ensuring Emergency Care Attendants (ECA's) maintain necessary qualifications for ECA status.

3.4 Emergency Response Facility leaders (OSC Coordinator, TSC Manager, EOF Director, JIC Director) are responsible for ensuring their Emergency Response Organization Facility personnel attend scheduled Emergency Preparedness Training.

4.0 Procedure

4.1 Selection for Emergency Preparedness Training Program

4.1.1 Initial assignment of onsite members of the ERO shall be made in accordance with Ref. 5.15.

4.1.2 Offsite personnel assignments are in accordance with their respective titles as members of local and state government, law enforcement, medical, and mutual aid.

4.2 General Employee Training

4.2.1 Personnel badged for unescorted access to the Protected Area shall receive training in emergency preparedness as part of the General Employee Training Program described in Ref. 5.13.

4.3 Onsite Emergency Preparedness Initial Training

NOTE

Addendum 4, "Substitution/History" is provided as an aid to audit personnel to provide background on the Emergency Preparedness Training Program.

4.3.1 ERO position candidates, prior to assignment to an Emergency Response Organization position, shall complete initial training indicated for their respective position listed in Addendum 2.

4.3.2 Emergency Preparedness Training Program lesson plans are developed using applicable guidance from the systematic approach to training process.

4.3.3 Training objectives shall be used to develop evaluation items for written and performance evaluations. Ref. 5.9 may be used as guidance.

4.4 Onsite Annual Retraining

Each ERO member shall:

4.4.1 Maintain GET and FFD requirements per Addendum 2 AND,

4.4.1.1 Annually (12 ± 3 months), complete classroom refresher training on courses identified in Addendum 1 as requiring annual requalification and pass a comprehensive written examination, (EPT 20X, or 21X) OR

NOTE

Except as noted in 4.4.3 and 4.4.4, EPT-250 Requal credit is credit for all annual Emergency Preparedness Training requirements. For example, if a Dose Assessment Specialist has an EPT-250 credit, then that individual is current on all items for his position as given in Addendum 2.

4.4.1.2 Annually (12 ± 3 months), receive EPT-250 requalification credit. Criteria for awarding EPT-250 requalification are described in Section 4.4.2.

4.4.2 EPT-250 credit may be awarded when any of the following conditions are met:

4.4.2.1 An ERO member, during a Combined Functional Drill, table-top or functional group workshop, *participates as a player in their position with their team.* Included are personnel who participate in a drill conducted in accordance with 0PGP03-ZF-0002, "Fire Brigade Drills." Any performance errors are corrected with on the spot correction (as appropriate) from either a controller or instructor.

4.4.2.2 An ERO member, during a Combined Functional Drill, table-top or functional group workshop, *participates as a player in their position, with a different team than the member is assigned,* AND the member has notified a drill controller or instructor. This notification will prevent the members name from being deleted from the attendance record. Any performance errors are corrected with on the spot correction (as appropriate) from either a controller or instructor.

4.4.2.3 An ERO member, during a Combined Functional Drill, table-top or functional group workshop, *observes their counterpart in performance of position duties, receives turnover and then participates as a player* under the tutelage of the counterpart AND the member has notified a drill controller or instructor. This notification will prevent the members name from being deleted from the attendance record. Any performance errors are corrected with on the spot correction (as appropriate) from either a controller or instructor.

4.4.2.4 An ERO member, during a Combined Functional Drill, table-top or functional group workshop, observes an ERO member in performance of position duties which are similar to their own (e.g., EOF Radiological Director with the TSC Radiological Manager) receives turnover and then participates as a player under tutelage AND the member has received prior approval from the Supervisor, Emergency Response AND has notified a drill controller or instructor. Any performance errors are corrected with on the spot correction (as appropriate) from either a controller or instructor.

4.4.2.5 IF an ERO member is controlling, evaluating, coaching or mentoring his/her position during a drill conducted in accordance with Ref. 5.14, Emergency Response Exercises and Drills, THEN the individual may receive requalification credit.

4.4.3 Personnel filling the position of Acting Radiological Manager shall receive dose assessment training annually.

4.4.3.1 Annual requalification credit for on-shift dose assessment may be awarded to an individual who has participated as the Acting Radiological Manager during Control Room simulator drills which encompass on-shift prompt dose assessment.

4.4.4 Personnel filling the position of Control Room State/County Communicator (i.e. Plant Operator) shall receive offsite notification training annually (EPT-221, Control Room Emergency Communicator Requalification).

4.4.5 EPT-350, "Severe Accident Management Requalification," shall be awarded to the participants of a drill in which entry into the Severe Accident Management Guidelines is an objective.

4.5 Severe Accident Management Guidelines (SAMG) Initial Training

4.5.1 Implementor, Evaluator, and Decision Maker candidates shall complete the initial training indicated in Addendum 2 for their Emergency Response Organization position (course numbers EPT-001 through EPT-099) prior to assuming shift or prior to placement on the Emergency Response Organization Roster.

4.5.2 In addition to the initial Emergency Response Organization training requirements indicated above, Implementors, Decision Makers and Evaluators shall complete SMG002, "Severe Accident Management Guidelines Classroom Training".

4.5.2.1 Candidates shall complete SMG-002, "Severe Accident Management Guidelines Classroom Training" prior to assuming shift or prior to placement on the Emergency Response Organization roster.

4.6 Severe Accident Management Guidelines (SAMG) Continuing Training

4.6.1 Each Implementor, Evaluator and Decision Maker shall participate in a Combined Functional Drill, table-top or functional group workshop specifically addressing SAMG implementation every three years. Drills will be developed and conducted in accordance with 0PGP05-ZV-0001, "Emergency Response Exercise and Drills."

4.6.2 If the requirements of 4.6.1 can not be met, then each Implementor, Evaluator and Decision Maker shall complete SMG-202, "Severe Accident Management Guidelines Classroom Requalification Training" every three years.

4.7 Offsite Emergency Preparedness Training and Retraining

4.7.1 Training for hospital personnel, ambulance/rescue, police and fire departments shall include the procedures for notification, basic radiation protection, and their expected roles. For those local service support organizations who will enter the site, training shall also include site access procedures and the identity (by position and title) of the individual in the onsite emergency organization who will control the organization's support activities.

4.7.2 Initial training and retraining shall be offered and/or conducted for personnel with emergency responsibilities at least annually and at times as actual response, drill and exercise critiques may indicate.

4.7.3 Training and annual retraining shall be scheduled and tracked each calendar year, using a method similar to the information provided as Form 1. Variations to training schedules are permissible with the approval of the Supervisor, Emegency Response.

4.8 Additional Training (SPR 933335)

4.8.1 Additional training may be required (e.g. as a result of an identified weakness during a drill) in addition to the training identified on the Master Integrated Training Schedule. ERO personnel shall be notified by either their facility leader, supervisor, or by the Emergency Response Division and scheduled for training.

4.8.2 ERO personnel who miss scheduled training shall contact the Emergency Response Division to obtain a schedule for make-up training. The schedule should be provided by either their facility leader or by the Emergency Response Division.

4.8.3 Schedules for training should provide a minimum of two working weeks advance notice for those personnel who are to receive the training.

4.9 Onsite Trainee Evaluation

4.9.1 Evaluation criteria for written and practical examinations shall be based on objectives.

4.9.2 Successful completion of initial and classroom requalification training requires a grade of at least 70% on written examinations.

4.9.3 Examination failures shall be cause for removal from the ERO Roster until counseling, remediation and successful reexamination can be accomplished.

4.9.4 Examination failures shall be reported by the instructor to the Supervisor, Emergency Response.

4.10 Instructor Qualification

4.10.1 Instructors who present Emergency Preparedness Training courses which include a formal examination shall be certified in accordance with Ref. 5.12.

4.10.2 Subject Matter Experts, that have been approved by the Supervisor, Emergency Response, may be used to conduct workshops or tabletop drills.

4.11 Drill and Exercise Controllers and Evaluators

4.11.1 Drill and Exercise Instructors, Controllers and Evaluators for Levels 1, 2, or 3 drills/exercises shall be qualified in accordance with Ref. 5.14.

4.12 All training, including exercises, shall provide for formal critiques in order to identify weak or deficient areas that need correction. Recurring courses (e.g. EPT-203) shall be critiqued quarterly.

4.12.1 For classroom training, this may be accomplished in accordance with 0PGP03-ZA-0123, Implementation of Training Programs.

5.0 References

5.1 10CFR50, Appendix E

5.2 ANSI/ANS 3.7.3, 1979, Radiological Emergency Response Exercises for Nuclear Power Plants

5.3 American Nuclear Insurers Mutual Atomic Energy Liability Underwriters Inspection Criteria section 2.12

5.4 NRC TI 2515/55, Emergency Response Implementation Appraisal Program

5.5 NUREG 0654/FEMA REP-1; Section 0, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Response in Support of Nuclear Power Plants

5.6 INPO Good Practice EP-801 (Rev-01), April 1991, (INPO 85-014, Rev-01)

5.7 STPEGS Emergency Plan, Section M

5.8 0PGP03-ZA-0119, Management Oversight of Training Programs

5.9 0PGP03-ZA-0121, Design of Training Programs

5.10 0PGP03-ZA-0123, Implementation of Training Programs

5.11 0PGP03-ZF-0002, Fire Brigade Drills

5.12 0PGP03-ZT-0130, Instructor Training and Qualification

5.13 0PGP03-ZT-0133, General Employee Training Program

5.14 0PGP05-ZV-0001, Emergency Response Exercise and Drills

5.15 0PGP05-ZV-0003, Emergency Response Organization

5.16 0ERP01-ZV-TP03, Severe Accident Management

6.0 Documentation

6.1 Completed ERO training documentation shall be delivered to Records Management for Training Records Data System data entry and RMS receiving.

7.0 Support Documents

7.1 Addendum 1 - Emergency Preparedness Training and Retraining Course Numbers

7.2 Addendum 2 - Station Integrated Position Training Matrix

7.3 Addendum 3 - Offsite Emergency Preparedness Course Numbers

7.4 Addendum 4 - Substitution/History

7.5 Form 1 - Offsite Training Matrix Schedule (Typical)

NOTE: Requalification Course numbers are 200 series.
*If EPT-250 is not current, then these courses require annual re-training.

EPT-001	Emergency Direction *
EPT-003	Emergency Support *
EPT-011	Emergency Communicator *
EPT-017	ERFDADS
EPT-019	RM-21/STAMPEDE (Dose Assessment) *
EPT-030	Quintron Console
EPT-031	Offsite Field Team
EPT-040	Safeguards Contingency Events
EPT-060	On-Shift Dose Assessment and PARs
EPT-075	Duty Maintenance Supervisor Protective Actions (RP)
EPT-201	Emergency Direction Requalification (Classroom)
EPT-203	Emergency Support Requalification (Classroom)
EPT-209	E-Plan Retraining/Security
EPT-211	Emergency Communicator Requalification (Classroom)
EPT-219	RM21/STAMPEDE (Dose Assessment) Requalification (Classroom)
EPT 221	Control Room Emergency Communicator Requalification
EPT-250	ERO Annual Re-training (See Section 4.4)
EPT-260	On-Shift Dose Assessment and PARs Requalification
EPT-312	Controller/Evaluator Training
EPT-350	Severe Accident Management Requalification
	NOTE: *400 series courses are position specific Read and Sign Courses (R/S)*
EPT-401	EOF Director R/S
EPT-402	Deputy EOF Director R/S
EPT-403	Owners Liaison R/S
EPT-404	Radiological Director R/S
	Assistant Radiological Director R/S
EPT-405	Procurement/Resources Supervisor R/S
EPT-406	Offsite Field Team Supervisor R/S
EPT 407	Dose Assessment Specialist R/S
	Assistant Dose Assessment Specialist R/S
EPT-408	Support Organization Director R/S
EPT-409	Technical Director R/S
EPT-410	System Status Evaluator R/S
EPT-411	Engineering Assistant R/S
EPT-412	Records Supervisor R/S
EPT-413	Communications System Supervisor R/S
EPT-414	Offsite Agency Communicator R/S
EPT-415	Matagorda County EOC Liaison R/S
EPT-416	State of Texas EOC Liaison R/S
EPT-417	Federal Response Agency Liaison R/S

EPT-418	INPO/Industry Liaison R/S
EPT-419	Support Orientation Coordinator R/S
EPT-420	Licensing Director R/S
	Assistant Licensing Director R/S
EPT-421	Site Public Affairs Coordinator R/S
	Site Public Affairs Specialist R/S
EPT-422	Materials Engineer R/S
EPT-423	Assistant Support Organization Director R/S
EPT-424	TSC Manager R/S
EPT-425	Assistant TSC Manager R/S
EPT-426	Operations Manager R/S
	Assistant Operations Manager R/S
EPT-427	Radiological Manager R/S
	Assistant Rad Manager R/S
EPT-428	Chemical/Radiochemical Mgr. R/S
EPT-429	Maintenance Manager R/S
EPT-430	Technical Manager R/S
EPT-431	Engineering Supervisor R/S
EPT-432	Security Manager R/S
EPT-433	Security Supervisor R/S
EPT-434	Administrative Manager R/S
	Assistant Administrative Manager R/S
EPT-435	OSC Coordinator R/S
EPT-436	Assistant OSC Coordinator R/S
EPT-437	Assistant Radiological Coordinator R/S
EPT-438	Security Coordinator R/S
EPT-439	Materials Handler R/S
EPT-440	Operations Support Center Discipline Leads
	Plant Operations Discipline Lead R/S
	Chemistry Discipline Lead R/S
	Mechanical Maintenance Discipline Lead R/S
	I&C Discipline Lead R/S
EPT-441	Shift Supervisor/Emergency Director R/S
EPT-442	Security Force Supervisor/Acting Security Manager R/S
EPT-443	OSC Radiological Coordinator/Acting Radiological Manager R/S
EPT-444	Duty Maintenance Supervisor/Acting OSC Coordinator R/S
EPT-445	Company Spokesperson R/S
EPT-4XX	Emergency Preparedness Training "Read and Sign" Program
EPT-5XX	Emergency Preparedness Workshop
RPT-100	Introductory Health Physics Course
SMG-002	Severe Accident Management Guidelines Classroom Training
SMG-202	Severe Accident Management Guidelines Classroom Requalification Training

Certification 3226, Post Accident Sampling
Certification 3564, Basic Surveys
Certification 3567, Instruments
Certification 4398, Emergency Care Attendant
Certification 4600, Emergency Medical Technician

EMERGENCY OPERATIONS FACILITY POSITIONS

All EOF positions require GET-I, and Fitness For Duty FFD-001. Personnel currently or previously licensed at STP or have completed STP SRO Management Certification do not require EPT-017. Personnel who are required to be respirator qualified shall, if necessary, have corrective lenses readily available.

	POSITION	COURSE NUMBER
1.	Administrative Staff	EPT-003
2.	Area Coordinator Manager	EPT-003
3.	Assistant Dose Assessment Specialist	EPT-003, EPT-019, EPT-407
4.	Assistant Radiological Director	EPT-003, EPT-019, EPT-404
5.	Assistant Support Organization Director	EPT-003, EPT-423
6.	Assistant Licensing Director	EPT-003, EPT-420
7.	Communications System Supervisor	EPT-003, EPT-413
8.	Communications System Technician	EPT-003
9.	Contracts Specialist	EPT-003
10.	Deputy EOF Director (2)	EPT-001, EPT-011, EPT-040, EPT-402, SMG-002
11.	Dose Assessment Specialist	EPT-003, EPT-019, EPT-407
12.	ED Administrative Assistant/Logkeeper	EPT-003, EPT-011
13.	Employee Support	EPT-003
14.	Engineering Assistant	EPT-003, EPT-011, EPT-411
15.	EOF Director (2)	EPT-001, EPT-011, EPT-040, EPT-401, SMG-002
16.	Federal Response Agency Liaison	EPT-003, EPT-417
17.	INPO/Industry Liaison	EPT-003, EPT-418
18.	Licensing Director	EPT-003, EPT-420
19.	Matagorda County EOC Liaison	EPT-003, EPT-415
20.	Materials Engineer	EPT-003, EPT-422
21.	Offsite Agency Communicator	EPT-003, EPT-011, EPT-414
22.	Offsite Field Team	EPT-003, EPT-031, GET-II, GET-III, Fit Test, Respirator Physical
23.	Offsite Field Team (Driver)	EPT-003, GET-II, GET-III, Fit Test, Respirator Physical

EMERGENCY OPERATIONS FACILITY POSITIONS

All EOF positions require GET-I, and Fitness For Duty FFD-001. Personnel currently or previously licensed at STP or have completed STP SRO Management Certification do not require EPT-017. Personnel who are required to be respirator qualified shall, if necessary, have corrective lenses readily available.

	POSITION	COURSE NUMBER
24	Offsite Field Team (Rad Van)	EPT-003, GET II
24.	Offsite Field Team Supervisor	EPT-003, EPT-031, EPT-406
25.	Owners Liaison	EPT-003, EPT-403
26.	Procurement/Resources Supervisor	EPT-003, EPT-405
27.	Purchaser	EPT-003
28.	Rad Staff	EPT-003
29.	Radiological Director	EPT-003, EPT-019, EPT-011, EPT-404
30.	Reception Center Liaison	EPT-003
31.	Records Supervisor	EPT-003, EPT-412
32.	Site Public Affairs Admin. Assistant	EPT-003
33.	Site Public Affairs Coordinator	EPT-003, EPT-421
34.	Site Public Affairs Specialist	EPT-003, EPT-421
35.	State Of Texas EOC Liaison	EPT-003, EPT-416
36.	Status Board Keeper	EPT-003
37.	Support Organization Director	EPT-003, EPT-408
38.	Support Orientation Coordinator	EPT-003, EPT-419
39.	System Status Evaluator	EPT-001, EPT- 011, EPT-017, EPT-410
40.	Technical Director	EPT-001, EPT-011, EPT-409
41.	Technical Staff	EPT-001, EPT-017
42.	Telephone Operator	EPT-003

Note: 2 - SAMG Decision Maker

TECHNICAL SUPPORT CENTER POSITIONS

All TSC positions require GET-I, and Fitness for Duty FFD-001. Personnel currently or previously licensed at STP or have completed STP SRO Management Certification do not require EPT-017.

	POSITION	COURSE NUMBER
1.	Administrative Manager	EPT-003, EPT-434
2.	Administrative Staff	EPT-003
3.	Assistant Administrative Manager	EPT-003, EPT-434
4.	Assistant Operations Manager (3)	EPT-001, EPT-426, SMG-002
5.	Assistant Radiological Manager	EPT-003, EPT-019, EPT-427
6.	Assistant TSC Manager (2)	EPT-001, EPT-011, EPT-040, EPT-425, SMG-002
7.	Chemical/Radiochemical Manager	EPT-003, EPT-011, EPT-428
8.	Engineering Supervisor (3)	EPT-003, EPT-431, SMG-002
9.	Engineer - Electrical (3)	EPT-003, EPT-017, SMG-002
10.	Engineer - I&C (3)	EPT-003, EPT-017, SMG-002
11.	Engineer - Mechanical (3)	EPT-003, EPT-017, SMG-002
12.	Engineer - Nuclear (3)	EPT-001, EPT-017, SMG-002
13.	Maintenance Communicator	EPT-003
14.	Maintenance Manager	EPT-003, EPT-429
15.	Operations Communicator (1)	EPT-003, SMG-002
16.	Operations Manager (3)	EPT-001, EPT-426, SMG-002
17.	Radiological Communicator	EPT-003
18.	Radiological Manager (3)	EPT-003, EPT-019, EPT-427, SMG-002
19.	RM-11 Operator	EPT-003
20.	Security Communicator	EPT-003, EPT-030
21.	Security Manager	EPT-003, EPT-432
22.	Security Supervisor	EPT-003, EPT-433
23.	Status Board Keeper	EPT-003
24.	Technical Staff - Risk/Reliability (3)	EPT-001, SMG-002
25.	Technical Communicator	EPT-003
26.	Technical Manager (3)	EPT- 001, EPT-430, SMG-002
27.	TSC Communicator	EPT-003, EPT-011
28.	TSC Manager (2)	EPT-001, EPT-011, EPT-040, EPT-424, SMG-002

Notes: 1 - SAMG Implementor
2 - SAMG Decision Maker
3 - SAMG Evaluator

OPERATIONS SUPPORT CENTER

All OSC positions require GET-I and Fitness for Duty FFD-001. Other identified positions require GET-II, GET-III, GET-IV, Fit Test, and Respirator Physical. Personnel who are required to be respirator qualified shall, if necessary, have corrective lenses readily available. Note: Operations Support Center emergency repair and damage control team personnel filling Emergency Response Organization positions in accordance with the South Texas Project Electric Generating Station Emergency Plan Table C-1 shall maintain respirator qualifications.

	POSITION	COURSE NUMBER
1.	Assistant OSC Coordinator	EPT-003, EPT-436 OR EPT-444
2.	Assistant Radiological Coordinator	EPT-003, EPT-437
3.	Chemistry Discipline Leader	EPT-003, EPT-440
4.	Document Control Clerk	EPT-003
5.	Electrical Maintenance Discipline Leader	EPT-003, EPT-440
6.	Electrical Maintenance Staff	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical
7.	Emergency Medical Response	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical, Cert.4600 Emergency Medical Technician
8.	I&C Discipline Leader	EPT-003, EPT-440
9.	I&C Maintenance Staff	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical
10.	Maintenance Planner	EPT-003
11.	Material Handler	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical
12.	Mechanical Maintenance Discipline Leader	EPT-003, EPT-440
13.	Mechanical Maintenance Staff	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical
14.	OSC Communicator	EPT-003
15.	OSC Coordinator	EPT-003, EPT-435
16.	OSC Radiological Communicator	EPT-003
17.	PASS Team	EPT-003, GET-II, GET-III, GET-IV, Fit Test, Respirator Physical
18.	Plant Operations Discipline Leader	EPT-003, EPT-440
19.	Resource Coordinator	EPT-003
20.	Security Coordinator	EPT-003, EPT-438
21.	Spare Parts Engineer	EPT-003
22.	Status Board Keeper	EPT-003

CONTROL ROOM/ONSHIFT ORGANIZATION POSITIONS:

Control Room/Onshift positions designated "#" below require current FFD-001, GET-001 and GET-002, GET-003, GET-004, respirator physical and respirator fit test. All other positions require current FFD-001, GET-001, and GET-002. Qualified Alarm Station Operators filling the Onsite Communicator position do NOT require EPT-030. IF the Duty Maintenance Supervisor does NOT have course credit for EPT-075, THEN EITHER the 2nd Mechanical Maintenance OR 2nd I&C Maintenance craft person on shift SHALL have course credit for EPT-075. Personnel, who are required to be respirator qualified shall, if necessary, have corrective lenses readily available.

	POSITION	COURSE NUMBER
1.	Shift Supv./Unit Supv./Emergency Director (1)#	EPT-001, EPT-011, EPT-040, EPT-441, SMG-002
2.	Shift Technical Advisor (1)#	EPT-001, EPT-011, SMG-002
3.	Reactor Operators (1)#	EPT-001, EPT-011, SMG-002
4.	Onsite Communicator	EPT-003, EPT-030
5.	Plant Operators (Fire Brigade/Safe Shutdown)#	EPT-003, EPT-011
6.	Acting Radiological Manager/ OSC Radiological Coordinator#	EPT-003, EPT-060, EPT-443
7.	Radiation Protection Technicians#	EPT-003
8.	Security Force Supervisor/Acting Security Manager	EPT-003, EPT-442
9.	Security Force Table C-1 Personnel#	EPT-003
10.	Duty Maintenance Supv./Acting OSC Coordinator	EPT-003, EPT-075, EPT-444
11.	Material Handler	EPT-003, EPT-439
12.	ERO Maintenance Crews#	EPT-003
13.	Medical Responders (Plant Protection personnel)#	EPT-003,Cert 4398 (Emergency Care Attendant)
14.	Chemistry Technician (RP Protective Measures)#	EPT-003, RPT-100, Cert 3564 (Basic Surveys), Cert 3567 (Instruments)
15.	Chemistry Technician#	EPT-003, Cert 3226 (Post Accident Sampling)
16.	State/County Communicator	EPT-003, EPT-011

Notes: 1 - SAMG Implementor
Table C-1 – South Texas Project Electric Generating Station Emergency Plan Table C-1

JOINT INFORMATION CENTER POSITIONS

	POSITION	COURSE NUMBER
1.	Company Spokesperson	EPT-001, EPT-445
2.	All Other STPEGS Personnel Assigned To The Joint Information Center	EPT-003

EPT-108	Introductory Overview of Emergency Preparedness
EPT-109	Emergency Access Operations
EPT-110	Basic Radiation Protection
EPT-111	Personal Dosimetry
EPT-112	Pressurized Water Reactor Familiarization
EPT-113	Matagorda County Emergency Management Plan
EPT-114	Matagorda County Emergency Response Direction and Control
EPT-115	Public Notification Methods
EPT-116	Prompt Notification System Operation
EPT-117	Protective Action Guides
EPT-118	Evacuation Methodology
EPT-119	Normal Site Access Operations
EPT-120	Fire Department
EPT-121	Radiation Monitoring and Decontamination
EPT-122	Reception Center Operation
EPT-123	Environmental Health Department
EPT-124	Law Enforcement
EPT-125	Emergency Communications Network
EPT-126	Public Information Officer
EPT-127	Emergency Medical Services
EPT-128	Transportation Officer and Bus Drivers
EPT-304	Offsite Agency Coordination

The Emergency Preparedness Training program was originally described in IP-8.21Q, Emergency Preparedness Training Program. This procedure provided for the following initial training courses:

EPT-001	Emergency Direction
EPT-002	Emergency Plan Training - Licensed Operators
EPT-003	Emergency Plan Training - Non-Licensed Operators
EPT-004	Emergency Plan Training - Technical Support (i.e., engineering)
EPT-005	Emergency Plan Training - Maintenance
EPT-006	Emergency Plan Training - Chemical Operations (i.e., non-licensed operators) and Chemical Analysis
EPT-007	Emergency Plan Training - Health and Safety Services (i.e., radiation protection)
EPT-008	Emergency Plan Training - Management Services (i.e., administrative personnel)
EPT-009	Emergency Plan Training - Security
EPT-010	Emergency Plan Training - Public Affairs & Information (i.e., corporate personnel who staffed the Media Information Center)

The ten basic courses were comprised of "abbreviated/detailed" lessons. A detailed lesson contained all objectives for a lesson (e.g., evacuation). An abbreviated lesson was comprised of most, but not all of the detailed objectives. This resulted in a course hierarchy which was used for course substitutions. The hierarchy was as follows:

1. EPT-001 or EPT-002
2. EPT-004 or EPT-007
3. EPT-003, EPT-005, EPT-006, EPT-008, EPT-009, EPT-010

As an example, a person needing EPT-008 credit could attend an EPT-004 or EPT-002 as an acceptable practice. Requalification frequency established in IP-8.21Q was 12 ± 3 months.

Two additional courses, EPT-011 Emergency Communicator, and EPT-030, Quintron Console Operation have a substitution history. EPT-011 (which includes operation of the Quintron Console) may be substituted for EPT-030.

Requalification training courses were identified as a 200 version of the initial course (e.g. requal for EPT-001 was EPT-201). Classroom basic requalification classes (EPT-200 series) were time shortened versions of the original class, covering all original objectives. An EPT-203 examination is identical to an EPT-003 examination and an EPT-201 examination is identical to an EPT-001 examination. If a person's qualifications have expired, requalification training will reinstate a person's qualifications to be on the Emergency Response Organization regardless of the time since expiration.

In mid-1991 the emergency preparedness program was completing an "enhancement" period. This period was characterized by a complete rewrite of all emergency preparedness procedures and training courses. Letter ST-HL-AE-3782 "Extension of Emergency Response Requalification" (Houston Lighting and Power to Nuclear Regulatory Commission, May 21, 1991) documents a one-time deviation in requalification frequency from 15 to 17 months to prevent requalification training on the "old" program and to permit requalification training on the enhanced program. This change is reflected in personnel training records during the summer of 1991. The requalification course numbers used in 1991 were: EPT-041 "Differences 1" (differences between the old and new program for directors of the Emergency Response Organization) and EPT-042 "Differences 2" (differences between the old and new program for those who supported the directors). Also, in mid-1991, IP-8.21Q was revised such that there became only two initial emergency preparedness training courses; EPT-001, Emergency Direction and EPT-003, Emergency Support. EPT-001 was revised to incorporate all of the objectives found in the previous courses EPT-001, 002, 004 and 007. EPT-003 then became the equivalent of EPT-003, 005, 006, 008, 009 and 010. Also, EPT-001, containing all of the objectives of EPT-003 and more, became an acceptable substitute for EPT-003.

In the spring of 1992, requalification requirements were modified to allow requalification by drill or workshop (EPT-250). In November, 1993, IP-8.21Q was retired and this procedure, 0PGP03-ZT-0139, Emergency Preparedness Training Program, became the implementing procedure for emergency preparedness training.

Revision 5 of this procedure created specific read and sign course numbers for many emergency response organization positions (EPT 400 series). The 400 series replaces the generic EPT 043 course number. Additionally, revision 5 added Severe Accident Management (SMG) training for select emergency response organization personnel.

ERO PERSONNEL	DATE SCHEDULED	DATE COMPLETED
1. Matagorda County Judge and Commissioner		
1.1 EPT-108 Introductory Overview of Emergency Preparedness		
1.2 EPT-110 Basic Radiation Protection		
1.3 EPT-112 Pressurized Water Reactor Familiarization		
1.4 EPT-113 Matagorda County Emergency Management Plan		
1.5 EPT-114 Matagorda County Emergency Response Direction and Control		
1.6 EPT-115 Public Notification Methods		
1.7 EPT-117 Protection Action Guides		
1.8 EPT-118 Evacuation Methodology		
2. Bay City Mayor		
2.1 EPT-108 Introductory Overview of Emergency Preparedness		
2.2 EPT-110 Basic Radiation Protection		
2.3 EPT-112 Pressurized Water Reactor Familiarization		
2.4 EPT-113 Matagorda County Emergency Management Plan		
2.5 EPT-114 Matagorda County Emergency Response Direction and Control		
2.6 EPT-115 Public Notification Methods		
2.7 EPT-117 Protection Action Guide		
2.8 EPT-118 Evacuation Methodology		
3. Palacios Mayor		
3.1 EPT-108 Introductory Overview of Emergency Preparedness		
3.2 EPT-110 Basic Radiation Protection		
3.3 EPT-112 Pressurized Water Reactor Familiarization		
3.4 EPT-113 Matagorda County Emergency Management Plan		
3.5 EPT-114 Matagorda County Emergency Response Direction and Control		
3.6 EPT-115 Public Notification Methods		
3.7 EPT-117 Protection Action Guides		

O:\PROCEDURES\APPROVED\ERP\01\0ZVTP02.08x Effective Date: 08/07/00 Print Time / Date: 4:40 PM 08/01/00	0ERP01-ZV-TP02	Rev. 8	Page 1 of 21
Offsite Field Teams			
Quality	Non Safety-Related	Usage: N/A	Effective Date: 08/07/00

Leo Meier	N/A	N/A	Emergency Response Division
PREPARER	TECHNICAL	USER	COGNIZANT ORGANIZATION

Table of Contents

1.0 Purpose and Scope

1.1 This procedure describes the radiological monitoring and analysis techniques to be used by Offsite Field Teams during a declared emergency.

1.2 This procedure does not describe the radiological environmental monitoring and analysis activities to be implemented during the Recovery phase of a declared emergency. Recovery phase monitoring will be performed in accordance with Radiological Laboratory procedures.

2.0 Responsibilities

2.1 The Radiological Director is responsible for overall coordination of STPEGS Offsite Field Team operations.

2.2 The Offsite Field Team Supervisor is responsible for:

2.2.1 Forming, briefing, and directing the activities of the Offsite Field Teams.

2.2.2 Coordinating Offsite Field Team activities with State and Federal agencies.

2.2.3 Evaluating dose projection calculations to determine monitoring locations and transit routes.

2.2.4 Tracking Offsite Field Team radiological exposures.

2.2.5 Advising Offsite Field Teams of changes in meteorology, source terms, and plant conditions which could impact downwind doses.

2.2.6 Functioning as the primary technical interface with the NRC Environmental Dose Assessment Coordinator.

2.3 The Offsite Field Teams are responsible for obtaining and field analyzing environmental samples, performing environmental radiation surveys, adhering to prescribed safety rules and radiological protection requirements, and completing assigned tasks.

3.0 References

3.1 STPEGS Emergency Plan

3.2 0ERP01-ZV-EF10, Offsite Field Team Supervisor

3.3 0PRP10-ZU-0001, REMP Sample Collection

3.4 0PGP05-ZV-0004, Emergency Plan Implementing Procedure Users Guide

3.5 Bureau of Radiation Control, Procedure 10, Monitoring and Sampling Airborne Gamma Releases.

3.6 STPNOC Correspondence with the Bureau of Radiation Control ER20000094, ER20000095.

4.0 Procedure

4.1 At an Alert or higher emergency classification, Offsite Field Team personnel shall:

4.1.1 Respond to the EOF and sign in on the EOF Staffing Board.

4.1.2 Report to the Offsite Field Team Supervisor and receive a briefing on plant status and current environmental monitoring activities.

4.1.3 Receive Offsite Field Team assignments from the Offsite Field Team Supervisor and perform required actions in Data Sheet 1, Offsite Field Team Leader Checklist.

4.1.4 Perform radiological surveys and environmental sampling and analysis per guidance in Addendum 1 through 6.

5.0 Support Documents

5.1 Addendum 1 - Monitoring Techniques

5.2 Addendum 2 - Sample Preparation and Analysis

5.3 Addendum 3 - Particulate Concentration

5.4 Addendum 4 - Iodine Concentration

5.5 Addendum 5 - Plume Location Guidance

5.6 Addendum 6 - Sample Area Map

5.7 Form 1 - Offsite Monitoring Data Form

5.8 Form 2 - Sample Analysis Calculation Form

5.9 Data Sheet 1 - Offsite Field Team Leader Checklist

A. Plume Locating and Tracking

1. Record all data on Form 1, Offsite Monitoring Data Form.

2. While in route to the affected area, one member of the Offsite Field Team should continuously observe the meter scale of the monitoring instrument or keep the instrument speaker turned on in order to identify the plume boundaries and to detect changes in dose rates within the affected area. Readings above background indicate that the plume is in close proximity. Peak readings indicate approximate plume centerline.

   a. Readings while in motion should be taken with the detector of the instrument held inside the vehicle and above the lap of the team member.

   b. Readings taken in motion should not be interpreted as actual measurements of dose rate at any given location due to the time lag between detection and meter response. These readings should only be used as indicators of trends in dose rate changes, initial plume detection, and an early warning of areas in which exposure rates may exceed guidelines for Offsite Field Team activities.

   c. Plume edges are identified by instrument readings three (3) times normal background readings.

3. Upon initial detection of the plume, the vehicle should be stopped and dose rate measurements performed outside the vehicle by obtaining open and closed window dose rate readings at three feet (3') and six inches (6) above the ground. Record results and report them to the Offsite Field Team Supervisor.

   a. Survey measurements which are to be recorded and transmitted should be selected, where possible, for ease in communicating the measurement location (i.e., pre-selected monitoring points, road intersections, landmarks, etc.). Sector designations or approximate compass direction from the plant and estimated distance should be recorded.

4. Using Addendum 5, Plume Location Guidance, assess possible location of the plume and inform the Offsite Field Team Supervisor.

5. Coordinate with the Offsite Field Team Supervisor and drive from monitoring point to monitoring point in the affected area searching for the plume boundaries, centerline, and leading edge.

   a. Plume edge boundaries may be located by driving along roadways running perpendicular to the path of the plume.

   b. Plume centerline may be located by traversing the plume while observing instrument reading and looking for the highest reading.

   c. The leading edge of the plume may be located by driving downwind along roadways parallel to the path of the plume. Whenever possible the leading edge should be approached from a downwind direction in advance of the plume.

6. Traverse the plume at a speed slow enough to ensure adequate meter response time but not so slow as to unnecessarily expose personnel to radiation.

7. Assess plume deposition and location by taking open and closed window dose rate readings at three feet (3') and six inches (6) above the ground. Record results. Refer to Addendum 5Addendum 5 to assess plume location and whether contamination is present.

8. If air samples are <u>not</u> needed after completing plume tracking activities, then move to a low background area, assess personnel and vehicle contamination levels, personnel exposures, and await instructions from the Offsite Field Team Supervisor.

B. <u>Air Sample Collection</u>

1. Air sample collection should not take place in areas where the exposure rate from the plume exceeds 100 mrem/hr. Air samples should be collected in areas where the exposure rate is < 10 mrem/hr.

2. If precipitation is occurring, then take precautions to shield the air sampling equipment and survey instruments from moisture (i.e., place air sampler in the vehicle or under hood).

3. Record all data on Form 1, Offsite Monitoring Data Form.

4. Grab Sampling

   a. Place a particulate filter (fuzzy side out) in the front chamber of the sampling head, centering the filter in the recessed area just ahead of the metal screen. Screw the filter holder cap down carefully and examine assembly to ensure the filter disc remains centered.

   b. Place a silver zeolite cartridge in the rear chamber of the sampling head with the arrow on the cartridge pointing in the direction of the air flow and reassemble the sampling head.

   c. Screw the sampling head into the air sampler.

   d. Place the air sampler in the desired location for sampling. The air sampler should be positioned upwind from the vehicles exhaust.

   e. Connect the negative (BLACK) cable to a grounded portion of the vehicle.

   f. Connect the positive (RED) cable to the positive (+, larger) battery post.

   g. Place the 12V/24V switch to 24V.

   h. Set the timer for the desired time (flow rate with a standard particulate filter and Silver Zeolite cartridge will be approximately 2.2 cfm). A 10 ft^3 sample can be obtained in approximately 5 minutes.

NOTE

The air sampler may be operated without vehicle battery assist for up to 2 hours on a fully charged battery by placing the 12V/24V switch to 12V and setting the timer for the desired time (flow rate with standard particulate filter and Silver Zeolite cartridge will be approximately 0.8 cfm). A 10 ft^3 sample can be obtained in approximately 13 minutes.

   i. If not already running, then start the vehicle's engine. The engine should remain running during the entire sampling period.

   j. Press the START button to begin sampling.

   k. Record the start time and initial flow rate.

l. Check the air sampler head periodically during the sampling period for surface dose rate readings. The volume of air sampled may be varied depending on dose rates at the location but should not exceed 10 ft^3, nor be less than 1 cubic foot.

m. The air sampler will shut off when the set time has expired, or can be manually stopped by pressing the STOP button.

n. Just prior to the air sampler being shut off, note the final flow rate.

o. When the air sampler has stopped, record stop time and record time and final flow rate. If final flow rate is different than the initial flow rate, then record the average of the start and stop flow rates.

p. When the air sampler has stopped, then disconnect the cables from the battery.

q. Place the entire air sampler, including air sample head, into a plastic bag. If the air sample head is reading greater than 10 mrem/hr, then place the air sampler in the far rear of the vehicle and proceed to a low background area (i.e., less than 300 cpm on a frisker) for sample preparation and analysis, Addendum 2.

C. Smear Collection

1. Record all data on Form 1, Offsite Monitoring Data Form.

2. Allowing only one side of the smear to come in contact, wipe a 100 cm^2 area of a smooth, flat, exposed, horizontal surface.

3. Being careful not to contaminate other smears or to shake collected material off of the smear, carefully fold the smear cover over the smear and store in a secure place until the smear can be analyzed.

4. Obtain a contact dose rate of the smear. If dose rate is > 10 mrem/hr, then place smear in rear of vehicle.

5. Record the time the smear was taken and the location.

D. Environmental Sampling

1. If Environmental sampling is directed, then implement the appropriate sampling procedure.

   a. When assisting the State Bureau of Radiation Control, implement appropriate sections of Procedure 10, Monitoring and Sampling Airborne Gamma Releases.

   b. When sampling for the station, implement the appropriate sections of 0PRP10-ZU-0001, REMP Sample Collection.

1. Field Evaluations

   A. Air Samples

      1. Record all data on Form 2, Sample Analysis Calculation Form.

      2. Obtain a background reading. Record counting instrument number, model, and background reading.

      3. Remove air sampler from the vehicle. Remove the air sampler from the plastic bag. Run the air sampler for 30 to 60 seconds to purge the filter of residual noble gas.

      4. Gently remove the particulate filter from the air sample head. Measure the count rate on the collection side of the filter at 1/2 inch from the filter. Subtract the background reading and record ccpm reading.

      5. Place particulate filter into a clean, labeled plastic bag or petri dish for further analysis.

      6. Remove the cartridge from the air sampler head and place it into a clean, labeled plastic bag. Measure the count rate through the plastic bag by direct contact frisk on the collection side of the cartridge. Subtract the background reading and record ccpm reading.

      7. Use Addendum 3Addendum 3, Particulate Concentration and Addendum 4, Iodine Concentration, to convert the ccpm readings to a μCi/cc concentration. Record the μCi/cc concentration and report air sample results to the Offsite Field Team Supervisor.

      8. If necessary, then calculate μCi/cc concentration using Form 2, Sample Analysis Calculation Form and record results. Report air sample results to the Offsite Field Team Supervisor.

      9. Record air sample analysis data in the appropriate spot on Form 1, Offsite Monitoring Data Form as necessary.

      10. Save both the particulate filter and the cartridge for further analysis. Ensure samples are properly labeled and packaged to prevent cross contamination. A completed Form 2, Sample Analysis Calculation Form, should accompany each sample.

B. Smears

1. Record all data on Form 1, Offsite Monitoring Data Form.
2. Analyze the smear in a low background area (<300 CPM) and obtain a background reading.
3. Open the smear cover being careful not to dislodge any material from the smear.
4. Place the smear directly under the frisker probe at a distance of approximately 1/2.
5. Measure the count rate on the smear.
6. Subtract the background reading from the gross counts to obtain smear ccpm. Divide ccpm by count rate meter efficiency to obtain DPM. Record smear DPM and save all smears, ensuring that they are properly labeled and packaged.
7. If the activity is above the count rate meter range, then use an ion chamber dose rate meter to obtain a contact open window and closed window reading. Subtract the closed window reading from the open window reading and multiply by the Beta Correction Factor (BCF), located on the meter. Report results (mrad/hr) in the appropriate location with an *.

C. Lapel Air Samples

1. Record all data on Form 2, Sample Analysis Calculation Form.
2. Analyze the sample in a low background area (<300 CPM) and obtain a background reading.
3. Carefully remove the lapel sample particulate filter from the sample head.
4. Place the filter directly under the frisker probe at a distance of approximately 1/2.
5. Measure the count rate on the filter.
6. Subtract the background reading from the gross counts to obtain filter ccpm and record.
7. Calculate and record the particulate concentration using the Lapel Particulate Filter calculation.
8. Place the filter in a clean, labeled bag and save in a secure place for future analysis.

9. Carefully remove the sample cartridge from the sample head and place into a clean, labeled bag.

10. Place the cartridge directly under and in direct contact with the frisker probe.

11. Measure the count rate on the cartridge.

12. Subtract the background reading from the gross counts to obtain cartridge ccpm and record.

13. Calculate and record the iodine DAC-hours using the Lapel Iodine Cartridge calculation.

14. Place the filter, cartridge, and Form 2, as necessary, in a secure place and save for future analysis.

15. Inform the Offsite Field Team Supervisor of lapel air sample field analysis results.

Airborne particulate concentration should be estimated using the following table:

CCPM	10 ft^3 µCi/cc	5 ft^3 µCi/cc	2 ft^3 µCi/cc	1 ft^3 µCi/cc
100	1.6E - 9	3.2E - 9	8.0E - 9	1.6E - 8
200	3.2E - 9	6.4E - 9	1.6E - 8	3.2E - 8
300	4.8E - 9	9.6E - 9	2.4E - 8	4.8E - 8
400	6.4E - 9	1.3E - 8	3.2E - 8	6.4E - 8
500	8.0E - 9	1.6E - 8	4.0E - 8	8.0E - 8
600	9.6E - 9	1.9E - 8	4.8E - 8	9.6E - 8
700	1.1E - 8	2.3E - 8	5.6E - 8	1.1E - 7
800	1.3E - 8	2.6E - 8	6.4E - 8	1.3E - 7
900	1.4E - 8	2.9E - 8	7.2E - 8	1.4E - 7
1,000	1.6E - 8	3.2E - 8	8.0E - 8	1.6E - 7
2,000	3.2E - 8	6.4E - 8	1.6E - 7	3.2E - 7
3,000	4.8E - 8	9.6E - 8	2.4E - 7	4.8E - 7
4,000	6.4E - 8	1.3E - 7	3.2E - 7	6.4E - 7
5,000	8.0E - 8	1.6E - 7	4.0E - 7	8.0E - 7
6,000	9.6E - 8	1.9E - 7	4.8E - 7	9.6E - 7
7,000	1.1E - 7	2.3E - 7	5.6E - 7	1.1E - 6
8,000	1.3E - 7	2.6E - 7	6.4E - 7	1.3E - 6
9,000	1.4E - 7	2.9E - 7	7.2E - 7	1.4E - 6
10,000	1.6E - 7	3.2E - 7	8.0E - 7	1.6E - 6
20,000	3.2E - 7	6.4E - 7	1.6E - 6	3.2E - 6
30,000	4.8E - 7	9.6E - 7	2.4E - 6	4.8E - 6
40,000	6.4E - 7	1.3E - 6	3.2E - 6	6.4E - 6
50,000	8.0E - 7	1.6E - 6	4.0E - 6	8.0E - 6
60,000	9.6E - 7	1.9E - 6	4.8E - 6	9.6E - 6
70,000	1.1E - 6	2.3E - 6	5.6E - 6	1.1E - 5
80,000	1.3E - 6	2.6E - 6	6.4E - 6	1.3E - 5
90,000	1.4E - 6	2.9E - 6	7.2E - 6	1.4E - 5
100,000	1.6E - 6	3.2E - 6	8.0E - 6	1.5E - 5
200,000	3.2E - 6	6.4E - 6	1.6E - 5	3.2E - 5
300,000	4.8E - 6	9.6E - 6	2.4E - 5	4.8E - 5
400,000	6.4E - 6	1.3E - 5	3.2E - 5	6.4E - 5
500,000	8.0E - 6	1.6E - 5	4.0E - 5	8.0E - 5

1. Check air sample filter by direct frisk 1/2 from filter.

2. Determine the corrected counts per minute (CCPM) by subtracting the background counts per minute (cpm).

3. Run down CCPM column to the most accurate number (i.e., for 7,600 CCPM, use 8,000 CCPM, for 7,200 CCPM use 7,000 CCPM).

4. Read across to the column with the appropriate sample volume and record the corresponding µCi/cc reading.

5. If a sample indicates 900 CCPM and its volume is 10 ft^3, read down to 900 and across to 10 ft^3. Record 1.4E-8 □Ci/cc.

   Assumptions: These numbers are based on 100% collection efficiency for particulate filters and friskers efficiency of at least 10% for unknown particulate.

6. 1 DAC for unknown particulate equals 3.0E – 9 µCi/cc for radiation workers (based on the most limiting isotope anticipated during an accident situation).

Airborne Iodine concentration should be estimated using the following table:

CCPM	10 ft^3 µCi/cc	5 ft^3 µCi/cc	2 ft^3 µCi/cc	1 ft^3 µCi/cc
100	3.2E - 8	6.5E - 8	1.6E - 7	3.2E - 7
200	6.5E - 8	1.3E - 7	3.2E - 7	6.5E - 7
300	9.7E - 8	1.9E - 7	4.8E - 7	9.7E - 7
400	1.3E - 7	2.6E - 7	6.5E - 7	1.3E - 6
500	1.6E - 7	3.2E - 7	8.1E - 7	1.6E - 6
600	1.9E - 7	3.9E - 7	9.7E - 7	1.9E - 6
700	2.3E - 7	4.5E - 7	1.1E - 6	2.3E - 6
800	2.6E - 7	5.2E - 7	1.3E - 6	2.6E - 6
900	2.9E - 7	5.8E - 7	1.5E - 6	2.9E - 6
1,000	3.2E - 7	6.5E - 7	1.6E - 6	3.2E - 6
2,000	6.5E - 7	1.3E - 6	3.2E - 6	6.5E - 6
3,000	9.7E - 7	1.9E - 6	4.8E - 6	9.7E - 6
4,000	1.3E - 6	2.6E - 6	6.5E - 6	1.3E - 5
5,000	1.6E - 6	3.2E - 6	8.1E - 6	1.6E - 5
6,000	1.9E - 6	3.9E - 6	9.7E - 6	1.9E - 5
7,000	2.3E - 6	4.5E - 6	1.1E - 5	2.3E - 5
8,000	2.6E - 6	5.2E - 6	1.3E - 5	2.6E - 5
9,000	2.9E - 6	5.8E - 6	1.5E - 5	2.9E - 5
10,000	3.2E - 6	6.5E - 6	1.6E - 5	3.2E - 5
20,000	6.5E - 6	1.3E - 5	3.2E - 5	6.5E - 5
30,000	9.7E - 6	1.9E - 5	4.8E - 5	9.7E - 5
40,000	1.3E - 5	2.6E - 5	6.5E - 5	1.3E - 4
50,000	1.6E - 5	3.2E - 5	8.1E - 5	1.6E - 4
60,000	1.9E - 5	3.9E - 5	9.7E - 5	1.9E - 4
70,000	2.3E - 5	4.5E - 5	1.1E - 4	2.3E - 4
80,000	2.6E - 5	5.2E - 5	1.3E - 4	2.6E - 4
90,000	2.9E - 5	5.8E - 5	1.6E - 4	2.9E - 4
100,000	3.2E - 5	6.5E - 5	1.3E - 4	3.2E - 4
200,000	6.5E - 5	1.3E - 4	4.8E - 4	6.4E - 4
300,000	9.7E - 5	1.9E - 4	6.5E - 4	9.7E - 4
400,000	1.3E - 4	2.6E - 4	8.1E - 4	1.3E - 3
500,000	1.6E - 4	3.2E - 4	9.7E - 4	1.6E - 3

1. Through the plastic bag, check the iodine cartridge by direct contact frisk on the collection side of the cartridge.

2. Determine the corrected counts per minute (CCPM) by subtracting the background counts per minute (cpm).

3. Run down CCPM column to the most accurate number (i.e., for 7,600 CCPM, use 8,000 CCPM, for 7,200 CCPM use 7,000 CCPM).

4. Read across to the column with the appropriate sample volume and record the corresponding µCi/cc reading.

5. If a sample indicates 900 CCPM and its volume is 10 ft^3, read down to 900 and across to 10 ft^3. Record 2.9E-7 µCi/cc.

   Assumptions: These numbers are based on 100% collection efficiency for silver zeolite cartridge and frisker efficiency of 0.49% for I-131.

6. 1 DAC for I-131 equals 2E-8 µCi/cc for radiation workers.

1. PLUME HAS PASSED AND CONTAMINATION DEPOSITED

   - 6 inch open window reading is significantly higher than 3 foot open window reading.

   AND

   - 6 inch open window reading is significantly higher than 6 inch closed window reading.

2. IN THE PLUME

   - 6 inch open window reading is approximately the same as 3 foot open window reading

   AND

   - 3 foot open window reading is significantly higher than 3 foot closed window reading.

   AND

   - Instrument readings three (3) times normal background readings indicate the edges of the plume.

3. PLUME ABOVE OR OFF TO SIDE

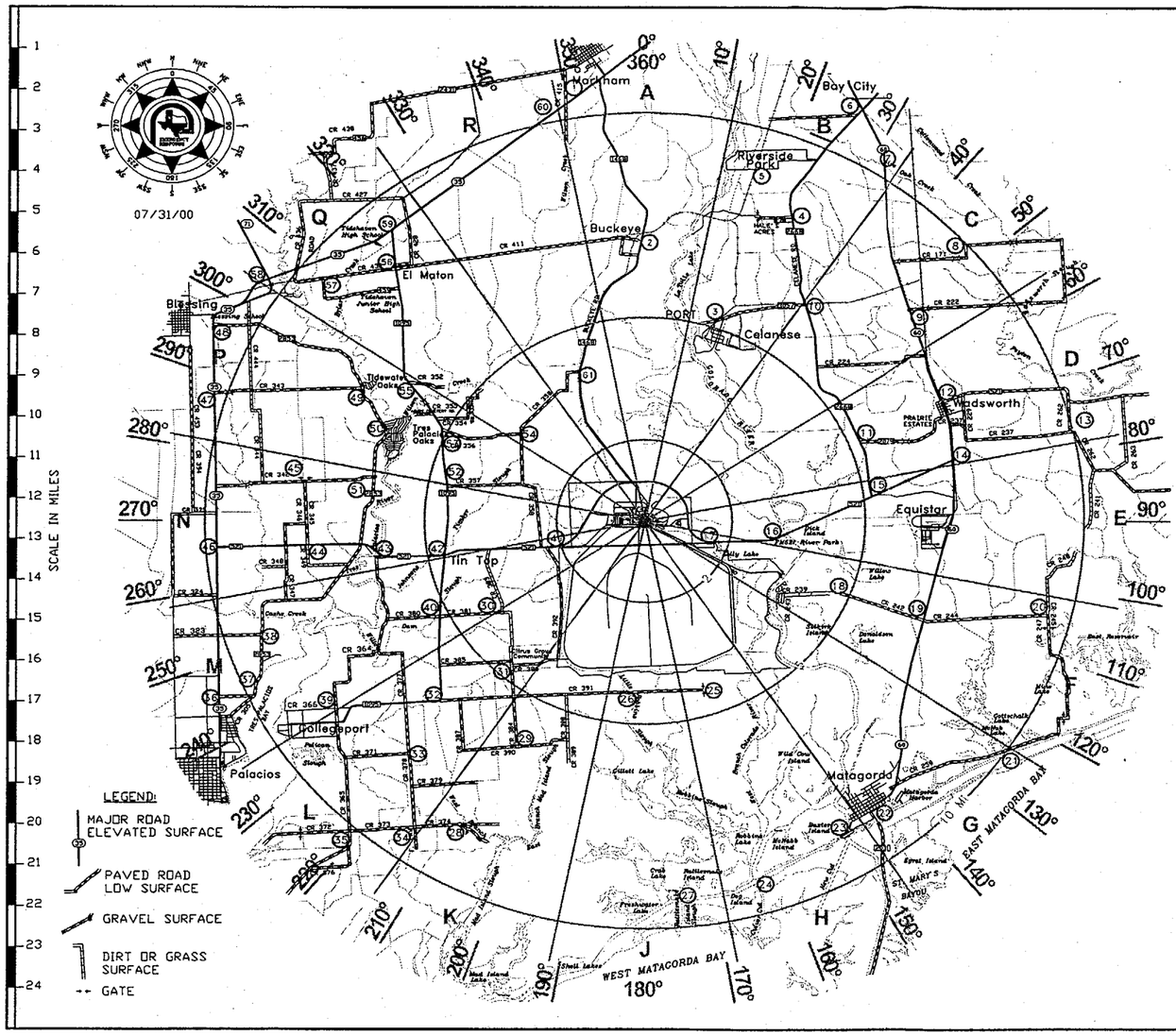
   - 3 foot open window reading is approximately the same as 3 foot closed window reading

   AND

   - 6 inch open window reading is approximately the same as 6 inch closed window reading.

   AND

   - Instrument readings three (3) times normal background readings indicate the edges of the plume.



PRE-SELECTED MONITORING POINTS

Monitoring Point	Coordinates		Location
1	N28° 57'14"	W96°03'73"	Intersection of SH35 and FM1468 (On STP Directional Sign to N of SH35)
2	N28° 53'68"	W96°02'90"	Intersection of FM1468 & CR 411
3	N28° 51'93"	W96°01'26"	Intersection of Celanese Avenue A and FM3057
4	N28° 54'13"	W95°59'49"	Intersection of FM2668 and entrance of Hale's Acres Subdivision
5	N28° 55'20"	W96°00'22"	Riverside Park at Railroad Tracks
6	N28° 56'40"	W95°57'86"	Intersection of FM2668 and SH60
7	N28° 54'48"	W95°57'35"	SH60 at Live Oak Creek
8	N28° 53'37"	W95°55'54"	Second 90 degree bend on Sims Lane (CR 177), east of SH60
9	N28° 52'11"	W95°56'85"	Intersection of SH60 and CR 222
10	N28° 52'25"	W95°59'23"	Intersection of FM3057 and FM2668
11	N28° 49'32"	W95°58'08"	Intersection of FM2078 and FM2668
12	N28° 50'12"	W95°56'18"	Intersection of FM521 and SH60 in Wadsworth
13	N28° 49'41"	W95°53'33"	Intersection of CR 237 and CR 262
14	N28° 48'87"	W95°55'96"	Intersection of FM521 and SH60 south of Wadsworth
15	N28° 48'12"	W95°57'85"	Intersection of FM521 and FM2668
16	N28° 47'30"	W95°59'95"	FM521 and Colorado River
17	N28° 47'21"	W96°01'39"	FM521 at Kelly Lake
18	N28° 46'12"	W95°58'79"	CR 239 and CR 242
19	N28° 45'44"	W95°56'72"	Intersection of SH60 and CR 244
20	N28° 45'48"	W95°53'92"	Intersection of CR 244 and CR 245
21	N28° 42'65"	W95°54'85"	Bridge of CR 259, 2.6 miles east of SH60
22	N28° 41'45"	W95°58'09"	Junction of SH60 and FM2031 in Matagorda
23	N28° 41'03"	W95°58'53"	Intersection of Intracoastral Waterway and Colorado River at the Barge traffic signal
24	N28° 39'14"	W96°01'50"	Intercostal Waterway and Old Colorado River at sunken barge
25	N28° 44'06"	W96°01'72"	East end of CR 391
26	N28° 44'04"	W96°03'40"	CR 391 at Bridge over Robbins Slough
27	N28° 38'86"	W96°02'50"	Intercostal Waterway at Rattlesnake Island Slough
28	N28° 41'30"	W96°07'18"	CR 374 at Mad Island Hunting Lodge gate
29	N28° 42'93"	W96°05'95"	Intersection of CR 390 and CR 384
30	N28° 45'81"	W96°02'20"	Intersection of CR 383 and CR 381
31	N28° 44'76"	W96°06'03"	Intersection of CR 384 and CR 385
32	N28° 43'95"	W96°07'65"	Intersection of FM1095 and CR 391
33	N28° 42'83"	W96°08'36"	Intersection of CR 371 and CR 378
34	N28° 41'26"	W96° 08'26"	Intersection of CR 378 and CR 374
35	N28° 41'21"	W96° 09'74"	Intersection of CR 372 and CR 365
36	N28° 44'57"	W96° 12'59"	Intersection of SH35 and FM2853 north of Palacios
37	N28° 44'69"	W96° 11'63"	90 degree bend in FM2853 and CR 305
38	N28° 45'44"	W96° 11'63"	Intersection of FM2853 and CR 323
39	N28° 43'83"	W96° 09'98"	Intersection of CR 366 and CR 364
40	N28° 45'76"	W96° 07'61"	Intersection of FM1095 and CR 380
41	N28° 47'20"	W96° 05'17"	Intersection of FM521 and CR 358
42	N28° 47'08"	W96° 07'47"	Intersection of FM521 and FM1095 at Tin Top
43	N28° 47'06"	W96° 08'79"	Intersection of FM521 and CR 364
44	N28° 47'35"	W96° 10'54"	Intersection of FM521 and CR 349
45	N28° 48'70"	W96° 10'56"	Intersection of CR 342 and CR 345
46	N28° 47'34"	W96° 12'57"	Intersection of SH35 and FM 521
47	N28° 50'64"	W96° 12'58"	Intersection of SH35 and CR 343
48	N28° 52'12"	W96° 12'57"	Intersection of SH35 and FM2853 at Blessing
49	N28° 50'80"	W96° 09'27"	Intersection of FM2853 and Tidewater Oaks Subdivision North of Harbor
50	N28° 49'74"	W96° 08'70"	FM2853 at Tres Palacios Oaks Subdivision at the Fire Station
51	N28° 48'77"	W96° 09'01"	Intersection of FM2853 and CR 342
52	N28° 48'55"	W96° 07'36"	Intersection of FM1095 and CR 357
53	N28° 49'76"	W96° 07'46"	Intersection of FM1095 and CR 356
54	N28° 49'61"	W96° 05'69"	Intersection of CR 358 and CR 356
55	N28° 50'78"	W96° 08'17"	Intersection of FM1095 and CR 352
56	N28° 53'21"	W96° 08'40"	Intersection of FM1095 and CR 411
57	N28° 53'04"	W96° 10'08"	Intersection of FM459 and CR 432
58	N28° 53'06"	W96° 11'30"	Intersection of SH71 and SH35
59	N28° 54'05"	W96° 08'48"	Intersection of SH35 and FM1095
60	N28° 56'22"	W96° 05'17"	SH35 NE of Wilson Creek Bridge
61	N28° 50'92"	W96° 04'36"	Intersection of FM1468 and CR 358

Form 1	Offsite Monitoring Data Form	Page 1 of 1

Date: ___/___/___

Team No.: _____

Event: _____

Team	Time	Distance	Location/Sample No.	Meter Reading MR/HR				Ground Contamination		Airborne µCi/cc		Field Team Total Dose MR
				Open Window		Closed Window		Direct CPM	*Smear DPM	Particulate	Iodine	
				6	3'	6	3'					

Smear activity entry with an * denotes mrad/hr

Complete and attach to air sample as necessary.

_____ _____ _____
Model No. ID No. Bkgd CPM

Particulate Filter:

$$\frac{\text{CCPM}}{\text{CCPM}} \div \left(\frac{\text{Volume ft}^3}{\text{Volume ft}^3} \times \frac{\text{Efficiency*A}}{\text{Efficiency*A}} \times \underset{\text{(C)}}{6.3E^{+10}} \right) = \frac{\mu\text{Ci/cc}}{\mu\text{Ci/cc}}$$

Iodine Cartridge:

$$\frac{\text{CCPM}}{\text{CCPM}} \div \left(\frac{\text{Volume ft}^3}{\text{Volume ft}^3} \times \frac{\text{Efficiency*B}}{\text{Efficiency*B}} \times \underset{\text{(C)}}{6.3E^{+10}} \right) = \frac{\mu\text{Ci/cc}}{\mu\text{Ci/cc}}$$

Lapel Particulate Filter:

$$\frac{\text{CCPM}}{\text{CCPM}} \div \left(\frac{2000}{\text{*F}} \times \frac{\text{Efficiency*A}}{\text{Efficiency*A}} \times \underset{\text{(D)}}{0.4} \times \frac{\text{\_\_\_\_}}{\text{*PF}} \right) = \frac{\text{DAC-hr}}{\text{DAC-hr}}$$

Lapel Iodine Cartridge:

$$\frac{\text{CCPM}}{\text{CCPM}} \div \left(\frac{2000}{\text{*F}} \times \frac{\text{Efficiency*B}}{\text{Efficiency*B}} \times \underset{\text{(E)}}{2.7} \times \frac{\text{\_\_\_\_}}{\text{*PF}} \right) = \frac{\text{DAC-hr}}{\text{DAC-hr}}$$

*Notes:

A = Efficiency for a frisker system is assumed to be 10% for particulate filters with Unknown activities.

B = Efficiency for a frisker system is assumed to be .49% for Silver Zeolite cartridges with I-131 activity.

C = $6.3E^{+10}$ cc-dpm/ft^3-µCi = $2.83E^{+4}$ cc/ft^3 × $2.22E^{+6}$ dpm/µCi.

D = 0.4 dpm-min/cc-DAC-hr = $2.22E^{+6}$ dpm/µCi × $3E^{-9}$ µCi/cc/DAC × 60 min/hr.

E = 2.7 dpm-min/cc-DAC-hr = $2.22E^{+6}$ dpm/µCi × $2E^{-8}$ µCi/cc/DAC × 60 min/hr.

F = Lapel sampler default flow rate 2,000 cc/min = 2 LPM.

PF = Respirator protection factor, If none worn, use default value of 1.

Analyzed by: _____ _____
(Name) (Date/Time)

(Name) _____ (Date) _____ (Unit) _____

Action _____ Time _____

A. Team Preparations

1. Obtain keys to the Emergency Response Site Vehicle (ERSV) from the key box located in the EOF. _____

2. Obtain the following from the EOF:

- 1 - Offsite Field Team Kit (each kit consists of 2 boxes) _____
- 1 - battery powered air sampler _____
- 1 - lapel air sampler _____
- 1 - portable radio _____
- 1 - spare radio battery _____
- 1 - portable cellular telephone _____
- Various TLD Packets for Local Industry _____

3. Check the Offsite Field Team Kit by performing the following actions:

a. Compare the contents of the kit against the inventory list that is inside of the kit. This step does not have to be performed if the seals on the kits are intact. Notify the Offsite Field Team Supervisor of any discrepancies. _____

b. Verify operability of the radiation survey instrumentation by checking the calibration dates, battery response levels, and functional checks. Notify the Offsite Field Team Supervisor of any inoperable equipment. _____

c. Verify operability of the dosimeter charger and calculator. Notify the Offsite Field Team Supervisor if either is inoperable. _____

Action Time

d. Perform a pre-operational check of the battery powered air sampler by performing the following actions:

1) Verify that the calibration due date on the calibration sticker has not been exceeded. _____

2) With the unit not plugged into an AC power supply, place the 12V/24V switch to 12V, set Timer to 01, CAL/NORM switch to NORM and press the START button. _____

3) If the motor starts, then press the STOP button. _____

4) If the motor does not operate, then notify the Offsite Field Team Supervisor. _____

e. Wrap the RO-2 (or equivalent) radiation survey instrument in a plastic bag to minimize intrusion of noble gases into the ionization chamber. _____

4. Assign each member of the Offsite Field Team a TLD, 0-200 mrem SRD, and a 0-5 rem SRD. Notify the Offsite Field Team Supervisor of TLDs issued, the TLD numbers, to whom the TLDs were issued, and the initial readings of the SRDs. _____

5. Perform a communications check between the ERSV and the Offsite Field Team Supervisor. Radio settings will be in accordance with 0PGP07-ZA-0011, Addendum 1. _____

a. Use MODE A, CHANNEL 9 on the ERSV.

b. Use Channel 9 with toggle switch on A for repeater or B for direct communications on the Motorola MTS 2000 Hand-held radios.

Action Time

c. Set up the portable cellular telephone by performing the following:

1) Plug power cord into the cigarette lighter.

2) Rotate antenna to a vertical position.

3) Refer to operation summary card located in the base of the telephone pack for activating and operating the phone.

d. If radios fail in the field, use the portable cellular telephone to contact the Offsite Field Team Supervisor. Telephone numbers for Emergency Response Facilities are in the Emergency Communications Directory or ERO Facility Telephone List.

6. When directed by the Offsite Field Team Supervisor to initiate offsite monitoring, then obtain a briefing from the Offsite Field Team Supervisor. _____

7. Ensure each member of the Offsite Field Team dons protective clothing/equipment as directed by the Offsite Field Team Supervisor. One team member shall don a lapel air sampler (this should be the member performing the surveys). _____

8. When dispatched, use guidance in Addendum 1 through 6 for performing radiological surveys, obtaining samples, performing analysis, and evaluating results. N/A

9. Ensure all survey and sample information obtained by the Offsite Field Teams is documented properly on Form 1, Offsite Monitoring Data Form, and Form 2, Sample Analysis Calculation Form. N/A

10. When directed by the Offsite Field Team Supervisor, deliver required Emergency response equipment to the Staging Area. _____

- Inform the Offsite Field Team Supervisor when delivery is complete. _____

Action Time

11. When directed by the Offsite Field Team Supervisor to deliver TLD packets to local industries then:

    a. Proceed to the appropriate industry main entrance. _____

    b. Deliver TLD packets to appropriate industry's management or authorized representative and record individual's name. _____

    c. Inform the Offsite Field Team Supervisor when delivery is complete. _____

12. Maintain communication with the Offsite Field Team Supervisor. Inform him of all monitoring activities, analysis results, and personnel exposures.