South Texas Project

# After Action Report/ Improvement Plan

Exercise Date - October 27, 2010

Radiological Emergency Preparedness (REP) Program

FEMA

*Published January 13, 2011*

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# EXECUTIVE SUMMARY

On October 27, 2010, a biennial Radiological Emergency Preparedness (REP) exercise, which included a relocation, return, reentry demonstration, was conducted in the plume exposure pathway emergency planning zone (EPZ) around the South Texas Project (STP) located near Wadsworth, Matagorda County, Texas. The U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS-FEMA), Region VI, evaluated the exercise. The purpose was to assess the level of preparedness of state and local responders to react to a simulated radiological emergency at STP. This exercise was held in accordance with FEMA's policies and guidance concerning the implementation of state and local radiological emergency preparedness plans and procedures.

The previous exercise at this site was conducted on July 23, 2008. The qualifying emergency preparedness exercise to satisfy FEMA rule 44 Code of Federal Regulations 350 requirements for U.S. Nuclear Regulatory Commission licensing to operate the facility was conducted on April 8, 1987. There have been thirteen evaluated exercises, including the exercise on October27, 2008, plus several drills conducted since 1987.

FEMA, Region VI wishes to acknowledge the efforts of the many individuals in the State of Texas, Matagorda County, Bay City, the City of Palacios and surrounding jurisdictions who participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants was evident during this exercise.

This report contains the final written evaluation of the biennial exercise. All state and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies, two Areas Requiring Corrective Action (ARCA) corrected during the exercise and no Plan Issues identified during this exercise.

# SECTION 1: EXERCISE OVERVIEW

## 1.1 Exercise Details

**Exercise Name**
South Texas Project

**Type of Exercise**
Plume

**Exercise Date**
October 27, 2010

**Program**
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

**Scenario Type**
Radiological Emergency

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## 1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the South Texas Project exercise:

State Jurisdictions

- Texas Department of State Health Services, Radiation Control Program
- Texas Division of Emergency Management
- Texas Department of Public Safety, Disaster District Committee Sub-2C Pierce
- Texas Department of Public Safety, Highway Control
- Texas Commission on Environmental Quality
- Texas Department of Public Works
- Texas Engineering and Extension Service
- Texas Department of Agriculture
- Texas Public Utility Commission

Risk Jurisdictions

- Matagorda County Emergency Management
- Bay City Independent School District
- Matagorda County Sheriff's Office
- Matagorda County Department of Transportation

Support Jurisdictions

- City of Bay City
- City of Palacios

Private Organizations

- South Texas Project Electric Generating Station
- American Red Cross
- EAS Primary Radio Station, KMKS 102.5

Federal Jurisdictions

- United State Coast Guard
- United States Nuclear Regulatory Commission

# SECTION 2: EXERCISE DESIGN SUMMARY

## 2.1 Exercise Purpose and Design

The DHS/FEMA Region VI Office evaluated the exercise on October 27, 2010 to assess the capabilities of the local emergency preparedness organizations in implementing their Radiological Emergency Response Plans and Procedures to protect the public health and safety during a radiological emergency involving South Texas Project Electric Generating Station (STPEGS). The purpose of this report is to represent the results of the findings on the performance of the offsite response organizations during a simulated radiological emergency.

## 2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and Capabilities/REP Criteria selected to be exercise are discussed in the Exercise Plan (EPLAN), Appendix E.

## 2.3 Scenario Summary

The exercise scenario was developed to evaluate the response of the exercise participants to an incident requiring evacuation of the public from the 10-mile Emergency Planning Zone (EPZ) surrounding the South Texas Project Electric Generating Station (STPEGS). The exercise scenario provided for the evaluation of the Texas Division of Emergency Management (TDEM), Texas Department of State Health Services- Radiation Control Program (DSHS-RCP), and Matagorda County to conduct evacuations of the public.

# SECTION 3: ANALYSIS OF CAPABILITIES

## 3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities that participated in the October 27, 2010 exercise to test the offsite emergency response capabilities of state and local governments in the 10-mile Emergency Planning Zone (EPZ) surrounding the South Texas Project electric Generating Station (STPEGS).

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria delineated in the exercise evaluation areas as outlined in the Federal Register, Vol. 67, No. 80, "Radiological Emergency Preparedness: Exercise Evaluation Methodology" (April 25, 2002). Detailed information on the exercise evaluation area criteria and the extent of play agreement used in this exercise are found in Appendix D of this report.

## 3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.1, on the following page, presents the status of all exercise evaluation area criteria that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status is indicated by the use of the following letters:

M - Met (No Deficiency or Areas Requiring Corrective Actions [ARCAs] assessed and no unresolved ARCAs from prior exercises)

D - Deficiency assessed

A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)

N - Not Demonstrated (Reason explained)

P - Plan Issue

Table 3.1 - Summary of Exercise Evaluation

| DATE: 2010-10-27<br>SITE: South Texas Project, TX<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | TDEM-SOC | DD Sub-2C Pierce | DSHS-HQ | DSHS-EOF | DSHS-RCP FMT 1 | DSHS-RCP FMT 2 | JIC | Mat. Co. EOC & T/ACP | EAS-KMKS |
|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | |
| Mobilization | 1a1 | M | M | M | M | | | M | M | |
| Facilities | 1b1 | | | | M | | | | | |
| Direction and Control | 1c1 | M | M | M | M | | | | M | |
| Communications Equipment | 1d1 | M | M | M | M | M | M | M | M | |
| Equip & Supplies to support operations | 1e1 | M | M | M | M | M | M | M | M | |
| Protective Action Decision Making | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | M | | | | M | |
| Radiological Assessment and PARs | 2b1 | | | M | M | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | M | |
| PADs for protection of special populations | 2c1 | | | | | | | | M | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | M | |
| Protective Action Implementation | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | M | M | M | | M | |
| Implementation of KI decision | 3b1 | | | | M | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | | | | | | | | | |
| Implementation of traffic and access control | 3d1 | | | | | | | | M | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | M | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | M | |
| Field Measurement and Analysis | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | M | M | | | |
| Field Teams obtain sufficient information | 4a2 | | | | M | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | M | M | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | M | M |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | |
| Activation of the prompt alert and notification system - Exception areas | 5a3 | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | M | M | |
| Mon / decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | |
| Mon / decon of emergency worker equipment | 6b1 | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | |

# 3.3 Criteria Evaluation Summaries

### 3.3.1 Texas Jurisdictions

#### 3.3.1.1 Texas Division of Emergency Management-State Operations Center

**Criterion 1.a.1:**
This criterion was adequately demonstrated in accordance with approved plans, procedures and the extent of play agreement.

At 0725 the utility declared an Alert and notified the Texas Division of Emergency Management-State Operations Center (TDEM-SOC) through a dedicated facsimile line with the utility. The TDEM-SOC, which is staffed 24 hours a day, was declared operational at 0737 at the time of notification.

Representatives from the Department of State Health Services (DSHS) arrived at the TDEM-SOC at 0917 and gave a briefing to the Operations Section Administrator (OSA) at 0931. The TDEM-SOC is operated with minimal state agencies present. State agency representatives are communicated with through telephone and WebEOC.

Site Area Emergency was declared by the utility at 0946. At 0959 a land line phone call was received by the Public Information Officer/Joint Information Center (PIO/JIC). At that time the OSA instructed the Operations Watch Supervisor (OWS) to proceed with agency call down notifications per the procedures. At 1107 a dedicated line facsimile was received from the utility confirming the Emergency Classification Level (ECL).

This notification process was used again when the utility declared a General Emergency at 1108. In addition, the DSHS representative received a cell phone call from the Texas Department of Public Safety/Disaster District Chair and verified the information with South Texas Project representatives who were present. DSHS then notified the OSA of the General Emergency (GE) ECL. At 1114, a facsimile was received from the utility on the dedicated line verifying the ECL.

**Criterion 1.c.1:**
The lead in charge at the Texas Division of Emergency Management-State Operations Center (TDEM-SOC) was the Operations Section Administrator (OSA). Only state agencies that have a

need to be in direct personal contact locate to the TDEM-SOC during an event arew deployed to the SOC. Representatives of the Department of State Health Services (DSHS) and South Texas Project were present. All other agencies were kept in communication using phone and WebEOC. The OSA remained the lead throughout the exercise.

All notifications, WebEOC, facsimiles and calls were received and transmitted through the operations section. The OSA made sure these communications were handled efficiently and accurately. Per procedures, the OSA directed notifications through call down lists and kept personnel current with the exercise activities.

Since the SOC had only two outside entities present, communication and coordination with the other entities was efficient and effective in their manner. Throughout the exercise the OSA made themselves readily available for questions and communication.

**Criterion 1.d.1:**
The Texas Division of Emergency Management-State Operations Center (TDEM-SOC) efficiently utilized an array of communication systems. All notifications were received via a dedicated facsimile line ensuring direct communication with the utility. A land line phone was the backup for these notifications with the utility. The TDEM-SOC used land line phones and WebEOC to communicate with other state and local agencies. Cell phones were also utilized effectively. No communication failures were observed during the course of the exercise.

Other means of communication identified, but not demonstrated, were satellite phones and High Frequency (HF) radios.

**Criterion 1.e.1:**
The Texas Division of Emergency Management-State Operations Center (TDEM-SOC) was arranged so each agency had a specific area in which to conduct their duties and operations. Each work station was equipped with a landline phone and notebook computer WebEOC access and work use. The SOC was equipped with 3 large projection screens used to display WebEOC updates and maps. Four flat panel televisions were assigned news channels.

Due to the location of the TDEM-SOC being in Austin, Texas, no survey equipment or Potassium Iodide (KI) is kept on site and no emergency workers are dispatched from that location.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.2 Department of Public Safety, Disaster District Sub-2C Pierce

**Criterion 1.a.1:**
The Texas Department of Public Safety (DPS) Disaster District Sub-2C located in Pierce, Texas pre-staged for the exercise as agreed upon in the extent of play agreement. In accordance with the extent of play agreement, all personnel were pre-staged. The call down phone from the South Texas Project Electric Generating Station (STPEGS) is located in the dispatch center.

At 0735, the first notification was made and took four minutes to complete the call. The director of the Disaster District is the DPS Lieutenant and he was notified at the end of the call down, at 0739. He then notified those who were already pre-staged that the Alert was delcared at 0725. The Emergency Operation Center (EOC) was set up and prepared for use along with the projector and displays. Dispatch handled the call down of the staff which was completed at 0750. The Lieutenant declared the Disaster District operational at 0814 although they had been working prior to this time.

The South Texas Porject Electric Generating Station (STPEGS) WebEOC documented a Site Area Emergency at 0946, paperwork followed with this information. The EOC again recognized the update on the WebEOC at 1126 when the General Emergency declaration was received; the GE was declared at 1108. The staff was notified of the Emergency Classification Level (ECL) changes as they were received and the Lieutenant kept everyone aware of changes in the situation. Officers were placed on stand-by, the staff from the Texas Department of Emergency Management (TDEM) made contact with the person that was going to be getting the # 213 forms (logistics request form) and logged onto the state WebEOC system. A DPS Regional Liaison Officer (RLO), who was part of the staff, logged on to the STPEGS WebEOC and put both the STPEGS and the State EOC update pages on a split screen that allowed everyone in the room to

view incoming changes in status.

**Criterion 1.c.1:**
The Lieutenant of the Station was on duty at the start of the exercise and called the staff to prepare for Emergency Operation Center (EOC) activation. Representatives from the Texas Department of Emergency Management (TDEM) and the Texas Department of State Health Services-Radiation Control Program (DSHS-RCP) were pre-staged at the facility as agreed upon in the extent of play agreement.

The Regional Liaison Officer (RLO) established a connection with the State WebEOC software as did the TDEM representative with the STP WebEOC. Both screens were projected onto the wall where everyone could see and read the output of both STP and the State. The Lieutenant conducted briefings whenever any change was reported. There were just four players at the table and everyone at the table was kept up to date on what was being done. There were two staff members bringing in faxes from the two fax machines, logging, copying, handing out the information and keeping the display boards updated.

The RLOs were contacted during the exercise and all requests were written up by the Lieutenant and given to the TDEM representative if the request was to go out to the State. The Lieutenant took all calls requesting assistance and prepared a #213 form. If any questions arrived concerning the request, and some did, the Lieutenant would call the county back for clarification. The form #213 is a standardized form that is used both internally in the Disaster District and the State EOC. The request was then entered into WebEOC. Calls were made to State Logistics to make sure they had received the requests from WebEOC.

**Criterion 1.d.1:**
The Disaster District is the communication center for the Department of Public Safety for the area. The communication center operates 24 hours a day and has a primary radio system with the ability to patch into both the Bay City and Harris County 800 Mhz radio systems. Multiple phone lines, cellular and satellite phones are available and checked weekly. During the exercise the primary radio system and hard line phones were demonstrated. No communication failures were observed.

Two faxes were used during the exercise and runners were used to bring the faxes to the EOC where they were logged in, copied and distributed to the staff.

If there was a need to contact the hospital this could be done by one of three phone systems, land line, cellular or satellite.

**Criterion 1.e.1:**
The Emergency Operation Center (EOC) at the Department of Public Safety (DPS) Disaster District Office is stocked and staffed for smooth 24 hour operation. There are six phones with twelve seats at the central table. The room is equipped with a projector that displays WebEOC, one High Definition (HD) monitor (wall mounted), a plot map, Event Status board, two Key Event Chronology boards and three blank white boards for update information. The projector was used to project the State WebEOC from the South Texas Project Electric Generatin Staiton (STPEGS) and allowed for quick update of information directly to the Disaster District. Since the facility is staffed 24 hours per day the facilities are always ready for long term operation.

No dosimeters or Potassium Iodide (KI) is stored in this facility or in the patrol cars. The plan is for the troopers to go to the county EOC where the KI and dosimeters are stored, if a release occurs. Should troopers need barricades or cones they would request them from the County or City in which they would be working; none are stored in the Disaster District EOC.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.3 Department of State Health Services, Radiation Control Program - Headquarters

**Criterion 1.a.1:**
The Texas Department of State Health Services Radiation Control Program (DSHS-RCP) mobilized rapidly to establish an interim accident assessment center in room N-110 of the DSHS-RCP office building in Austin. DSHS-RCP established and operated this center in accordance with the offsite plan and procedures as modified by the extent of play agreement.

Mobilization of this facility began with a notification from the South Texas Project Electric Generating Station (STPEGS) via commercial telephone to the DSHS-RCP emergency notification number. This number rings at all extensions in the DSHS-RCP office during working hours to establish communication rapidly with the first responder. For the Alert declared at 0725, DSHS-RCP received the notification call at 0744 and the leader of the assessment team was summoned and received the notification via voice transmission. The telephonic notification mentioned the emergency classification level (ECL), the affected unit, the initiating condition of the emergency and its specific emergency action level, the reactor's status, the status of any release (none was in progress) and the fact that no protective actions were recommended. After taking the information, the accident assessment center leader provided the STPEGS communicator with the telephone number to room N-110 and directed him to make subsequent notifications to that number. The six designated accident assessment center responders were all present at the DSHS-RCP office at the time of the notification call, and after the call they all proceeded to room N-110 to set up the accident assessment center. Once there, a fax of the offsite notification message form (NMF) with the same information previously given over the telephone arrived at room N-110 at 0751. The accident assessment center was de-activated prior to any changes in the ECL; however, a 30 minute update of plant conditions was received at 0846 and a follow-up NMF arrived at the facility by fax at 0843.

The extent of play agreement called for the deployed radiation monitoring teams and accident assessment personnel to be pre-positioned in the area of STPEGS at the commencement of the exercise. Therefore, the DSHS-RCP staff was unable to demonstrate procedures for recall of personnel to establish response rosters. They satisfactorily demonstrated knowledge of the procedure for accomplishing this task by interview with the evaluator.

After arriving at the accident assessment center, the six facility responders quickly set up the facility by staging maps and obtaining office supplies from a locker. The leader declared the facility operational at 0807; this was 23 minutes after receipt of the initial notification. The facility remained operational until the Chief of Field Operations was on-station at the Emergency Operations Facility and turnover from the accident assessment center leader to the Chief of Field Operations was completed. The Chief of Field Operations then directed at 0915 that the accident assessment center in room N-110 be de-activated. The responders in room N-110 quickly acted to secure the facility.

Two responders at the accident assessment center departed that facility prior to de-activation to

function as the DSHS-RCP liaison and assistant at the State Operations Center (SOC). The SOC informed the accident assessment center at 0839 that the SOC was ready for them to report there. The two responders departed the accident assessment center three minutes later at 0842.

**Criterion 1.c.1:**
Direction and control at the Department of State Health Services – Radiation Control Program (DSHS-RCP) accident assessment center in Austin were performed very effectively. The small size of the facility and the small number of responders (five, not including the accident assessment center leader) greatly facilitated direction, control and intra-facility communication. All essential functions of this facility, which were assessment and communication, were performed effectively with no problems noted.

The Manager of the Radioactive Material Inspection Unit at DSHS-RCP functioned as the leader of the accident assessment center during the exercise. She was very conscientious about briefing her staff immediately after each telephone conversation in which she received new or changing information. She displayed excellent communication behavior by ensuring that the Chief of Field Operations was kept informed of all important information during her transit to the Emergency Operations Facility. She tasked her staff to pro-actively reach out to other response facilities such as the RCP Staging Area, the Emergency Operations Facility and the State Operations Center (SOC) to ascertain status of those facilities and if they needed any assistance or information from the accident assessment center.

The accident assessment center leader displayed a questioning attitude and tasked her staff to obtain clarification whenever incoming information was either incomplete or not easily understood. An example of this was when the South Texas Project Electric Generating Station (STPEGS) reported that the elevated readings on the containment area radiation monitors were due to “shine”. The leader tasked the technical analyst to obtain an explanation of what the context was of this unfamiliar word. The analyst quickly obtained an explanation from STPEGS and reported it to the accident assessment center staff.

The accident assessment center leader’s effective communication style and questioning attitude were mirrored in the actions of her staff. The liaison to the SOC was pro-active in contacting that facility to ascertain its activation status and to ensure that it had the most recent plant information during activation. This same liaison, after reporting to the SOC, continued to promote effective communication. An example of this was when he was informed of the

sounding of the offsite emergency sirens in the emergency planning zone (EPZ) one half hour after the sirens were sounded at 1010. He ensured that the report was circulated to all response facilities that needed to know this fact.

The administrative assistant in the accident assessment center also displayed effective communication practices. She ensured that all incoming faxes were copied and distributed among the responders and relayed to the RCP staging area for that facility's benefit.

Logkeeping by the accident assessment center responders was performed very well. Logs were comprehensive and legibly written such that the events they chronicled would be easily re-constructed and understood. They captured all important exercise events and contact information for other facilities. The most impressive example of this was the log kept by the assistant to the SOC liaison who, after being deployed to the SOC, worked very hard to ensure that her detailed logs from the accident assessment center were posted to the WebEOC board while logging currently developing events. This ensured that DSHS activities were captured for review by the widest possible audience.

**Criterion 1.d.1:**
Communication equipment at the Department of State Health Services – Radiation Control Program (DSHS-RCP) interim accident assessment center was adequate to support the emergency response and it was effectively used by the facility responders. Commercial telephone is the only method of communication available to this facility; however, considering its remote location from the majority of the offsite response facilities and the information it needs to obtain and provide, commercial telephone is the only effective method of performing its communication requirements.

Two directly accessible external telephone lines are routed to the interim accident assessment center in room N-110 of the DSHS-RCP Austin headquarters. One of these is used for fax traffic and the other for voice traffic. There is also an internal extension line available for voice traffic. Responders effectively used this internal line primarily for outgoing telephone requests so that incoming calls would be received expeditiously. The directly accessible external voice line was a base station connected to two cordless satellite telephones with a remote charger. This arrangement ensured that a cordless telephone was always either charged or charging for back-up use.

The responders also used cellular telephones extensively. Nearly all six responders brought their cellular telephones to the facility. The accident assessment center leader and the liaison to the State Operations Center both relied heavily on cellular telephones to communicate. There were no reported connectivity problems for these cellular telephones during the exercise.

The responders effectively were able to use the commercial telephones to contact all facilities and responders they needed to communicate with. This included communication with the Chief of Field Operations as she was traveling by car to the Emergency Operations Facility. Two minor communication problems occurred during the exercise; however, these problems were not so severe as to adversely affect the response to the event. First, there was a period in which the Emergency Operations Facility (EOF) was unable to communicate with the accident assessment center such that the EOF called a secretary in the DSHS-RCP offices and asked her to proceed to the accident assessment center and inform the responders to establish communication with the EOF. Communication was established immediately after the secretary's report. Second, while the leader of the accident assessment center was listening to a press briefing at the Joint Information Center on a cordless telephone, the phone battery went dead. Rather than either turning on the base station speakerphone or energizing the back-up cordless phone, she dialed the press briefing on her cellular telephone and put it in speaker mode. This resulted in the loss of some information, but it had no adverse effect on response. Neither of these instances prevented the effective performance of the essential functions of the accident assessment center.

**Criterion 1.e.1:**

There were adequate equipment and supplies in the interim accident assessment team room in room N-110 at the Department of State Health Services – Radiation Control Program (DSHS-RCP) headquarters building in Austin and the responders at that facility used them effectively during the time the facility was activated. The accident assessment team room was an extremely compact space that accommodated only six responders. There was an equipment cabinet that contained one desktop and one laptop computer, one printer, office supplies, response procedures and extra telephones. Responders quickly accessed this cabinet and set up their work stations when they reported to the facility.

Five emergency planning zone (EPZ) maps for the South Texas Project Electric Generating Station (STPEGS) were readily accessible in room N-110. These were:

Ten mile EPZ population by sector

Ten mile EPZ emergency response zones
Ten mile EPZ pre-established environmental monitoring points
Ten mile EPZ map of industrial, recreational and special facilities
Fifty mile EPZ map (divided into wind rose sectors)

The DSHS-RCP responders referred to the first three of the above maps during the exercise. Whenever the DSHS-RCP accident assessment team received a report of a change of wind direction, they checked the population by sector map to assess the number of people who potentially would be affected by a release of radioactive material if one were to occur.

A map case containing additional maps was also present in the accident assessment team room although the responders did not refer to these maps during the exercise. This case contained maps of 10 mile EPZ emergency siren locations and evacuation routes as well as additional 10 and 50 mile EPZ sector maps.

A whiteboard with markers, a spare printer and a generic pressurized water reactor simplified plant piping diagram also were present in the accident assessment team room. Accident assessment team responders occasionally referred to the plant piping diagram as plant conditions were reported from STPEGS.

No radiation monitoring instruments, dosimeters or potassium iodide tablets were staged at the accident assessment team room in Austin due to its extremely remote location relative to STPEGS and any potential sources of radiation.

**Criterion 2.b.1:**
The interim accident assessment center at the Department of State Health Services – Radiation Control Program (DSHS-RCP) office building in Austin was deactivated before an offsite release of radioactive material occurred. Therefore, the staff at this facility was not tasked with performing radiological assessment and protective action recommendations and decisions as required by this criterion. This activity was only performed by the DSHS-RCP staff at the near site Emergency Operations Facility. The staff at the interim accident assessment center did, however, perform a single dose assessment at 0845 prior to the beginning of the offsite release. This dose assessment, using the STAMPEDE computer program, was made using plant and meteorological conditions known at the time of the assessment. Although no offsite doses were generated for these conditions, the single dose assessment run verified the operability of the

STAMPEDE program by correctly identifying the potentially affected sectors for the input wind direction and generated plume travel times for various distances for the input wind speed. This information would have been of use to responders if a release of radioactive material had occurred while the facility was still activated.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.4 Department of State Health Services - Radiation Control Program at the Emergency Operations Facility

**Criterion 1.a.1:**
The Department of State Health Services (DSHS), Radiation Control Program (RCP) staff had arrived at the staging area prior to the start of the exercise as stated in the extent of play. All state staff responding to the Emergency Operations Facility (EOF) had arrived and signed in on the status board prior to 0705. The staging area is located on 7th Street at the Civic Center in Bay City, Texas.

In the event of a real emergency, DSHS has a 24 hour answering service which could receive the call or the call could be received in the offices of DSHS RCP. If the notification occurs after hours, DSHS RCP investigators are notified through the 24 hour answering service. The three REP Emergency Planners would be notified and would help facilitate the response efforts which would include a call out to all responders. If the notification is received during business hours, DSHS RCP staff would be notified in person or via cell phones. Additionally notification occurs through the automated dialer system operated by the State. This system calls out to staff through cell phones, email, and home phones. The automated message would guide and/or direct staff of required actions.

At 0752, the Incident Commander (IC) received a drill message stating that South Texas Project (STP) declared an Alert. It was also stated that there was no release in progress. The IC

conducted a quick briefing to all of the staff located at the staging area. At this time the IC pre-deployed the Initial Accident Assessment team to the Emergency Operations Facility (EOF). The initial Accident Assessment team included 5 people. The pre-deployed Initial Accident Assessment team arrived at the EOF at 0805. Just prior to arrival at the EOF at 0802, the Accident Assessment Staff received notification of the Alert through the auto dialer system to their cell phones. The evaluator observed and heard the auto dialer message regarding the Alert notification. Additionally the Assistant IC, who was a member of the Initial Accident Assessment team pre-deployed to the EOF, was notified by Peirce County Emergency Operations Center (EOC) that STP declared an Alert. At 0809, the IC who was still located at the staging area, received confirmation that the Initial Accident Assessment Team had arrived at the EOF and were in position. The second Accident Assessment Team arrived at the EOF at 0908. Upon arrival, the IC conducted a briefing and took charge of the Accident Assessment Team and requested that DSHS RCP staff in Room N-110 at the State EOC could stand down. The EOF was considered operational at 0915 when the official notification to stand down was conducted to the State EOC room N-110.

Additional notifications for the Site Area Emergency (SAE) and General Emergency (GE) declarations were received through the DSHS Liaison located in the EOF Command Center Area and through the PA system located in the EOF. The IC received the notification for the SAE at 0949 and the General Emergency at 1108. The notification for termination of the exercise was received through the same process. The IC received notice of termination of the exercise at 1320. The IC confirmed and verified all additional notifications by talking with the DSHS EOF Liaison and EOF Utility staff.

**Criterion 1.b.1:**

The Emergency Operations Facility (EOF) is a new facility housed in the Center for Energy Development which is located at 4000 Avenue F, Suite C, Bay City, Texas 77414. This EOF is located 12.5 miles from South Texas Project (STP) and resides outside the 10- mile Emergency Planning Zone (EPZ). The Department of State Health Services (DSHS) Radiation Control Program (RCP) has a large working room located within the EOF. The EOF has portal monitors at the entrance of the facility and a decontamination room, if necessary. Security is established prior to entering the facility and Security has a separate room and space within the facility. There are restrooms established for men and women. The men's room offers two urinals and one stall. The Women's room offers two stalls. Both facilities provided handicap access. The auxiliary rooms included an electrical room, kitchen/break room, communication room and a

couple of offices. The main portion of the EOF is called the Command Center, and serves as the heart of the facility. The Command Center houses the utility staff responding to the emergency. Other keys rooms within the EOF include the room mentioned above for the State, Utility Dose Assessment, Administration, Public Affairs, an NRC room, and conference rooms. Each room offers proper lighting, furniture and enough space to support the functions designated for the area. The ventilation system provided enough air flow to keep the rooms cool during the exercise. A schematic of the facility was provided and matched the actual setup of the facility. The schematic is not located in the procedures. The EOF has backup power provided by a Generac gasoline generator. This backup generator should provide enough power to operate the EOF, if necessary.

**Criterion 1.c.1:**

The Department of State Health Services (DSHS) established an Incident Commander (IC) and an Assistant IC as soon as the Alert notification was received. Both the IC and Assistant IC were located at the staging area in Bay City, Texas. The IC conducted a detailed briefing to all responders located at the staging area. This briefing included the current meteorological data, Emergency Action Levels (EAL), Emergency Classification Level (ECL), and direction to the Initial Accident Assessment team for pre-deployment to the Emergency Operations facility (EOF). The initial briefing was clear and concise, and provided enough direction for all staff to start preparing for the different actions required. Additionally, the IC coordinated with staff at the county and the State Emergency Operations Center (EOC).

The IC sent the Assistant IC to the EOF with the Initial Accident Assessment Team, while the IC stayed at the staging area. The Assistant IC took command of the EOF staff until the arrival of the IC at the EOF. The Assistant IC conducted appropriate briefings and provided enough direction and control for the EOF staff to follow procedures to perform their duties.

The IC arrived at the EOF at 0908 and performed an initial briefing to gain situational awareness. The IC took command and provided this information to all appropriate staff located in different EOCs. The IC kept in close contact with staff at different locations, and provided updates and verified information.

The IC exercised good command and control during the briefings and conducted the briefings at appropriate intervals. The IC also called a briefing whenever there was a concern of a rumor or issue that needed attention by all staff. The Assistant IC supported the IC and ensured that

information moved forward to other Offsite Response Organizations (OROs) at different locations. Information was disseminated through the phone lines and followed up with fax when appropriate.

**Criterion 1.d.1:**
Communications equipment was adequately demonstrated at the South Texas Project Electric Generating Station (STPEGS) Emergency Operations Facility (EOF). The primary means of communication at the EOF was the Motorola Astro VHF radio. Alternate means of communications were provided by State issued cellular telephones. There were also multiple landlines and a facsimile machine (FAX) located in the State Accident Assessment Room that were used during the exercise.

Communications links were established and maintained with appropriate locations and all communications capabilities were managed in support of emergency operations. Radio checks were performed prior to departure from the Department of State Health Services (DSHS) Staging Area. The Field Monitoring Teams (FMT) were provided with the Field Team Leader's (FTL) cellular telephone number before their deployment. Occasionally when the radio communications had some interference, the cellular telephone communications were used and performed flawlessly. The FTL maintained a log of all communications with the FMTs. There were no communications failures.

**Criterion 1.e.1:**
The equipment and supplies to support operations were successfully demonstrated at the South Texas Project (STP) Emergency Operations Facility (EOF). There were ample displays and status boards, communications equipment, dosimetry, logs, forms, and office supplies available for use by the EOF staff.

Department of State Health Services (DSHS) personnel were issued dosimetry at the DSHS Staging Area prior to their departure to the EOF. Survey meters were only issued to Field Monitoring Teams (FMT) at the DSHS Staging Area, not to EOF staff. There were 150 blister packs of IOSAT potassium iodide (KI) (14 tablets per blister pack, expiration date of April 2011), 200 Landauer Thermoluminescent dosimeters (TLD) (collected and analyzed annually), and 200 high range and 200 low range direct reading dosimeters (DRD) available at the DSHS Staging Area. Drill TLDs were issued to personnel for the exercise. KI distribution was simulated. During an actual event, each emergency worker (EW) would be issued KI. The low

range DRDs were Arrowtech CDV-138 (0-200 mR, calibrated 10/22/2010) and high range DRDs were CDV-730 (0-20 R, calibrated 10/22/2010). Also, some personnel were issued Canberra Mini-Radiac electronic dosimeters (calibrated 09/30/2010). The dosimetry and KI are stored at the DSHS Exchange Building in Austin, TX and transported to the DSHS Staging Area.

Located in the State Accident Assessment Room of the EOF were multiple work areas with landline telephones, VHF radio, facsimile machine (FAX), printer, and an assortment of necessary office supplies. DSHS personnel brought their own laptop computers to the EOF. Backup power for the EOF is provided by emergency generators.

Wall-mounted displays in the State Accident Assessment Room were:
• EOF habitability sign
• Emergency conditions status board
• Field monitoring team data status board
• Designated evacuation routes, traffic and access control points map
• Industrial, recreational, and special facilities map
• Pre-selected monitoring points map
• Resident population distribution by sector map
• Meteorological data status board
• Protective action status board
• Dose projections status board
• 10-mile Emergency Planning Zone (EPZ) map
• Big screen display of Global Positioning System (GPS) Vehicle Tracking System for FMTs
• Digital clock

**Criterion 2.a.1:**
Department of State Health Services (DSHS), Radiation Control Program (RCP) staff received an Emergency Worker (EW) Radiation Exposure Record form when checking out the direct reading dosimeters (DRD) and permanent record dosimeters (PRD) at the staging area. This form provides the administrative daily dose limit as 200 mrem. Staff are guided to report a reading of 200 mrem or greater as soon as possible and prepare to leave the exclusion area, unless authorized to remain inside. The Emergency Operations facility (EOF) staff members were instructed to read and record their dosimeter readings. Since the EOF is located outside the 10 mile Emergency Planning Zone (EPZ) and offers habitability for the facility, it was not necessary to look at the DRDs every 15 minutes or 30 minutes. EOF staff was knowledgeable of the

administrative limit, and discussed what actions would be necessary in the event the administrative limit occurred.

The Incident Commander (IC) discussed how an authorization for radiation exposure in excess of the administrative limit and or the Protective action Guides (PAGs) would be authorized. The IC explained that a request would come to her, the IC would take the request under consideration, and would determine if the request was appropriate and necessary. Additionally, the IC commented that the request and the response would be captured in the log sheet, and then reported back to the appropriate organization.

The decision making process for recommending potassium iodide (KI) followed procedures. The recommendation for KI to emergency workers was for all emergency workers within Zone 1. This decision was based on dose projections conducted by the Accident Assessment.

**Criterion 2.b.1:**

The Accident Assessment team included 3 members working to support dose assessment. The staff worked together effectively to cover all aspects and components which included coordination with the utility dose assessment staff, the incorporation of field team data, and dose projection software modeling. The primary dose projection software is site specific software called STAMPEDE. The two backup dose projection software programs are NARAC and RASCAL 3.0.5, both of the programs are government owned and supported. The team worked closely with the utility staff to review and verify the different projections conducted by the utility and the State. Although the utility and state used the same STAMPEDE software modeling program as the primary, the use of the other software modeling programs contributed to the independent verification of dose projections. Discussion occurred when different results were received, even when the results were within a factor of 10. The discussion between utility staff and internally within the state staff led to the support of appropriate protective action recommendations (PARs). The dose projections were conducted in comparison to the Protective Action Guides (PAGs), and the protective action recommendations (PARs) were in compliance with the PAGs. Once the EOF staff agreed with the PAR, the Incident Commander (IC) disseminated the information via phone and fax to the other representatives at the Emergency Operations Centers (EOCs). The Accident Assessment team continually updated the meteorological data, plant status updates, and used actual field team data when appropriate and available to generate the dose projections.

**Criterion 3.a.1:**

The implementation of emergency worker exposure control was successfully demonstrated at the South Texas Project (STP) Emergency Operations Facility (EOF). The dosimetry and potassium iodide (KI) were pre-staged at the Department of State Health Services (DSHS) Staging Area, but are usually stored at the DSHS Exchange Building in Austin, TX and transported to the DSHS Staging Area.

The permanent record dosimeters used by DSHS personnel were Landauer Thermoluminescent dosimeters (TLD) (collected and analyzed annually). The high range direct reading dosimeters (DRD) were CDV-730 (0-20 R). The low range DRDs were Arrowtech CDV-138 (0-200 mR). All DRDs were calibrated on 10/22/2010. DRD were charged using CDV-750 chargers. Two members of the EOF staff were also issued a Canberra Mini-Radiac electronic dosimeter (calibrated 09/30/2010).

DSHS personnel were issued dosimetry and KI at the DSHS Staging Area. DHS personnel were reminded on proper wearing of dosimetry, and to check, log, and report dosimeter readings to the Field Team Leader (FTL). The FTL also reminded DSHS personnel on administrative exposure limits. The administrative exposure limits for the exercise were turnback at 100 mR, 200 mR/shift, and 1000 mR/day. The administrative limits were also printed on reminder cards that each person carried. The FTL stated that the shift limit of 200 mR would be equivalent to a 40 mR reading on their DRD, and the daily limit of 1000 mR would be equivalent to a 200 mR reading on their DRD.

DRD checks were performed routinely during the exercise, and DSHS personnel recorded their dosimeter readings in their logs and reported their readings to the FTL. By interview later in the exercise, it was determined that DSHS personnel were knowledgeable of their administrative exposure limits. The EOF staff knew to read their DRDs at least every thirty minutes, and to record and report their DRD readings. They also knew that they were to turnback if they read 100 mR on their DRD, and to report a reading of 200 mR during their shift and/or 1000 mR during the day. It was also determined through interview that should anyone reach their administrative exposure limits, they were to report their exposure to their team lead. Authorization to exceed administrative limits would have to be approved by the Incident Commander (IC). The IC stated that she would determine if it was necessary for the emergency worker (EW) to exceed the limits on a case-by-case basis. The exercise scenario did not call for

any EW to exceed the administrative limits.

**Criterion 3.b.1:**
Department of State Health Services (DSHS), Radiation Control Program (RCP) provided appropriate instructions and guidance regarding the recommendation of potassium iodide (KI) for emergency workers and institutionalized individuals. The decision to recommend KI to the emergency workers and institutionalized individuals included review and verification of understanding basic knowledge of KI. The location of the Emergency Operations Facility (EOF) staff was outside the Protective Action Recommendation (PAR) for KI, and therefore the EOF staff did not need to take KI. If KI was recommended for the EOF, staff would take KI and record it within the log sheets. Additionally, it could be reported to the IC. The field teams reported taking KI to the Field Team Leader and recorded within the Field Team Leader's log.

The distribution of KI to emergency workers occurs at the staging area in Bay City, Texas. If more KI is needed for different emergency workers, the Courier teams could transport additional KI out to the field.

Texas does not recommend KI for the general public.

**Criterion 4.a.2:**
Field team management was successfully demonstrated by the Department of State Health Services (DSHS). The Field Monitoring Teams (FMT) and Field Team Leader (FTL) were pre-staged at the DSHS Staging Area. Each FMT consisted of one DSHS staff member and one Texas Department of Public Safety (DPS) officer. DPS officers are used on FMTs for their ability to access locations that DSHS personnel would not normally have access to. The FMTs inventoried and performed operational checks on their equipment. All DSHS personnel signed in on the status board and were issued dosimetry and potassium iodide (KI) at the DSHS Staging Area.

At 0757, the FTL conducted a briefing with the FMTs and couriers. The briefing covered contact lists, KI consent forms, record logs, administrative exposure limits, radio checks and communications etiquette, cellular telephone communications, Global Positioning System (GPS) use, air sample field analysis, locating the plume edge, sample collection and return, and decontamination. A safety briefing was also conducted that covered weather conditions, road hazards, and other general safety topics.

At 0854, the FTL briefed the FMTs and couriers on staging area locations (pre-designated monitoring points). The FTL directed FMT #1 to deploy to Monitoring Point #61 and FMT #2 to deploy to Monitoring Point #54. The FTL also described the driving route to take to each staging location. The FTL departed the DSHS Staging Area at 0910 and arrived at the Emergency Operations Facility (EOF) at 0923.

It was determined by interview that utility FMTs had the responsibility of obtaining centerline radiation readings. The FTL tracked the FMTs locations using a GPS Vehicle Tracking System which was displayed on the FTL's laptop computer and the large wall-mounted video monitor in the State Accident Assessment Room in the Emergency Operations Facility (EOF). The display showed the pre-designated monitoring points and the FMT's status (direction of travel or if they were parked, and vehicle speed). FMT assignments were also tracked on the Field Monitoring Data status board.

At 0925, the FTL notified the FMTs that a release was in progress. At 0927, the FTL directed FMT #2 to move to Monitoring Point #61 due to a wind shift. The FTL requested that FMTs perform a dosimetry check at 0934, and to record and report their readings. Dosimetry checks were requested to be performed frequently during the exercise, and readings were recorded and reported to the FTL. At 0952, the FTL instructed FMT #1 to proceed to find the plume edge. The FTL also informed the FMTs of the current meteorological data. At 0956, the FTL instructed FMT #1 to watch their vehicle's odometer while travelling from the intersection of Country Road 1468 and Country Road 521, in order to mark the distance travelled from the intersection to the plume edge.

At 1012, the FTL directed FMT #2 to travel toward Monitoring Point #54 and for FMT #1 to closely monitor their survey meter. At 1020, the FTL directed FMT #1 to proceed until they reached a 2 mR/hr reading on their survey meter. Once this area was located, FMT #1 reported the coordinates of their location to the FTL. FMT #1 also performed open and closed window, waist and ground level meter readings and reported the readings to the FTL. At 1023, the FTL directed FMT #2 to proceed to Monitoring Point #61. At 1030, the FTL instructed FMT #1 to proceed to an area with a meter reading of between 2 mR/hr and 10 mR/hr in order to take an air sample, in accordance with procedures.

At 1034, FMT #1 completed taking an air sample and reported the location they took the air sample to the FTL. The FTL then directed FMT #1 to proceed to Monitoring Point #2, perform field analysis on the air sample, complete a chain-of-custody form, and transfer custody of the sample to the courier team.

At 1050, FMT #2 completed taking an air sample and reported the location they took the air sample to the FTL. The FTL then directed FMT #2 to proceed to Monitoring Point #2, perform field analysis on the air sample, complete a chain-of-custody form, and turn over custody of the sample to the courier team. At 1112, the mobile laboratory was called to confirm that they were ready to accept samples. At 1114, FMT #2 reported the results of the air sample field analysis to the FTL. At 1117, the decision was made to authorize the ingestion of KI for emergency workers in Zone 1. At 1124, the FTL informed the FMTs of the KI authorization. The courier teams reported to the FTL that samples were transferred to their custody, and that the courier teams were en route to transfer the samples to the mobile laboratory.

Once FMT operations were completed, the FTL directed the FMTs to report to the DSHS Staging Area for monitoring and decontamination, if needed. The EOF team also reported to the DSHS Staging Area at the end of the exercise. All response personnel turned in their final dosimeter readings, dosimeters, and signed out on the status board.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 3.a.1, 3.b.1, 4.a.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.5 Department of State Health Services - Radiation Control Program Field Monitoring Team One

**Criterion 1.d.1:**

Field Monitoring Team 1 used both two-way radio and cell phone during the exercise. Both communication systems were demonstrated and functioned properly. Two-way radio was the primary communication method between the Team and the Field Team Leader. Cell phones

were used as backup and when a direct communication was desired. There were no communication problems noted.

**Criterion 1.e.1:**

Field Monitoring Team (FMT) 1 was very well equipped. They had two Thermo E-600 radiation survey meters, one primary and one backup. The primary survey meter used during the exercise was serial #3557, calibrated on 8/11/2010 and due for re-calibration 8/11/2011. A calibration sticker was on the underside of the meter and indicated the calibration date, the calibration expiration date (annual recalibration) and the check source readings for the various detector probes and a +/- 20% acceptance range for each probe check source reading.

The Thermo E-600 meter was equipped with three separate detectors for various types of radiation:

- SSPA-8 1" x 1" sodium iodide (NaI) scintillator gamma probe, serial # 726784
- SHP-270 energy compensated "hot-dog" probe, serial # 00991
- SHP-360 Pancake probe, serial # 00972/00985.

All three probes were properly source checked before use with a cesium-137 button source at the Staging Area as described in the Field Team procedures, and were within the prescribed +/- 20% limts.

Field Monitoring Team 1 was issued dosimetry and simulated potassium iodide at the staging area at the Bay City Civic Center. The Texas Department of State Health Services (DSHS) member was issued a Canberra mini-Radiac model 113 electronic dosimeter, serial #7076 that was calibrated on 9/30/2010 and due for recalibration on 09/30/2011. Both Team members were issued 0-200 mR Arrowtech model 138 and a CD-V 730 direct reading dosimeter (DRD). The Team members indicated that leak test records for the DRDs were kept in a central location. Both Team members were issued simulated thermoluminescent dosimeters (TLD) for the execise. There were 200 Landauer Luxel OSLs dated Jan 01- Dec 31 were available at the Staging Area (see below).

They had more than adequate supply of dosimetry and potassium iodide. Texas Department of Public Health employees brought a box from their office in Austin that contained:

150 (14) tablet blister packs of iOSAT KI, expiration date 04/2011

200 Landauer Luxel TLDs (dated Jan 01- Dec 31)
4 (10 pack) sleeves of Radeco GY-130 silver zeolite cartridges(expiration 8/2015)
1 box of miscellaneous protective clothing (booties, gloves, coveralls)

Addtional supplies are maintained in Austin.

The Field Team was equipped with two different Global Positioning System (GPS) units, one that was portable and one that was attached to the vehicle's computer system. They had a ten-mile Emergency Planning Zone (EPZ) map board that showed the designated Monitoring Points, and included a rotating indicator that showed the plume width for different atmospheric stability classes. The 10 mile EPZ map was adequate, but was difficult to read close in to the plant and may have contributed to the team making a wrong turn and driving the opposite direction from the Field Team Leader's instructions.

No traffic access control points were observed.

**Criterion 3.a.1:**
Two pocket ionization chamber (PIC) type direct-reading dosimeters (DRDs) were issued to each Field Monitoring Team (FMT) member. One was an Arrow-tech Model 138 0-200 mR range, the other was a higher range CDV-730. One Canberra Mini-Radiac model 113 electronic direct-reading dosimeter was issued to each team. The team members periodically would call in their dosimeter readings to the Field Team Leader by radio.

Team members were briefed at the Staging Area at Bay City Civic Center before deployment. The briefing included a summary of the turn-back dose rate level of 100 mR/hr and the shift total dose limit of 200 mR with a default DRD correction factor of 5, and that the indicated exposure on the DRD would be 40 mR for the shift limit. Authorizations for additional exposure were not required during this exercise, but the team members indicated that they would request permission for additional exposure from the Field Team Leader if it was necessary.

The Team members were aware of the function of the dosimeters and trained in reading them. The dosimeters were read periodically during the exercise and readings were radioed into the Field Team Leader, and were recorded on Attachment 1 to Procedure 7 at the close of the exercise.

Team members were issued simulated thermoluminescent dosimeters (TLDs) for the exercise. Landauer OSL dosimeters are provided for Permanent Record Dosimeters in a real event.

**Criterion 4.a.1:**
Field Monitoring Team 1 had adequate instrumentation to perform field measurements of direct radiation. The Team had a Thermo E-600 with the SHP-270 high range beta-gamma "hot-dog" probe that is appropriate for taking dose rate measurements in the field. Readings were taken with open and closed window, at ground level and waist high where and when air samples were taken, and as directed by the Field Team Leader.

Air sample filters were counted with the Thermo E-600 survey meter using the SHP-360 probe, which is a non-energy compensated thin window pancake type detector. The particulate filter and charcoal filter cartridge are counted separately and the results are reported in net counts per minute (CPM) for each filter, after background is subtracted. The filter counting results are radioed into the Field Team Leader and recorded on Attachment 6 to Procedure 10.

A cesium-137 button source was used to check each survey meter - detector probe configuration for operational accuracy before deployment into the Emergency Planning Zone (EPZ). The meter - probe combination was compared with the calibration sticker on the instrument for agreement within +/- 20 %.

**Criterion 4.a.3:**
The Field Monitoring Teams assembled at the Bay City Civic Center Staging Area. The Evaluator arrived at the Staging Area at about 0715 and met with Field Monitoring Team 1. This Field Monitoring Team is transported by Texas Department of Public Safety (DPS) vehicle, with a DPS Trooper driving. The vehicle is a large Sport Utility Vehicle (SUV) with lots of police equipment in it. Some of this equipment was removed to make room for the exercise Controller and Evaluator and the Field Monitoring Team's equipment, but it was still crowded.

Field Monitoring Team 1 is equipped with an SAIC/Radeco automatic air sampling pump, model H-810 serial #3349, which is used to pump a measured amount of air through a sample filter. The Evaluator observed that the air sampler was operationally tested before deployment into the Emergency Planning Zone (EPZ) at the Staging Area and functioned within acceptable parameters.

The team deployed into the EPZ with the high energy gamma probe, a 1" x 1" NaI detector attached to Thermo E-600 survey meter. They were sent to a location near the Plant where the edge of the plume was encountered. The Team traveled west on hwy 521 until the gamma detector simulated increasing radiation > 1000 cpm on the gamma probe. The Team stopped and switched to the the high range dose rate "hot-dog" probe, and proceeded westward until the dose rate increased to about 10 mrem/hr closed window reading. They then reversed and backed up to a safe location where the dose rate was approx 2.5 mrem/hr and called into the the Field Team Leader that they had found the edge of the plume at GPS coordinates N 28.80906 degrees and W 096.05536. The Field Team Leader then requested open and closed window GM dose rate measurements at ground level and waist level. The dose rate measurements were taken in an acceptable manner in accordance with established procedures. The dose rate measurements were reported back to the Field Team Leader as:

Ground level: open 55 mR/hr closed 28 mR/hr
Waist level: open 50 mR/hr closed 25 mR/hr.

The Field Team Leader then requested the Team take an air sample and report back when they had the sample in a low background area for analysis.

The air sampler was set up and activated, but indicated an air flow of approx 7 cubic feet per minute (CFM), which is outside the operating specifications of the device. The sampler flow rate control was turned down to approx 4.5 CFM and finished the sampling period. The sample period at 4.5 CFM is only about 3 minutes, so no significant change in meteorlogical conditions can occur. The sampler was recovered and removed to a low background area in accordance with the air sampling procedure. When the filter holder was removed from the air pump, it was discovered that there was no charcoal filter cartridge in the holder, so no sample had been obtained. A discussion was held with the Team and the Evaluator and it was decided that the sampling procedure could be re-demonstrated with a properly loaded sample holder. The other remaining sample holder was opened, and it was discovered that it also had no charcoal filter cartridge inside, and there were no other charcoal cartridges in the DPS vehicle. The spare cartridges had been left in the transport container, which had been removed at the staging area to make room for the Evaluator and Controller.

The team member stated that she had loaded the charcoal cartridges into the sample holders the previous afternoon and had left them in the transport container. Apparently some other person

had removed them later that day or in the morning before the Team left the Staging Area.

The Team called the Field Team Leader on the cell phone and notified the Leader of the situation. The Field Team Leader directed Field Team 1 to rendezvous with Field Team 2 and get an extra charcoal cartridge and return to the same location that the sample had previously been attempted. When the Team arrived back at the sample location, the plume had moved off further from the Plant, so there wasn't anything left to sample.

The Evaluator decided that the sample preparation procedure could be simulated since it didn't look like there would be time to get another sample taken. The Team demonstrated the sample preparation and counting procedure in accordance with the procedure in an acceptable manner. The particulate filter was removed with clean tweezers and placed in a glassine sample envelope with the intake side of the filter towards the X-mark on the sample envelope. The charcoal filter cartridge was placed in a zip-lock bag by one team member while the other team member held the bag open to avoid contaminating the outside of the bag, or cross-contaminating the sample filter cartridge. The filters were measured with the pancake GM detector on the Thermo E-600 as described in the procedures. The simulated gross counting results were:

charcoal - 1180 CPM
Particulates - 67.1 CPM

The charcoal filter bag was placed in another larger zip-lock bag along with the particulate filter, and sealed with evidence tape that had been properly marked and dated. The Team called in these results to the Field Team Leader using the two-way radio.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 4.a.1, 4.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: 4.a.3.

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CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on

the sampling media. (NUREG-0654, I.8., 9., 11)

CONDITION: Field Monitoring Team lacked necessary sampling filter cartridge to carry out sampling mission.

POSSIBLE CAUSE: Assumed that unknown third party removed filter that had been prepared the previous day by Field Monitoring Team member in anticipation of the exercise. The sample filter holder had been prepared the previous day and packed back in the transport container. Someone had removed the charcoal sample filter without the Team member's knowledge before the Team deployed into the EPZ.

REFERENCE: Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected.

EFFECT: Contrary to the requirement in Criterion 4.a.3, no sample was collected because the necessary sampling filter media was not in the sample holder while the sample pump was operating.

CORRECTIVE ACTION DEMONSTRATED: Another sample filter cartridge was obtained from Field Monitoring Team 2 and Team 1 returned to the sample location to repeat the sampling procedure. The sample preparation procedure was simulated in an acceptable manner.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.6 Department of State Health Services - Radiation Control Program Field Monitoring Team Two

**Criterion 1.d.1:**
The Texas Department of State Health Services Field Monitoring Team Two had at least two communications systems, at least one operated properly, and communications links were

established and maintained in support of Field Monitoring Team (FMT) activities.

The Texas Department of Public Safety, Highway Patrol provided an officer and vehicle to support field monitoring. The vehicle was equipped with a Motorola Astro radio, set to channel "Rad CT-3" for communication with the Field Monitoring Team Leader and other field teams. It is noted that the Motorola radio is the installed radio used by the State Highway Patrol officer on a daily basis. Prior to leaving the Bay City staging area, the Department of Public Safety officer called the Field Monitoring Team Leader on the radio to verify communication.

For back up communication, the Department of Safety officer had two cellular telephones, one with service by Verizon, the other by ATT. The Texas Department of State Health Services (DSHS) – Radiation Control Program team member had an ATT cellular telephone. Additionally, the FMT was provided with a telephone list prior to leaving the Bay City staging area.

During the exercise, the radio was used extensively. When outside the vehicle, an exterior speaker was turned on so the team could monitor radio activity. Cellular telephones were used on a couple of occasions when radio transmission was not clear. Additionally, the Texas DSHS – Radiation Control Program team member received emergency notification updates on her cellular telephone. When important communications were received or transmitted to the Field Monitoring Team Leader at the licensee Emergency Operation Facility, receipt and understanding of the message was confirmed. Radio and telephone communications content was logged by the DSHS FMT member. When there was a lot of radio traffic, the Field Monitoring Team Lead would direct field teams to wait before transmitting data (to allow time for him to complete another update, etc). No significant communication difficulties occurred during the exercise.

**Criterion 1.e.1:**
The Texas Department of State Health Services Field Monitoring Team Two had equipment, maps, dosimetry, potassium iodide (KI) and other supplies sufficient to support emergency operations.

Field Monitoring Team Two personnel were issued dosimetry and potassium iodide at Bay City staging area. The Texas Department of State Health Services (DSHS) – Radiation Control Program member was issued a Canberra mini-Radiac electronic dosimeter (calibration due

09/30/2011) that displayed both radiation exposure and exposure rate. The Texas Department of Public Safety, Highway Patrol officer was issued a 0-200 mR, Arrowtech CD V-138 Direct Reading Dosimeter (DRD) (leak checked 10/22/2010) and a 0-20 R, CD V-730 DRD (leak checked 10/22/2010). They were both issued simulated thermoluminescent dosimeters (TLD). It is noted that 200 Landauer Luxel TLDs (dated Jan 01- Dec 31) were available for issuance to Emergency Workers (EW) deployed from this location. Both FMT members were provided an EW exposure limit card that included important exposure control information for EWs.

Field team members were issued a "Thyro-Block" potassium iodide (KI) information sheet in lieu of actual KI. The actual KI available for issuance was inspected. One-hundred fifty blister packets of 130 mg iOSAT KI containing 14 tablets each was transported to the staging area from the DSHS – Radiation Control office in Austin. Available KI had an expiration date of April 2011.

Field Monitoring Team Two had a Thermo E-600 survey instrument (calibration due 8/10/2011) with three detectors. Calibration stickers were attached to the instrument and each detector. The included detectors were: model SHP-360 pancake Geiger-Muller (GM), a SHP-270 side window GM, and a SSPA-8 sodium iodide detector. An operability check was performed on the survey instrument. The pancake GM and side window GM were source checked with a five microcurie Cesium-137 source. Both detectors responded within +/- 20% of the values provided on the label on the bottom of the meter. The sodium iodide (NaI) detector was response checked; however, no acceptance criterion was provided. The DSHS Planner indicated that the NaI detector was used to initially detect a plume; it would be changed out with the side window GM for exposure rate readings. Additional survey instruments were available at the staging area but were not utilized.

The DSHS FMT member had a kit pre-packaged with FMT supplies. It contained various radiological survey, field sampling, and packaging supplies; the contents of the kit are detailed in evaluation criterion 4.a.1. Maps with sectors and pre-selected monitoring location were included in the kits. The Texas Department of State Health Services (DSHS) – Radiation Control Program Planner said that additional TLDs, DRDs, KI and field team equipment was maintained at the DSHS office in Austin and could be transported to Bay City if needed.

**Criterion 3.a.1:**
The Texas Department of State Health Services Field Monitoring Team Two managed their

radiological exposure in accordance with the plans and procedures.

Field Monitoring Team Two personnel were issued dosimetry and potassium iodide at the Bay City, TX staging area. The Texas Department of State Health Services (DSHS) – Radiation Control Program member was issued a Canberra mini-Radiac electronic dosimeter that displayed both radiation exposure and exposure rate. The Texas Department of Public Safety, Highway Patrol officer was issued a 0-200 mR, Arrowtech CD V-138 Direct Reading Dosimeter (DRD) and a 0-20 R, CD V-730 DRD. Dosimeters were zeroed prior to issuance. The issued DRDs were appropriate for allowing team members to read the administrative reporting limits and maximum exposure limits.

Both FMT members were issued simulated thermoluminescent dosimeters (TLD). Actual Landauer Luxel TLDs were available for issuance to Emergency Workers (EW) deployed from this location. Both FMT members were provided an Emergency Worker Radiation Exposure Record form and EW exposure limit card that included important exposure control information.

Prior to leaving the Bay City staging area, all four FMTs were briefed by the Field Monitoring Team Leader (FTL). During the briefing he reminded FMT members of their radiation exposure limits (100 mR/hr turn around exposure rate limit, 200 mrem per shift, 1 rem per day and 5 rem per incident). He said that their limits could be extended with proper approval. He reminded teams to read their dosimeters every thirty minutes and reminded them to use the correction factor (five times their dosimeter reading would equal their Total Effective Dose Equivalent Dose (TEDE) dose in rem; 40 mR on their dosimeter would equal 200 mrem). At the end of the briefing, one FMT member asked the FTL to repeat exposure limits; he covered all of the exposure limits again.

During the exercise, the FMT Two lead kept track of clock time and ensured team members read their dosimeters at thirty minute intervals. She wore a digital electronic dosimeter that displayed microR. Each time she read her dosimeter it was recorded on her log. The 0-200 DRD provided to the Texas Department of Public Safety did not measure any increase above zero during the exercise. Additionally, the FTL frequently reminded FMT members to read their dosimeters and instructed them to radio in their readings.

When FMT Two was initially deployed, the FTL gave them a travel route so they would approach the projected plume path from the north, and would not cross the path in the event a

release of radioactive material occurred during travel. During monitoring and sampling activities, it was noted that the FMT Two located plume edges only and did not enter higher exposure rate plume centerline areas.

Field Monitoring Team personnel maintained their individual exposures As Low As Reasonably Achievable (ALARA) by monitoring their exposure, the wind speed and direction and predicting the projected plume path while determining their travel routes. Both team members were interviewed regarding exposure limits. They reviewed their EW exposure limit card(s) and provided correct responses regarding shiftly, daily, and incident limits. They also knew their turn around limit was 100 mR/hr and that they could be authorized to exceed pre-established limits but would not do so unless directed by the FTL.

When FMT Two returned to the Bay City staging area they were processed through the EW monitoring area; all dosimetry and their Emergency Worker Radiation Exposure Record form were then turned into the individual acting as the facility's radiation control officer.

**Criterion 4.a.1:**
The Texas Department of State Health Services Field Monitoring Team Two were appropriately equipped to perform field measurements of radiation exposure and to sample for radioiodine and particulates.

The Field Monitoring Team (FMT) Two equipment described below was transported from the Texas Department of State Health Services (DSHS) – Radiation Control Program offices in Austin, TX to the Bay City staging area.

Field Monitoring Team Two had two boxes with FMT equipment. Equipment was inventoried by the DSHS FMT member prior to leaving the staging area. One large box contained the equipment specified in Texas Emergency Management Procedure 10, Monitoring and Sampling Airborne Gamma Releases. The box contained a power inverter, charcoal cartridges (40 Radeco GY-130 silver zeolite cartridges with an expiration date of August 2015 were available for use in an actual incident), particulate filter sample media, glassine envelopes, Ziplock type plastic bags in several sizes, large plastic "trash" bags, adhesive sample labels, a roll of tape, tweezers, pens, absorbent towels, a FMT area 10-mile plume exposure zone map, various FMT forms, shoe covers, gloves, a Garmin Nuvi GPS unit, and a notebook with relevant FMT procedures. Additional protective clothing was available, but not used during the demonstration.

The FMT was appropriately equipped with instrumentation capable of measuring gamma exposure rates and detecting the presence of beta radiation. The provided radiological instrumentation was capable of measuring a range of activity and exposure, including radiological protection/exposure control of team members and detection of activity on air sample collection media, consistent with the intended use of the instrument. The equipment included was an Eberline E600 survey meter with three detectors. The included detectors were: model SHP-360 pancake Geiger-Muller (GM), a SHP-270 side window GM, and a SSPA-8 sodium iodide detector. An operability check was performed on the survey instrument. The pancake GM and side window GM were source checked with a five microcurie Cesium-137 source. Both detectors responded within +/- 20% of the values provided on the label on the bottom of the meter. The sodium iodide (NaI) detector was response checked; however, no acceptance criterion was provided. The DSHS Planner indicated that the NaI detector was used to initially detect a plume; it would be changed out with the side window GM for exposure rate readings. Additional survey instruments and other FMT supplies were available at the staging area but were not taken into the field.

A Radeco H810 air sampler was available for use in collecting particulate and iodine air samples (calibration due 4/9/2011). Two air sample heads were provided. The air sampler was checked for operability prior to leaving the staging area. During the operability check, the sampler was run under load and the flow rate adjusted to the 2-4 cubic feet per minute value required by FMT procedures.

The Texas Department of Public Safety, Highway Patrol officer provided the FMT vehicle (a Chevrolet Defender), his laptop with Microsoft “Streets and Maps,” his installed radio and cellular telephones with two service providers.

**Criterion 4.a.3:**
The Texas Department of State Health Services Field Monitoring Team Two demonstrated that they could make and record ambient radiation measurements at appropriate locations, and could collect radioiodine and particulate samples.

In accordance with the extent-of-play agreement, Field Monitoring Team (FMT) Two assembled at the Bay City, TX staging area, inventoried and prepared their equipment, were briefed on FMT tasks and were deployed from this location. During the pre-deployment briefing, the Field

Monitoring Team Leader (FTL) briefed all four FMTs. The briefing addressed plant status, meteorological data, radio and cellular phone communications, use of their GPS, exposure control and exposure limits, strategy of their deployment and initial positioning, and field analysis of sample media. He also addressed safety issues and he instructed teams to return to the back side of the staging area so they could process through the Emergency Worker (EW) monitoring area.

Field Monitoring Team Two was given an initial monitoring location assignment of Monitoring Point (MP) 54. They were given route instructions so they would approach the MP from the north side and stay out of the projected plume path. It was noted that State teams locate and measure the edges of the plume, centerline measurements would be taken by the utility field teams.

They departed the staging area at 0913. While traveling to MP 54, the Texas Department of State Health Services (DSHS) – Radiation Control Program team member had the Eberline E-600 survey instrument turned on, with the SSPA-8 sodium iodide detector attached and place on the vehicle dashboard. She monitored radiation levels by listening to the instrument's audible response (background with this detector was 600-800 counts per minute). The team was advised of a release of radioactive material at 0925. The FTL indicated that the radioactive material release began at 0922. While enroute, the team was reassigned to MP 61. The team arrived at MP 61 at 0928 and advised the FTL of their position. The DSHS team member assessed their position relative to the plant and determined the plume path based on current meteorological information and stability class. She correctly determined that the plume was fairly narrow and that they were positioned approximately four miles from the plant, on the northeast side of the projected plume path. During the exercise, the FTL kept the field teams well informed on current meteorological data. The FMT DSHS participant frequently repeated the assessment described above to determine the plume footprint and their position relative to the projected plume path.

At 0954, the FTL informed all field teams that a plant team was getting increased radiation levels at approximately 1.5 miles out in sector Q. At 1004, the FMT was informed of a wind shift (from 151 degrees); FMT Two lead indicated that they were close to where the plume should be and that she would carefully monitor her survey meter. At 1012, the team was sent to MP 54. Field Monitoring Team One reported measuring 15 mR/hr over the radio.

At 1024, FMT Two was directed to travel north toward MP 61. They were told to watch their survey meter as they could pass the plume while driving. At approximately one mile north of MP 54, FMT Two detected an increase in radiation levels. The FMT lead changed detectors to the SHP-270 probe. She measured the following exposure rates: 3' closed window (CW) 5 mR/hr, 3' open window (OW) 10 mR/hr, ground level CW 6 mR/hr and ground level OW 12 mR/hr. The team immediately backed their vehicle up to a lower exposure rate area and informed the FTL of their radiation survey results. They were directed to return to their measurement location and take an air sample. It was noted by the FMT lead that an air sample was warranted because they met that criteria specified by procedure: the survey meter read 2 mR/hr or more and there was a difference between closed and open window readings. Air samples were to be taken in areas meeting the above criteria and measuring 2-10 mR/hr closed window.

Both FMT members got out of their vehicle at the air sampling location wearing shoe covers, paper suits and gloves. All but gloves were simulated. The Texas Department of Public Safety, Highway Patrol team member assisted in setting up the Radeco air sampler and kept time when the sample was started/stopped. The air sampler was started at 1041 and the flow rate adjusted to 2.9 cubic feet per minute. The sampler was set to collect a 10 cubic foot air sample. During sampling, the DSHS team member monitored radiation levels using the HSP-270 detector (the detector was covered with a thin plastic bag to prevent contamination of the detector). When air sampling was complete, she covered the air sample head with a plastic bag and placed the sampler in the back of the vehicle. She took another full set of radiation readings at waist and ground level. The reported values were approximately the same as noted above. This measurement verified that the plume had not shifted significantly during the sampling period.

Both FMT members removed their simulated protective equipment and got back into their vehicle. They were removed in a defined sequence to minimize transfer of contamination to the inside of the vehicle. After returning to the vehicle, the team drove to MP 61 to find a low background radiation area to package and analyze their sample.

At 1055, the FMT arrived at MP 61. Background radiation readings were obtained and determined to be 55 counts per minute. Following procedure steps outlined in Texas Emergency Management Procedure 10.1, Monitoring and Sampling Airborne Gamma Releases, Air Sampling, the DSHS team member set up a "clean area" using a clean drop cloth provided in her equipment kit. She wore one pair of gloves and removed the outer ring of the air sample head.

The particulate filter was carefully removed using tweezers and was placed in a glassine envelope with the collection side noted on the envelope. The glassine envelope was placed in a thin Ziploc style bag held by the Department of Public Safety team member. A sticker was put on the bag that contained pertinent sample data. At that time, she removed the section of the air sample head that covered the iodine sample cartridge. Wearing the same gloves that she put on when departing the vehicle, she removed the cartridge and placed it into a plastic bag held by the Department of Public Safety team member. A time out was called to address the potential for cross contaminating the sample by handling the iodine cartridge with a potentially contaminated gloved hand. The exercise controller worked with participants and discussed contamination control and sample packaging. The field monitoring team discussed two methods to handle the sample to minimize the potential to cross contaminate the sample (wear and remove an extra pair of gloves, or have the second person hold open the plastic bag and drop the iodine cartridge into the bag without touching the cartridge). The field monitoring team then demonstrated appropriate sample handling/packaging by removing the sample cartridge without touching the filter media.

After the particulate and iodine filter media was appropriately packaged, a field count was performed. The DSHS team member took readings using the SHP-360 pancake Geiger-Muller (GM) detector. Readings were noted as 600 counts per minute on the iodine cartridge and 55 counts per minute (background) on the particulate sample. An air sample analysis form was filled out with sample collection and analysis data. Air sample counting results were reported to the FTL via radio. Air sample analysis calculations were not performed in the field.

At 1126, the air sample and associated paperwork were transferred to a courier. Appropriate chain of custody was demonstrated as each party signed off on the chain of custody section of the Radionuclide Analysis Report form. Prior to accepting the sample, the courier noted that a contact radiation reading was not provided on the form; she did not accept the sample until this was corrected.

After their air sample was transferred to the courier, FMT Two was directed to MP 2. At 1304, they were directed to travel between MP 2 and MP 61. While traveling toward MP 61, the team measured radiation levels of 1-2 mR/hr, both open and closed window. This information was immediately reported to the FTL. At 1325, FMT Two was told that the exercise was terminated and they were to return to the staging area.

The team arrived at the staging area at 1334. The Department of Public Safety team member processed through the EW monitoring area. The DSHS team member demonstrated donning and doffing a full set of protective clothing. While donning and doffing, she utilized a guideline sheet from Procedure 26, Selection and Use of Personal Protective Equipment. She put on and removed in the appropriate sequence, two pair of shoe covers, a paper suit with hood, two pair of gloves and dosimetry.

All dosimetry and associated paperwork were turned into the individual acting as the staging area radiological control officer.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 4.a.1, 4.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: 4.a.3.

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CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.8., 9., 11)

CONDITION: Department of Health Services – Radiation Control Program Field Monitoring Team Two handled iodine air sample media in a manner that could cross-contaminate the sample (the iodine cartridge was removed from the air sample head with a potentially contaminated gloved hand).

POSSIBLE CAUSE: Texas Emergency Management Procedure 10.1, Monitoring and Sampling Airborne Gamma Releases does not include detailed steps that aim to minimize the probability of the sample being cross contaminated during packaging. Additionally, field monitoring team members indicated that they had not been trained on contamination control techniques while removing the iodine cartridge from the air sample head.

REFERENCE: NUREG 0654 I.8-9; Texas Emergency Management Procedure 10.1,

Monitoring and Sampling Airborne Gamma Releases, Air Sampling

EFFECT: If the iodine sample were cross contaminated, the resulting analysis would be imprecise and higher than actual. This analysis is used to make or confirm dose projections and protective action decisions. A cross contaminated sample could lead to more of the general population being evacuated than is warranted.

CORRECTIVE ACTION DEMONSTRATED: Training was provided to field monitoring team members on sample handling to prevent cross contamination of sample media. Consideration should be given to revising the air sampling procedure to include more detail or a note of explanation regarding contamination control.

A time out was called during the initial iodine sample packing. The exercise controller worked with participants and discussed contamination control and sample packaging. The field monitoring team discussed two methods to handle the sample to minimize the potential to cross contaminate the sample (wear and remove an extra pair of gloves, or have the second person hold open the plastic bag and drop the iodine cartridge into the bag without touching the cartridge). The field monitoring team then demonstrated appropriate sample handling/packaging by removing the sample cartridge without touching the filter media.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.1.7 Joint Information Center, Bay City

**Criterion 1.a.1:**
The Joint Information Center (JIC) successfully demonstrated effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.

Per the extent-of-play the JIC was pre-staged for the exercise. The JIC is located at the Best Western in Bay City. It used six rooms for operating, which were set up with appropriate tables, chairs, telephones, and facsimile machines prior to players arriving.

At 0734 the JIC staff received notification via pagers from the utility and began to arrive by 0745. The Matagorda County Emergency Management Director (EMD) notified its public information staff at 0745 by phone call to respond to the JIC, and the staff arrived at 0805. Texas DSHS were pre-staged at the staging area. At 0805 the public information staff received phone call and arrived at the JIC at 0828. The Department of Public Safety (DPS) dispatched their Public Information Officer at 0757; he was already at the JIC when he received the call on his cell phone. Texas Department of Emergency Management (TDEM) was notified by phone/email by the State Operations Center and arrived at 0800.

The media monitoring staff, public inquiry staff, admin staff, and spokesperson staff all began working in their respective rooms after signing in with security. The JIC Administrator used Rapid Notify system to schedule the initial teleconference for media to call in at 0820. The STP spokesperson briefed the media about the situation and invited them to send representatives to the JIC for future press conferences.

After all necessary staff arrived at the JIC due to the Alert Emergency Classification Level (ECL); the JIC was operational at 0830. All subsequent ECL notifications came from the plant via phone, with fax as backup The SAE was received at 0946 and the General Emergency at 1108.

The key positions for the JIC to operate are JIC Director, Company Spokesperson, Technical Spokesperson, Technical Liaison, Media Relations, Public Inquiry, Administrative Support Staff, County Public Information Officer (PIO), Texas DSHS PIO, DPS PIO, and TDEM PIO.

Mock media began arriving at 0845 following the initial teleconference to the Press Conference area and after checking in with security. The first press conference took place at 0900.

At 1030 the JIC Administrator simulated development of shift change to take place at 1300 and 1330. The shift change takes place over two thirty minute increments so that the amount of staff changing does not overwhelm the operation. The Administrator rotates the pre-determined Red, Blue, and White Teams for JIC staff.

**Criterion 1.d.1:**
At least two communications systems were available, at least one operated properly, and

communication links were established and maintained with appropriate locations. Communications capabilities were successfully managed in support of emergency operations.

The Joint Information Center (JIC) consisted of six separate work areas. The Admin Support room had telephones, two fax machines (one for sending and one for receiving), and personal laptops. The Public Inquiry room was equipped with computers, televisions with VCR capability, radios for news monitoring, and the NORSTAR telephone system including conference/speaker telephones to support the staff. The Spokesperson room multiple telephone lines, fax machine, and personal computers. The Press Conference room was equipped with Panasonic video camera with VHS capabilities, sound board attached to four wired microphones, and four cordless microphones, and a Public Address System to keep the staff informed during News Conferences. The Press Work area and Break room were each equipped with a teleconference phone.

Landline telephones were the primary means of communications; in addition personal cell phones, Blackberries, and fax machines were available as back-up. Communications checks were done on the telephones and fax machines to ensure communications were available. All methods of communication were successfully demonstrated with no failures.

**Criterion 1.e.1:**
The Spokespersons Work Area had reference materials, including county plans and procedures, and JIC checklists available for review. A status board was maintained to track events and was continually updated by the utility Communicator who remained in constant contact with the South Texas Project (STP) Emergency Operations Facility (EOF) via telephone. WebEOC was also monitored throughout the exercise. A bulletin board was used to post copies of the press releases. Equipment included several commercial telephones, cellular phones, facsimile machine, laptops and printers.

Numerous visual displays and maps were effectively used in the Press Conference Area to explain events and answer questions from the media. They included a magnetic board depicting STPEGS EPZ map with industrial, recreational, and special facilities identified. Displays were also maintained with the current Emergency Classification Level (ECL). Photographs and plant diagrams of STP, and emergency information/brochures were displayed. Equipment to support the new briefings consisted of four wired microphones at the press conference area and podium. Two additional handheld microphones were available for the media. Video cameras were used

for recording press conferences, interviews and news stories.

The Media Work Area had ample space for video production and editing equipment, and drop lines for fifteen commercial telephones.

The Media Monitoring area consisted of 3 TV/VCR combination units for monitoring and/or recording of the major news networks, radios with recorders to monitor and record both AM and FM stations in the area, and a computer station for monitoring the major news websites as well as government agency websites.

Displays and job aids available to Media and Public Inquiry included a status board for tracking rumors and trends, a 10-mile EPZ map, Emergency Classification Level (ECL) definitions and frequently needed phone numbers. Laptop computers were also used to provide internet access and monitor Public Information Emergency Response System (PIERS), an online communication/information program.

The Administrative Support area included two copiers, one outgoing facsimile machine, one incoming facsimile machine, and one laptop computer. A fully stocked supply cabinet was also available.

**Criterion 5.b.1:**
Spokespersons and support staff from South Texas Project (STP), Matagorda County, and the State of Texas gathered shortly after the JIC activated at 0830 and began strategizing for their first news conference. They, along with the JIC Director and key JIC team leaders, coordinated information from their respective agencies and crafted key messages. This process was almost constant except for the time they spent in news conferences throughout the day. Each news conference was preceded with an informational meeting and then followed with a hotwash in which messages and strategies were critiqued and honed in anticipation of the next news conference.

The Public Information and Media Inquiry (PI/MI) team began answering calls shortly before the JIC activated. They used a public information brochure, maps, displays and relevant information stored on the online information/communication PUblic Information Emergency Response (PIER) system to answer the calls. One staff member operated a phone line dedicated to media but all Public Inquiry team members are cross-trained and able to take over the media line at any

moment. The PI/MI Team Leader instructed the team to remain calm, deliver accurate information that had been authorized for release and be alert to rumors. A status board operator kept the status board updated on events, rumors and trends. He also relayed information that he received from other areas of the JIC. A Media Monitor searched TV, radio and the internet for media stories to analyze. Mock media stories were brought to the mock media in VHS, digital radio or print formats. He scoured the stories and relayed media misinformation or rumors to the PI/MI Team Leader. Calls were logged using the PIER program. One team member monitored PIER to relay information or media questions to the team. For callers speaking foreign languages, operators consulted a translation firm, LLE, that joined the calls for translation purposes. The translation firm translated calls made in Japanese, Russian and Vietnamese. The PI/MI team identified numerous rumors, including smoke/explosions at the plant, injuries, contaminated water and a decreased statewide power grid, that were relayed to the media either through phone calls, news conferences or news releases.

The Media Relations and PI/MI Team Leads met with the JIC Director and all spokespersons in pre-briefings. They joined their colleagues in updating the group with the latest information from their areas. The Media Relations Team Leader shared information regarding how many media were present at the JIC and what questions they were posing. The PI/MI Team Lead shared the number of calls as well as rumors and trends that surfaced during the calls.

The Media Liaison Team set up the Media Briefing Room with signs, displays and large photos to help the media with background for their stories. At a sign in desk outside the Media Briefing Room, media were registered and given pamphlets that contained fact sheets, brochures, maps and contact numbers for more information. The Media Liaison team facilitated a tour of a DSHS Mobile Lab parked near the JIC. Two media members were taken for a tour with promises for others to tour later. Media Liasions also demonstrated the process of a reception center.

Five news briefings were held during the exercise and all were recorded. The first briefing was held 31 minutes after the JIC was declared operational. The JIC Director moderated the news briefings while allowing the media access to the spokesperson. All spokespersons were provided an adequate amount of time to give updates. They composed and delivered concise, accurate information. Additionally, interviews and tours were provided to the media as requested.

News Briefing No.1 at 0901 – The Company Spokesperson reported an Alert at South Texas Project occurred at 0725. An increase in radiation levels was reported, and STP was working to

identify and isolate the source. No release or injuries had been reported. The Matagorda EOC had been activated and communications with Matagorda County officials, State and the Nuclear Regulatory Commission had been established. The Matagorda County Spokesperson emphasized the health and safety of residents and visitors was their first priority. The County Spokesperson also informed the media, as a precautionary action, an early dismissal was conducted for students and staff from Tidehaven Independent School District (ISD) and Matagorda ISD. The American Red Cross had also been contacted, who had notified all special needs individuals in the area of the Alert. In addition, the public was informed to stay tuned to radio stations 92.5 FM and 102.5 FM. The Company Spokesperson and the Matagorda County Spokesperson addressed the mock media and reported that no protective actions were necessary at the time.

News Briefing No. 2 at 1002 - The Company Spokesperson reported a Site Area Emergency at STP. It was also reported that there was a rumor of an explosion at STP. The rumor was immediately dismissed and the media was advised no explosion had occurred on-site or been reported. The Company Spokesperson reported a steam generator tube leak in Unit 1 caused a breach and they were shutting down Unit 1. Plant officials were focusing on the assembly and accountability of all plant workers. The Matagorda County PIO advised that everything was contained on-site and there was no immediate threat to the residents. The Texas Department of State Health Services Spokesperson advised that they had four field teams currently monitoring conditions and a mobile lab on standby, as a precautionary action. The DPS Spokesperson reported officers were on the scene to assist law enforcement if needed. These officers were HAZMAT certified and would also be available to escort field teams. Again, the media was advised that there were no injuries reported. All representatives addressed the mock media's questions and concerns.

News Briefing No. 3 at 1116 – Even though the Matagorda County Spokesperson had been informed a General Emergency was declared at 1108 by STP during the 1108 caucus, the decision was made by the JIC Director and the Company Spokesperson to discuss the rupture while waiting for Matagorda County to be notified of the GE. The JIC Company Spokesperson reported the plant conditions continue to degrade, and there was a release; however, the release was below federally-approved operating limits and only caused concerns on-site. Monitoring around the plant perimeter and surrounding areas was being conducted. All non-essential plant workers had been sent to McAllister Reception Center. NRC Advanced Teams were en route and expected to arrive at 1300 or 1400pm. The DPS Spokesperson updated the mock media

about a traffic accident that occurred at Highway 521 and Highway 327. Since this was reported as a possible fatality, he asked the mock media to be mindful of this when developing their news stories. The Matagorda County PIO reported that 6 special needs individuals had been transported to St. Peter's Lutheran Church and 4 special needs individuals were transferred to Legacy Retirement Community. The Matagorda County PIO also addressed residents with pets, and advised the mock media that more information could be found in the County's ypOne Yellowbook. He informed the media that if residents felt they needed to leave their homes, it was recommended that they take their pets. Since, pets aren't allowed in the reception center, the County animal compound would be open to care for pets and also had some pet carriers available if needed. However, the County PIO reminded the media to inform residents that if they had pet carriers, to take them along.

News Briefing No. 4 at 1153 – The Company Spokesperson reported a General Emergency due the degrading conditions at the plant. Matagorda County PIO reported residents in zones 1-7, 10, and 11 were being evacuated. It was also reported that all parks and beaches had been evacuated. The County PIO also reported that students at Bay City ISD had been released. The County PIO also advised that residents evacuating their homes, to place the "We Have Been Notified" sign in a visible location. Emergency information discussed from previous news conferences was recapped. When asked by the mock media for clarification on the location of the traffic accident, the DPS Spokesperson responded and confirmed the accident had occurred at Highway 521 and Highway 347. The DPS Spokesperson confirmed the roadway had been cleared and would not affect that particular evacuation route. The DPS Spokesperson also said that there were a total of fourteen Troopers assisting with the evacuation effort.

News Briefing No. 5 at 1117 – The Company Spokesperson reported additional support would be provided from the Texas National 6th Civil Support Team and Federal Radiological Monitoring and Assessment Center. The Matagorda County PIO reported that 363 STP workers and 64 residents had been processed through the McAllister Reception Center. St. Peter's Lutheran Church and First Baptist Church were open as respite centers. Texas DSHS reported their teams were currently collecting air samples. The DPS Spokesperson reported roadways were being monitored and were all clear. It was also reported that the State Operations Center had restricted air and rail traffic in the area.

South Texas Project (STP) issued five press releases during the exercise.

0851 - Press Release No. 1 - Notification of an Alert declared at 0725 at the South Texas Project Electric Generating Station (STPEGS) because a small amount of radiation was detected in a building adjacent to Unit 1's reactor containment building. An operations team is responding, and both units are at 100 percent power. Safety of employees is most important. Residents and visitors should tune to appropriate radio stations. STPEGS has begun activation of all onsite emergency facilities, and has established communications with Matagorda County and State of Texas officials. The press release had an informational sheet about Emergency Classifications attached.

1014 - Press Release No. 2 – STPEGS declared a Site Area Emergency (SAE) at 0946 when a radiation leak to the environment was detected. Field teams are working to determine if it has extended past the site boundary. Unit 1 is being shutdown. There is no immediate danger, but residents should prepare to take action. Matagorda County has activated the emergency notification system of sirens, alert radios, and telephone autodialer. After being alerted tune to appropriate radio stations. County officials have completed early dismissal of all students and staff at Tidehaven High School, Tidehaven Middle School, and Matagorda Elementary School. Residents should refer to the ypOne (telephone book) for emergency information. The press release had an informational sheet about emergency facilities involved in an incident and assembly and accountability of staff attached.

1117 - Press Release No. 3 – Radiation is being measured at the STPEGS site boundary; it remains an SAE and residents should stay tuned to the radio. All non-essential employees have been evacuated to the McAllister reception center. They are going through monitoring and decontamination, if necessary. Texas Department of Public Safety (DPS) is aiding local law enforcement. All parks within 10-mile radius of plant are closed. Nuclear Regulatory Commission (NRC) teams will arrive at 1300. Four field teams from Texas Department of State Health Services (DSHS) are in place. Public inquiry line is open and American Red Cross Operations Center can answer questions about the status of friends and family.

1201 - Press Release No. 4 – Declared a General Emergency at Unit 1 based on rising radiation levels because of a ruptured tube inside the steam generator. Approximately 2000 residents in Zones 1-7, 10, and 11 are being evacuated. Students at Bay City Independent School District have been released. Similar information from Press Releases 2 and 3 was included about where to find emergency information.

DSHS issued three news releases.

0915 - News Release No. 1 – Announced that radiation control emergency response team from the DSHS was activated in response to the event at STPEGS. At that time there was no release of radiation detected, but radiation control teams were available to provide off-site radiological monitoring and contamination control if necessary. It explained that radiation control personnel are trained to assess radiological effects, monitor radiological conditions, control the spread of radiological contamination, assist with decontamination of citizens and vehicles, and perform laboratory analyses of samples. It noted that information provided by the radiation control personnel would help city and county officials to determine or confirm appropriate protective actions if necessary.

1105 - News Release No. 2 – Announced that Radiation control monitoring teams from DSHS were taking radiological readings and collecting samples in the county to determine the extent of the radioactive release. A DSHS mobile laboratory was analyzing the collected samples. DSHS provided radiological and sampling information and recommendations to county and STPEGS officials for determining protective actions, as necessary. A DSHS team was monitoring and decontaminating STPEGS employees at the reception center.

1245 – News Release No. 3 - Announced that Radiation control monitoring teams from DSHS will continue taking radiological readings and collecting samples in the county until data indicates the evacuated areas around STPEGS are safe for the general public to return. The evacuations were ordered by Matagorda County Judge, Nate McDonald, and remain in effect. DSHS was assisting law enforcement at access control points with monitoring and decontamination of people and vehicles entering and leaving restricted areas. Monitoring and decontamination of evacuees was being vconducted at the only reception center opened at McAllister Middle School in Bay City. DSHS had also requested additional support from the Texas National Guard 6th Civil Support Team and Federal Radiological Monitoring and Assessment Center to assist in monitoring the extent of radiation. Plant officials have declared this a General Emergency, the most serious category used to describe events at a nuclear power plant.

Matagorda County Emergency Operations Center (EOC) issued one news advisory and two Emergency Alert System (EAS) Messages.

0928-News Advisory-1- Announced that Matagorda County officials had received notification of an Alert at STPEGS. There was no release of radioactivity. The Matagorda County Emergency Management Director (EMD) was activating the EOC. For precautionary purposes, Superintendents had early dismissed class early Tidehaven High, Tidehaven Junior High, and Matagorda Elementary Schools. Parents were told to pick up their children at school. All persons within 10-mile radius were reminded to review the information in the local ypOne telephone book. The public information in the ypOne yellow book provided a phone number to call for additional information and to stay tuned to 102.5FM or 92.5FM. The EMD authorized the message.

1034-EAS Message-1- Announced that Matagorda County officials had received notification that STPEGS was at a SAE. There was a release of radioactivity, which could pose danger to those living near the plant. The three schools within the 10-mile radius were now closed. The following parks were closed: FM521 Park, Bay-Cel Club, Riverside Park, Rio Colorado Golf Course, Carl Park, Lyondell Park, LCRA Park, and Matagorda Beach. All persons within 10-mile radius were reminded to review the information in the local ypOne telephone book. The public information in ypOne provided a phone number to call for additional information and instructed residents to stay tuned to 102.5FM or 92.5FM. The EMD authorized the message.

1307-EAS Message-2- Announced that Matagorda County officials had received notification that STPEGS was at a General Emergency. There was a release of radioactivity. The EMD recommended that Zones 1-7, 10, and 11 evacuate. The evacuees should report to and must process through the reception center at McAllister Middle School in Bay City. The message listed the routes evacuees should take to get to the reception center. Anyone without transportation should contact the Sheriff's Office. THe message repeated the same information about the closed parks as EAS Message 1. All persons within 10-mile radius were reminded to review the information in the local ypOne telephone book. It provided a phone number to call for additional information and to stay tuned to 102.5FM or 92.5FM. County officials would advise evacuees when it is safe to return. The EMD authorized the message.

Throughout the exercise the JIC demonstrated its ability to disseminate emergency public information in a consistent, timely and credible fashion.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2 Risk Jurisdictions

#### 3.3.2.1 Matagorda County Emergency Operations Center and Traffic/Access Control Point

**Criterion 1.a.1:**
The MCEOC successfully demonstrated mobilization for a radiological emergency at South Texas Project (STP). At 0735, the Sheriff's Dispatch room received a phone call on the orange dedicated telephone from STP to notify them that an Emergency Classification Level (ECL) of Alert was declared by the utility at 0725. The phone was answered by one of the Sheriff's Dispatchers. The Dispatcher recorded all the information on a Notification Form. The information was then confirmed by a fax received via the dedicated fax machine located in the Sheriff's Dispatch room. All subsequent changes in ECLs (SAE at 0950 and GE at 1112) were received and confirmed in the same manner, with the occasional addition of confirmation by telephone call between the Emergency Management Director and the Emergency Management Coordinator, each with their respective counterparts located at the Emergency Operations Facility.

The Dispatcher then notified another individual working in the Sheriff's Dispatch room of the notification and passed on the form in which she had recorded the information along with the fax that was received. The individual then stated that according to the plans and procedures that notification of the Matagorda County Emergency Operation Center (MCEOC) staff would be made for the Alert ECL. The notification was provided to the Command and Control group along with all additional MCEOC staff. The Direction and Control group consisted of the Emergency Management Director, Emergency Management Coordinator, Mayors of Bay City and Palacios, Matagorda County Sheriff's, and the Emergency Commissioner. At 0741, the notification was made via Rapid Notify, an internet-based software application that is pre-programmed with phone numbers of all EOC staff members. A pre-recorded message requiring a response from the end user is transmitted to notify staff to report to the MCEOC.

The MCEOC staff began setting up supplies and equipment and supplies at 0746 and was completed shortly after 0800. The MCEOC staff began arriving at 0746 and were required to check in with a Sheriff Deputy that was stationed outside the main entrance to the MCEOC. Each individual received an identification badge after completing the sign in information.

At 0802, the Emergency Management Director provided a briefing to the MCEOC staff in the Squad Room located just outside the main EOC room. The Emergency Management Director provided information to the staff that STP had declared an Alert and instructed the staff to proceed into the MCEOC in an orderly fashion and begin with their respective checklists for an Alert ECL.

At 0811, the EMD provided a briefing again to the staff and declared the MCEOC operational at 0814. The facility was declared operational when all positions at the MCEOC were staffed and working in accordance with the plans and procedures.

**Criterion 1.c.1:**
The Matagorda COunty Emergency Operation Center (MCEOC) successfully demonstrated Direction and Control for a radiological emergency at South Texas Project (STP). The Matagorda County Judge serves in the role as the Emergency Management Director (EMD) for operations at the EOC. The EMD has the overall authority for decision making and has the primary responsibility for operations in the MCEOC. The second in command is the Emergency Management Coordinator (EMC). Together the EMD and the EMC collaborated and made effective decisions in executing direction and control of the EOC staff and the operations.

The EOC was laid out with all support personnel surrounding the Command Staff. The EMD and EMC were positioned at the front of the room with clear views of all personnel and display boards throughout the EOC. The EMD demonstrated the ability to provide strong leadership with clear and concise instructions and expectations for the EOC staff. It was stated several times throughout the duration of the exercise to follow procedures, ensure public safety, and provide timely information to the Public Information staff. The EMD also demonstrated the ability to make informed decisions and utilized subject matter experts. The EMD directed all requests for supplies, personnel or equipment be submitted through the EMC using a request form. The EMC processed all requests in a timely matter as they were received and ensured follow-up on the requests was accomplished

The EMD conducted several briefings to the EOC staff during the exercise where vital information was provided. The EOC staff reported information during the periodic briefings as well. The EMD conducted briefings every hour on the hour and impromptu briefings were provided when Emergency Classification Levels (ECLs) changed (0950 Site Area Emergency, and 1112 General Emergency), and when vital status updates occurred. There were a total of nine briefings during the exercise.

At 0802, the EMD conducted an initial briefing to EOC staff in the Squad Room prior to the staff assuming their positions in the EOC. At 0821, the EMD briefed the staff to synchronize clocks, silence cell phones, and provide timeliness on reporting vital information, and to push information to the Public Information staff. At 0900, the EMD conducted the first of the hourly briefings and had key positions report on their status and actions taken to that point. The key positions that reported were Emergency Management Coordinator, Emergency Commissioner, Mayors from Bay City and Palacios, Matagorda County Sheriff, Chief of Police from Bay City and Palacios, Transportation Officer, Health Officer, American Red Cross, Texas Department of State Health Services, Texas Department of Emergency Management, Public Information, and other represented agencies as needed. All subsequent hourly briefings were conducted in the same manner and provided excellent situational awareness and information sharing.

Matagorda County is the only county located within the 10-mile Emergency Planning Zone for South Texas Project. The EMD had representatives from local cities, the state, and the Coast Guard located at the MCEOC which allowed for excellent coordination with all the Offsite Response Organizations that would be used for a radiological emergency at STP.

**Criterion 1.d.1:**
The MCEOC successfully demonstrated that there is sufficient communications equipment for a radiological emergency at South Texas Project (STP). The primary communication is the dedicated commercial phone from STP. It is orange and easily identified from the other commercial telephones used at MCEOC. There is also one phone located in the Sheriff's Dispatch room and another phone located in the main EOC room. The initial notification was received at 0736 and theh information was recorded on the appropriate form in the Sheriff's Dispatch. Subsequent notifications were received in the same manner throughout the exercise. The dedicated phones were staffed by a Dispatcher in the Sheriff's Dispatch room and by a representative from STP in the main EOC room. The Dispatcher was the primary person to relay

all notifications to the Emergency Management Director and Emergency Management Coordinator.

The secondary means of notification is received via facsimile (fax). There is a dedicated fax machine located in the Sheriff's Dispatch room. There are two additional fax machines located adjacent to the main EOC room as well. The two fax machines are labeled with one as "Receive" and the other as "Send". The one labeled "Receive" was used to receive all incoming notifications as well as other faxes such as press releases and fact sheets.

The two fax machines outside the main EOC room were staffed by two individuals who successfully demonstrated the capability to manage all incoming and outgoing faxes. The two individuals were very well organized and delivered all incoming notifications without delay to all pertinent staff members in the EOC. They worked very well together and demonstrated excellent teamwork.

Communications with fixed and mobile medical support facilities was accomplished through commercial telephones located throughout the main EOC room. Other communications equipment that was available at the MCEOC included a hard-wired satellite phone, cellular phones, and the radio system located in the Sheriff's Dispatch room.

Rapid Notify software program was utilized to notify the EOC staff to report for duty to the EOC. The Rapid Notify system is an internet-based program that is pre-programmed with phone numbers and provides a pre-programmed message that requires a response from the end user. This system was used during the esercise with no communication failures identified.

**Criterion 1.e.1:**
The Matagorda County Emergency Operations Center (MCEOC) consisted of a main room, offices, and the Matagorda County Sheriff's Office Dispatch area. The building also had a kitchen area, bathrooms, and a generator was available if needed. Equipment and supplies were sufficient to maintain and support EOC operations.

The main room was set up with tables and chairs to support twenty-six (26) MCEOC staff members. Each station was equipped with a landline telephone, agency/representative placards, office supplies and procedures in accordance with the county plans. Several computers were located throughout the EOC and additional office supplies were available if needed. There were

four display boards mounted on the walls to track the significant events, plant status, emergency classification levels, and traffic and access control points. Overhead projectors were used to display the Emergency Operations Facility significant events and MCEOC actions/updates on three screens at the front of the room. In addition, there were three 10-mile Emergency Planning Zones (EPZ) maps identifying the zones, tracking of the plume and wind direction. A clock was also mounted at the front of the room.

The admin/communications office was furnished with desks, chairs, telephones, computers with printers, bookcases, tables, three fax machines, and a copier to support operation. The Squad Room was equipped with desks, computers/printers, telephones, and bookcases. This room was used for the initial briefing.

The radiological staff inventoried, inspected and operationally checked the following radiological equipment (kept in a locked cabinet in the main EOC room) prior to use or being issued to Emergency Workers (EWs):

- 2 Ludlum survey meters (calibrated on 6/23/2010 and due on 8/23/2011) with a Gieger-Muller (GM) Pancake Probes, a range of reading label (300 – 500), and a check source;
- 20 Electronic Personal Dosimeters (EPD) (calibrated on 6/29/2010 and due on 8/29/2011) and 1 EPD battery removal key;
- Extra batteries “D” cell for survey meters and “AAA” for the EPDs;
- 20 0-20R dosimeters (calibrated on 6/22/2010);
- 120 0-200mR dosimeters (calibrated on 6/17/2010);
- 8 Dosimeter chargers;
- 139 Thermoluminescent dosimeters;
- 100+ Potassium Iodide blister packs of 14 tablets (expiration date of 4/2011) with instructions.

The equipment for the traffic and access control points was provided by the Matagorda County Sheriff's Office which included the officer and their car, traffic cones, flares, light wand, road guard vest. If needed barricades could be obtained from the Police Barn or Highway Department.

**Criterion 2.a.1:**
Implementation of exposure control is the responsibility of the Matagorda County Environmental Health staff located in the Matagorda County Emergency Operations Center

(MCEOC). Even though the MCEOC is located outside of the 10-mile Emergency Planning Zone (EPZ), the staff maintained the ability to monitor and make decisions with regard to Emergency Worker (EW) exposure .

The Environmental Health Director worked with the Radiological Officers (RO) to ensure that EWs were provided adequate information and equipment to minimize the potential for exposure. The ROs effectively briefed all workers requiring dosimetry on the turnback exposure of 200 mRem and the ingestion of potassium iodide (KI) should the protection action decision be made for workers to ingest KI. These turn-back values were included on a laminated card attached to the EW dosimetry and they were also printed on the exposure control record for the EW. The Environmental Health Staff maintained open communication with the MCEOC staff to ensure that all EWs would receive dosimetry and KI as necessary. KI is maintained and stored at the MCEOC for EWs, as required.

Throughout the exercise, the Emergency Management Director (EMD) discussed the order for EWs to ingest KI should it become necessary with the Texas Department of State Health Service Liaison. Message traffic from the nuclear power plant recommended KI with concurrance from DSHS for Emergency Workers in Zone 1, but the county did not have Emergency Workers (EWs) deployed in this zone. The EMD was prepared to issue the order, however, the exercise play did not present the need to issue the order.

**Criterion 2.b.2:**
The Matagorda County Judge was responsible for making Protective Action Decisions (PADs) for the Matagorda County population. PADs were issued based on Protective Active Recommendations (PARs) received from the Emergency Operations Facility (EOF) at the plant.

During the exercise the County Judge coordinated with the EOC staff which included representatives from South Texas Project (STP) and Department of State Health Services (DSHS) as needed when EOF messages with PARs were received. The County Judge obtained concurrance from the EOC staff prior to making all decisions that impacted the public and Emergency Workers (EWs).

Message #7 declaring a General Emegency with a PAR for evacuations of Zones 1, 2, 3, 4, 5, 6, 10 and 11 was received at 1127. The County Judge and key EOC staff members gathered around the 10-mile Emergency Planning Zone map for discussion and recommendations. Immediately

following the discussion a PAD was issued to evacuate Zones 1, 2, 3, 4, 5, 6, 7, 10, and 11. In addition, an order for the siren activation was issued and an Emertgency Alert System (EAS) message was approved and fowarded to the EAS radio station for broadcast.

The State of Texas does not issue Potassium Iodide (KI) for the general public. Message traffic from the nuclear power plant recommended KI with concurrance from DSHS for Emergency Workers in Zone 1, but the county did not have Emergency Workers (EWs) deployed in this zone. The County Judge demonstrated the decision making ability for issuing KI even though it was not necessary for Matagorda County EWs.

**Criterion 2.c.1:**
The Matagorda County Judge was responsible for making Protective Action Decisions (PADs) in coordination with the Matagorda County Emergency Operations Center (MCEOC) staff. The American Red Cross (ARC) maintains a copy of the Special Populations List; the current list was dated October 26, 2010. PADs for special populations were effectively demonstrated.

The ARC and Transportation Officer (TO) with the assistance of the Matagorda Regional Medical Center and law enforcement officials worked closely with the County Judge when making decisions impacting the schools and the mobility impaired residents. The county does not have hospitals, nursing home, or correctional facilities in the Emergency Planning Zone (EPZ).

As an early precautionary action, following the initial briefing in the Squad Room at 0815, the TO began making calls to the Bay City, Matagorda, Palacios, Tidehaven, and Van Vleck Independent School Districts (ISD) recommending early release due to the unfolding events and the Alert declaration at the plant. All schools were in session. One actual call was made to a Superintendent and the remainder were simulated. The Matagorda and Tidehaven ISDs (located in the EPZ) initiated early release starting at 0830. The schools have a call down system to notify parents of early release. At 0851, the TO received confirmation from Matagorda and Tidehaven ISDs that all students had been released and departed the campuses.

Concurrently the ARC representative and support staff contacted the mobility impaired residents (7 families) and advised them of the plant status and prepared them for potential evacuations at 0820. Transportation was coordinated with the TO for special needs buses with wheel chair access. At 0955, the decision was made to evacuate residents and move them to a reception

center or a nursing home as needed. Bay City Police Department (BCPD) provided security at the request of the ARC.

Following Site Area Emergency (SAE) at 0950, precautionary actions and special populations evacuations, the decision was made to evacuate the parks and recreational areas within the EPZ. The order was given for the siren activation (sounded at 1010) and the EAS message was broadcast at 1015. The Matagorda County Police Department, U.S. Coast Guard and BCPD assisted with evacuations and notifications as needed. All evauactions were completed by 1112.

All decisions and actions made by the County Judge and EOC staff were conducted as per the County Plan's ECL protocols for the Alert and SAE.

**Criterion 2.e.1:**
The Relocation, Reentry & Return (R/R/R) demonstration took place following the plume phase exercise at the Matagorda County Emergency Operations Center (MCEOC). The MCEOC Recovery Committee consisted of County Judge, Matagorda County Emergency Management Coordinator (EMC), key state and local representatives, South Texas Project (STP) Liaison, and one support staff member for decision making. The County Judge was responsible for direction and control and overall operations with the assistance of the EMC.

At 1500, the MCEOC staff was prepared to move forward on the R/R/R phase. The controller briefed on the initial conditions starting at Day 2 & 7 and displayed Emergency Planning Zone (EPZ) maps with 1st Year Dose Rate and Aerial Survey data identifying areas of radiological concerns. The controller also informed the EOC staff that all evacuees were accounted for.

The media and local radio stations would be used to keep public informed throughout the R/R/R phase.

Relocation:

The Department of State Health Services (DSHS) representative kept the staff informed as technical data was available for decision making. This information would include areas that projected doses were in excess of relocation Protective Action Guides (PAGs), field samples, calculated exposure rates, and mix of radionuclides in deposited materials. This would be accomplished with the assistance of the SOuth Texas Project Electric Generating Station

(STPEGS).

The MCEOC staff confirmed the areas where no return was possible and decided to enlist the assistance of the American Nuclear Insurers and STP in processing claims for the residents impacted by the accident.

Local law enforcement agencies with the assistance of The Department of Public Safety and the National Guard would maintain security and control points to restricted areas.

Reentry:

The MCEOC staff would coordinate with DSHS when establishing Traffic and Access Control Points (TACPs) to control ingress and egress of traffic. The Radiological Officer had previously briefed the emergency workers (EWs) on exposure control; use of dosimetry, tracking and reporting data; and monitoring and decontamination procedures and locations. DSHS would advise on limited entry times and areas of concern to avoid.

The County Judge agreed that re-entry for the residents would be for retrieval of important possessions, critical items, or implementing protective measures for farm animals. The American Red Cross maintains a registration database for all evacuees which would be used to confirm residency in the restricted areas. There were no schools or vital services in the identified restricted areas.

The EMC was responsible for submitting requests for additional radiological equipment, dosimetry, and personal protective equipment (PPE) or resources to maintain 24/7 security and protection of personal property. DSHS and the Matagorda Regional Medical Center would provide the PPE and dosimetry. Additional resources could be requested through the State and National Guard.

Return:

The MCEOC staff continued receiving technical updates from DSHS and key support agencies on environmental and radiological data. DSHS would confirm the relaxation of restictive measures and ensure the county was kept informed. The technical updates would be used to assist in identifying the return area boundaries and road closures. The discussion included having

sufficient support for TACPs; security and equipment to maintain safe ingress/egress routes; close coordination with the ARC for residency verification; and ensuring the public was kept informed and educated on return procedures (i.e. cleaning vegetation to avoid ingestion of radiological material, etc). The public would be provided an emergency contact telephone number for questions.

There were no schools or vital services in the identified restricted areas. The general public was allowed to return home.

**Criterion 3.a.1:**
Two Environmental Health Radiological Officers (RO) provided an electronic alarming dosimeter, preset for the administrative limits (200 mRem turnback), and thermoluminescent dosimeters (TLD) for permanent record to a Matagorda County Sheriff's Deputy at the Matagorda County Emergency Operations Center (EOC). The deputy was being dispatched to deliver dosimetry to chemical plant workers in the evacuated zones. Upon completion of his mission, the deputy was to establish a Traffic Access Control Point. Instructions for wearing, reading and recording the dosimetry, ingestion of Potassium Iodide (KI), and dosimeter log sheets were provided to the deputy before leaving the EOC. The Deputy ccompleted the forms as per the procedures and was aware he needed to turn them in at the end of his shift.

The dosimeters and administrative supplies were distributed later during the exercise to animal control workers who would be assisting with the evacuations. This was done through discussion and simulation.

Following the RO briefing to the Matagorda County Sheriff's Deputy an interview was conducted by the evaluator to determine their knowledge of turnback values, exceeding those values, and KI instructions. The Sheriff's Deputy was knowledgeable of the 200 mRem turnback value and that he would have to call the EOC if the value was exceeded. The deputy was questioned about what he would need to do at the end of his shift in the event of a release. He correctly answered that he would go to a reception center where he would be monitored and decontaminated if necessary before returning to the EOC.

**Criterion 3.d.1:**
Demonstration of the traffic and access control point (TACP) was demonstrated out of sequence at 1030 following the Site Area Emergency with the actual exercise and was completed by an

interview as per the extent of play agreement. A Matagorda County Sheriff's Deputy was called to the patrol room at the Matagorda County Emergency Operations Center (EOC). Following an emergency worker briefing by the Radiological Officer, the deputy was issued a "Warning and Traffic Control Kit" as per the procedures. The Deputy was instructed by the Sheriff's Captain on his assigned TACP, CP 12, located at the intersection of FM 521 and SH 60, and the need to follow the procedures in the kit. Further, per the procedure, the deputy was to remain in his car with the windows rolled up and outside vents closed. In the event someone needed direction to a reception center the deputy was to provide a map to the requesting individuals. The deputy was further instructed on who may be allowed to pass through the TACP and enter the affected zones.

The deputy was asked by the evaluator what was to be done should someone such as a farmer ask to enter the affected zones. The deputy correctly responded that a call would be made to the EOC regarding authorization. The deputy was further questioned on turnback values and what he was to do at the end of his shift in the event of a release. The deputy correctly answered that he was to call into the EOC if the turnback limit was reached and seek further guidance. Also, in the event of a release he would report to a reception center to be checked for contamination and be decontaminated if necessary. Further, he would report back to the EOC and turn in his documentation, dosimetry, and kit.

During the hourly briefings, the Emergency Management Director received updates from the Sheriff, U.S. Coast Guard Liaison, and Texas Department of Emergency Management Liaison regarding TACP, water, and air traffice restrictions.

**Criterion 3.d.2:**
This criterion was evaluated at the Matagorda County Emergency Operations Center (MCEOC). Two traffic impediments occurred within Matagorda County by controller inject. Both impediments were handled in a timely and efficient manner. The impediments were reported to the MCEOC via telephone. The Sheriff's Department responded to both impediments. The first impediment involved a traffic accident at CR 347 and FM 521 that required a helicopter to land at the accident scene to transport the injured party. The second involved a heavy hauler transporting drilling equipment to a rig located on the Pierce Ranch. The driver was requesting access so that the equipment could be delivered.

In response to the first impediment, the Sheriff's Department set-up a Traffic Access Control

Point at the intersection of CR 347 and FM 2853 in order to divert traffic away from the accident location to SH 35. Once the injured person was transported out of the area via the helicopter and the accident was cleared, the roadway was cleared.

The evaluator questioned the Sheriff's Department about the use of wreckers to clear accidents. The Sheriff's Deputy informed the evaluator that the department maintained a list of wrecker services. The wrecker services were contacted on a rotational basis when needed.

The second impediment was handled effectively by the Sheriff's Department. The heavy hauler was directed to a church parking lot. The church parking lot provided sufficient room to park the truck until the affected area could be reopened and the truck proceed to its destination. The efficient response of the Sheriff's Department prevented the truck from obstructing the roadway.

**Criterion 3.f.1:**
The Relocation, Reentry & Return (R/R/R) demonstration took place following the plume phase exercise at the Matagorda County Emergency Operations Center (MCEOC). The MCEOC Recovery Committee consisted of County Judge, key state and local representatives, South Texas Project (STP) Liaison, and one support staff member. The County Judge was responsible for direction and control and overall operations with the assistance of the Matagorda County Emergency Management Coordinator (EMC).

At 1500, the MCEOC staff was prepared to move forward on the R/R/R phase. The controller briefed on the initial conditions starting at Day 2 & 7 and displayed Emergency Planning Zone (EPZ) maps with 1st Year Dose Rate and Aerial Survey data identifying areas of radiological concerns. The controller also informed the EOC staff that all evacuees were accounted for.

The media and local radio stations would be used to keep public informed throughout the R/R/R phase.

Relocation:

Matagorda County's declaration of emergency was still in effect. The population for Zones 1, 2, 3, 4, 5, 6, 7, 10 and 11 had been evacuated. Schools in the Emergency Planning Zone (EPZ) had implemented early release.

- DSHS advised that some areas of concern exceeded the 1 year Protective Action Guidelines (PAGs). The recommendation was to relocate residents;
- American Red Cross (ARC) confirmed county evacuees remained in reception centers, congregate care facilities or nursing homes;
- The County did submit a request to the State for additional security resources, U.S. National Guard or State Police; and
- No reentry allowed into restricted areas until DSHS and STP determined it was safe to enter;

Following the initial briefing, the County Judge determined that the possibility existed for short term and long term relocation; he tasked his staff to coordinate with STP and the American Nuclear Insurers to process the resident's claims.

- The local law enforcement agencies were identified and began setting-up the control points and prepared for evacuee escorts for re-entry to retrieve critical personal items;
- Public Information Officers(PIO) were responsible for preparing an Emergency Alert System (EAS) messages to keep the public informed in addition to maintaining communication with the media with the assistance of the STP PIO;
- The ARC would assist with lodging accommodations as needed;
- The Transportation Officer had buses for special needs with wheelchair access and access to ambulance services if needed for transportation of special needs evacuees;

After some discussion the County Judge and MCEOC staff determined that before making final decisions they would coordinate with DSHS and STP.

Reentry:

The County Judge and MCEOC staff continued discussions regarding safe re-entry procedures for both the Emergency Workers (EWs) and public. The Radiological Officers had previously briefed emergency workers on exposure control procedures (dosimetry reading/reporting/tracking; decontamination and end of shift procedures), use of personal protective equipment (PPE), areas to avoid and reentry time limitations into the restricted areas based on recommendation from DSHS.

After consulting with DSHS, it was decided that re-entry into the restricted areas would be reviewed on a case by case basis and materials retrieved from this area would be monitored for

contamination.

Return:

DSHS and STP provided sufficient detail for decision making by the County Judge and MCEOC staff to start allowing the residents to return to their homes. The ARC would confirm residency and the evacuee would have to show identification. The PIO continued to release public information via messages and/or media broadcasts. In addition, County Officials would hold meetings for the public to keep them informed and answer questions.

Prior to allowing return it was determined that the evacuated zones had vital services. The County would coordinate support to inspect and secure safety structural integrity and contamination control prior to allowing the public to return. TACPs officials would monitor the return of the residents.

Federal, State, Local and support volunteer agencies team effort allowed the safe return of evacuees into their homes. The MCEOC would maintain the necessary staff and continue coordination with the State until directed otherwise.

The R/R/R tabletop was terminated at 1554.

**Criterion 5.a.1:**
The MCEOC successfully demonstrated activation of prompt alert and notification for a radiological emergency at South Texas Project (STP).

The Emergency Management Director (EMD) has the authority for all Protective Action Decision (PAD) making in Matagorda County. The Emergency Management Coordinator is the back up to the EMD. The EMD was in direct communication with the EMC as they were seated next to each other in the EOC. The EMD had an assistant that logged all events and decisions.

Matagorda County plans and procedures contain pre-scripted Emergency Alert System (EAS) message templates that allow them to be adjusted as needed. A member of the administrative section was assigned to prepare all requested EAS messages and was positioned in close proximity to the EMD.

The procedure for alert and notification is that once a Protective Action Decision (PAD) is made, the EMD authorizes the sounding of the sirens. The EMD is notified once the siren sounding is completed and the EAS message is then authorized by the EMD to be faxed to the participating radio station (KMKS) for immediate transmission, and then processed through a blast fax to other pre-identified locations. The EOC staff member assigned to operating the fax machines called the radio station directly to verify receipt immediately after transmitting the fax. All EAS messages that were released were consistent with the protective action decisions made. This same process was used for all updates and additional advisories for the EAS messages during this exercise.

The MCEOC is equipped with a Compulert Central Station Controller Model 860 siren action system which is located in the Sheriff's Dispatch room. The siren activation system is equipped with a map that shows the location of each siren and the status of each siren. A Sheriff Dispatch employee was designated as the person responsible for operating the system and activating the sirens for this exercise. She was very knowledgeable of the system and successfully demonstrated operation of the system. She simulated inserting the key, which is attached to the system by a cable, turning to the right and waiting for the buttons to light up. She stated that she would then press the "ALERT" button and that would activate the sirens within the 10 mile Emergency Planning Zone for STP. She stated that the sounding of the sirens would take three minutes. She also was aware that if any siren showed as failing she would notify the EMD and then a Sheriff Deputy would be dispatched to conduct route alerting for that area. After verifying all the sirens had sounded, she proceeded down the hall and back into the EOC main room and notified the EMD that the sirens had been sounded and their status. The sirens were successfully demonstrated each time they were authorized by the EMD.

The radio station KMKS is the primary EAS station for Matagorda County. The MCEOC is equipped with a SAGE EAS Endec machine that allows for EAS messages to be manually broadcasted as a backup system to the EAS station. This equipment is located in the Sheriff's Dispatch room directly above the siren activation system. Staff members have been trained on the operation of the system and are knowledgeable of the procedures in the event that the system would be required to be used.

There were two EAS messages broadcasted during this exercise. The first EAS message was authorized by the EMD at 1009 to be sent following the activation of the sirens. The EMD directed the designated individual from the Sheriff's Dispatch to activate the sirens at 1010 and

upon completion at 1013 to transmit EAS message EAS-1 to KMKS for immediate broadcasting. At 1014 EAS-1 was transmitted via fax and the EOC staff member assigned to operating the fax machines called the radio station directly to verify receipt immediately after transmitting the fax. EAS-1 provided the following information: Site Area Emergency had been declared by STP, a release of radioactivity had occurred, Matagorda Elemenatry Tidehaven Junior and High Schools are closed with all students evacuated and Administrators remaining, a list of parks and recreation areas closed, advisory for people living in the 10 mile EPZ to review Emergency Instruction Section in local telephone book, stay tuned to KMKS 102.5 FM or KKHA 92.5 FM for further information, and EMD Judge Nate McDonald has authorized the message. The message contained all of the Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness (REP) program requirements for EAS messages.

At 1112 the EMD briefed the staff that he and the EMC had both received a phone call from their counterparts at the Emergency Operations Facility (EOF) notifying them that a General Emergency had been declared by STP. This verification of the upgraded ECL is in accordance with their plans and procedures. There was some discussion amongst the decision makers in regards to the Protective Action Recommendation (PAR) that was provided by STP at 1108. They decided as a protective action they were going to evacuate an additional zone to the recommended zones that were identified in the PAR. They noted that if they had to evacuate Zone 7 later that the evacuation route would take them through Zone 6 that was identified in the PAR. There was very good discussion and decision making in this process as it demonstrated their ability to make decisions on behalf of the safety of the public and adjust to PARs provided by STP. The Protective Action Decision was made at 1144.

The EMD directed the designated individual from the Sheriff's Dispatch to activate the sirens at 1144 and upon completion, at 1147, to transmit EAS message EAS-2 to KMKS for immediate broadcasting. The EOC staff member assigned to operating the fax machines called the radio station directly to verify receipt immediately after transmitting the fax. The following information was provided in EAS-2: message supercedes EAS-1, General Emergency has been declared by STP, releases of radioactivity have occurred, EMD recommends evacuation of Zones 1,2,3,4,5,6,7,10,11 and Matagorda Beach area, geographic descriptions of the zones, instructions and location of the reception center at McAllister Middle School, list of evacuation routes, instructions and phone number for those without transportation, list of parks and recreation areas closed, instructions to review Emergency Information Section in local telephone book, Matagorda Elementary, Tidehaven Junior and High Schools closed and no students there, special

information phone number for inquiry and additional information, county officials will advise when safe to return and Law Enforcement officers will control access, advisory not to use telephone unless absolutely necessary, stay tuned to KMKS 102.5 FM or KKHA 92.5 FM for further information, and EMD Judge Nate McDonald authorized this message. The message contained all of the FEMA REP Program requirements for EAS messages.

**Criterion 5.b.1:**

The MCEOC successfully demonstrated providing emergency information and instructions for the public and media for a radiological emergency at South Texas Project (STP). The Emergency Management Director (EMD) authorizes all Emergency Alert System (EAS) messages in Matagorda County. The Emergency Management Coordinator (EMC) is the back up to the EMD. Prior to releasing an EAS message, the EMD briefed the MCEOC staff on the contents of the message, authorized the message, and directed the EOC staff to transmit the message to KMKS 102.5 FM for immediate transmission. All EAS messages that were released were consistent with the protective action decisions made.

The Public Information staff members in the MCEOC provided information and updates to the Public Information Officer (PIO) that had been dispatched to the Joint Information Center (JIC) by telephone and fax. There was very good communication to ensure that all messages and information was consistent with protective action decisions made. Copies of the EAS messages were also faxed to the County PIO that was located at the JIC.

Initial notification was made at 0834 to KMKS via News Advisory NA-1 by fax for immediate broadcast. The EOC staff member assigned to operating the fax machines called the radio station directly to verify receipt immediately after transmitting the fax. NA-1 provided the following information; ALERT declared at STP, EMD activating the EOC, in contact with officials from STP and the State of Texas, no danger to public at this time, schools have ordered early dismissal and parents should pick up their children from Tidehaven High School, Tidehaven Junior High School, and Matagorda Elementary, refer to Emergency Information Section and back cover of local telephone book, stay tuned to KMKS 102.5 FM or KKHA 92.5 FM for further information, and a phone number to call for additional information or questions, and the message was authorized by the EMD Judge Nate McDonald.

At 1321, the EMD authorized NA-2 to be transmitted to KMKS. NA-2 provided additional information regarding pets, packing, remembering medicines, and steps to take prior to

evacuating the area, American Red Cross contact number, and information in regards to traffic and access control points, stay tuned to KMKS 102.5 FM or KKHA 92.5 FM for further information, and a phone number to call for additional information or questions, and the message was authorized by the EMD Judge Nate McDonald.

At 1323, the exercise was terminated and no further EAS messages were transmitted.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 2.e.1, 3.a.1, 3.d.1, 3.d.2, 3.f.1, 5.a.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.3 Private Organizations

#### 3.3.3.1 EAS Radio Station KMKS

**Criterion 5.a.1:**
The process for broadcasting Emergency Alert System (EAS) messages by KMKS 102.5 staff was thoroughly demonstrated and completed. The alerting and notification of the public of an emergency situation was accomplished in a timely manner following the initial decision of the Matagorda County Judge and the Matagorda County Emergency Operations Center (MCEOC). At KMKS 102.5 Radio Station, the individual with the responsibility for activating the EAS Message is the Operator on Duty or the Operations Manager at the station. The decision to activate the Alert and Notification system is made at the MCEOC by the County Judge who is the designated Emergency Management Director. Instructional messages included FEMA required content such as the identification of the responsible organization, official authority, name of nuclear plant, specific emergency information and a statement that an emergency situation exists at the plant.

The alert methods that are indicated in the plans include tone alert radios, backup route alerting, telephone calls to institutions and the primary siren system. KMKS received notification of EAS

Message 1 via fax and message was logged immediately in their log book. The Radio Operator then indicated they would continue to disseminate EAS Message every 15 minutes until a new message superseded EAS 1 or an order to cease the message was received from the MCEOC. KMKS staff ensured the message was validated and authentic via a confirmation phone call on the designated line after fax was received from the MCEOC. Next to the designated line and fax machine were copies of the operating procedures, checklists and a copy of the latest phone book, emergency action log and EAS backup messages for KMKS staff use and ease of continuity during a shift change. There were two main shift schedules that KMKS staff operated in, day and night shift which ended at 1800. KMKS has the ability to broadcast prescripted EAS Messages remotely using specialized software if necessary. The MEOC is equipped with a SAGE EAS Endec Machine that allows for EAS Messages to be manually broadcasted as a backup system to KMKS radio station. This equipment is located in the Sheriff's Dispatch room directly above the siren activation system. KMKS staff members have been trained on the operation of the system and are knowledgeable of the procedures in the event that the system would be required to be used.

At 0810 an initial test fax was sent to KMKS from the MCEOC, verification was done by MCEOC to KMKS via the dedicated phone line to validate receipt of test fax. The test fax was then promptly logged into the log book by KMKS staff. At 0835 KMKS staff received a phone call via the dedicated line from MCEOC followed by a fax of News Advisory-1 indicating that an Alert has been declared at the Plant. KMKS staff indicated that they always search the fax notification for the signature of the County Judge as authentication for news advisories and press releases. In the case of an EAS Message, a call would be placed to the MCEOC to accurately verify receipt and content of the fax.

At 0854 a fax was received containing Press Release-1 which contained the Fact Sheet of Emergency Classification Levels (ECL). KMKS did not broadcast this as they indicated it was for internal purposes only. At 0904 a Press Conference Blast Fax was received from the MCEOC. The staff of KMKS indicated they would not dispatch any radio personnel to the Joint Information Center (JIC) at this stage, they would wait for further ECL escalation. At 0943 another Press Conference Blast Fax was received from the MCEOC, no radio personnel deployed to the JIC at this stage. At 0950 a shift change was done by Radio Operators. Typically KMKS is staffed with two separate shifts, when the station is not staffed after 1800, the MCEOC would then call the Station Owners to initiate staffing of KMKS. At this shift change KMKS staff indicated to each other they would secure the facility at the ECL classification of Alert and

request law enforcement support if necessary in an actual emergency situation. At 1015 a Site Area Emergency ECL was declared by the utility and notification was received via fax from MCEOC. KMKS logged in their book that this message supersedes message NA-1. Immediately after receipt of fax, regular programming would be suspended and the message broadcasted to the public as soon as the message is received by the EAS station. The current EAS message was then simulated broadcast every 15 minutes until the new message superseded the previous message. At 1022 an actual emergency test broadcast was done live on air by the radio operator. The KMKS staff indicated that they will then simulate rebroadcasting the EAS-1 message at 15 minute intervals until further notice from the MCEOC. EAS Message had a closing statement for listeners to stay tuned to KMKS 102.5 or KKHA 92.5 for further information. After broadcasted content of message notification of the release of radioactivity from the plant and closure of parks and recreational areas and student evacuation of all three area schools was completed, information was then logged, briefed and discussed among KMKS staff.

KMKS staff indicated that they do both prerecorded and live broadcasts of EAS Messages, Press Releases and News Advisories. EAS Messages were simulated at 15 minute intervals.
At 1057, a Fact Sheet for Press Release 2 was received from MCEOC regarding assembly and accountability, KMKS briefed each other and logged message in book. At 1120, Press Release 3 was faxed from the MCEOC. KMKS proceeded to check all fax paper trays to ensure sufficient paper supply for incoming messages. At 1129, the Radio Operator indicated that they were now going to silence all phone banks to concentrate on communications from MCEOC and dissemination of EAS Message.

At 1152, a fax was received from MCEOC and followed with a verification phone call from MCEOC. The fax contained EAS-2 and the ECL change to General Emergency and KMKS staff verbally acknowledged this message superseded Message EAS-1. KMKS then reactivated simulated broadcast of EAS-2.

At 1204, a fax was received directly from South Texas Project Joint Information Center containing Press Release 4. KMKS staff indicated that they would simulate rebroadcast EAS-2 at 15 minute intervals followed by Press Release 4. At 1306, a final Press Conference Blast Fax was received from MCEOC and logged into KMKS log book. At 1326, KMKS received notification of ENDEX from dedicated line by the MCEOC. KMKS decided to wait until they received a confirmation fax to officially terminate emergency operations. The final fax for ENDEX arrived at 1333 and KMKS debriefed each other and then logged event into their

logbook.

In the the event of a power outage there is a backup generator that will provide alternate power. Dead Air is prevented by programming software known as ADI that will trigger a failsafe that will alert Station Owners of potential issue. So in the case of an emergency staff will be notified automatically of any abnormalities. In the Emergency Planning Zone (EPZ) for Matagorda County alert methods includes sirens and alert radios, auto dialer, Community Alert Network and Route Alerting. KMKS102.5 serves as the primary EAS station for the Alerting and Notification System. KKHA 92.5 is their radio station backup. Tone alert radios are issued to households with the 10 mile EPZ and when the radio station is not staffed, the tone alert radios are tripped constantly with each EAS Message. EAS messages can be prescripted statements and are issued by the Emergency Management Director in conjunction with the Public Information Officer, Public Information Writer and/or the Emergency Operations Center Liaison during emergencies at the plant.

Binders of checklists, operating procedures, prescripted EAS Messages and the most recent phone book, Emergency Action Logs and backup EAS Messages were available to KMKS staff and displayed visibly for ease of access. During an emergency radio station staff work in pairs and are not left alone during emergency situations. EAS Message content was clear and accurate and reflected current ECLs. The MCEOC with the County Judge's signature authorized Alert and Notification Sequences, with follow up news releases after each EAS activation and broadcasts. KMKS was kept updated by MCEOC about which messages to broadcast and time intervals were indicated by their standard operating procedures. There were no EAS Messages that had delays or were broadcast in an untimely manner. All KMKS staff demonstrated procedures of accurately and appropriately broadcasting EAS Messages. All EAS Messages were verified according to plans and procedures and was evident throughout KMKS staff emergency response operations.

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 5.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None

f. PRIOR ISSUES - RESOLVED: None

g. PRIOR ISSUES - UNRESOLVED: None

# SECTION 4: CONCLUSION

Based on the results of the exercise, the offsite radiological emergency response plans and preparedness for the State of Texas and the affected local jurisdiction are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency. Therefore, 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Texas site-specific to the South Texas Project will remain in effect.

# APPENDIX A: BEST PRACTICES

### 1. The Department of State Health Services at the Emergency Operations Facility

**Summary:** The Department of State Health Services (DSHS) at the Emergency Operations Facility (EOF) showed excellent coordination & a great partnership with utility counterparts that allowed DSHS personnel to quickly identify and remedy any possible inconsistencies, such as the KI authorization for special needs population. Accident assessment team members had a good peer checking system in place to assure no mistakes were made and proper recommendations were made.

**Description:** After receiving the dose projections from accident assessment, the DSHS Incident Commander made her protective action recommendations and presented them to both DSHS accident assessment team members to peer-check them and to the South Texas Project's (STP) accident assessment team to coordinate a concurrence before presenting these recommendations to the County Judge. This was done in accordance with procedure. DSHS REM Procedure 1-Accident Assessment: Plume Exposure Pathway

The peer checking system that was in place successfully assured that no mistakes were made and proper recommendations were given. This peer checking system was demonstrated during a FEMA evaluated exercise and will continue to be practiced in future training and exercises.

### 2. The Texas Department of Public Safety (DPS) Disaster District Sub-2C located in Pierce, Texas

**Summary:** DDC Pierce office was well run. Participants were well trained and effectively used Web-EOC, a newer technology, to their benefit.

**Description:** Web EOC is an information sharing web-based program that allowed the DDC, County EOC and State Operations Center to share significant events such as press releases, levels of emergency, and protective action decisions on an accessible website. It also electronically maintained emergency responder logs and made the local logs accessible to the State Operations Center.

Because Web EOC is a newer technology, a procedure has not been put into place as of yet.

WebEOC successfully provided timely and accurate information to all levels of government who were involved in emergency response during this exercise. WebEOC is currently used in state-wide emergency operations, and will continue to be used in future REP training and exercises.

### 3. Joint Information Center

**Summary:** JIC – The STP JIC Media Liaison team was innovative in taking members of the mock media on a tour of a DSHS Mobile Lab and simulating to the media a walk-through of a reception center. Media Liaison team members provided handheld microphones to mock media, ensuring that all questions and answers were heard during press conferences. The Media and Public Inquiry team used both phones and an online program to answer public and media inquiries. The online program, PIER, was also utilized for team members to log calls and answers. The Media and Public Inquiry team also used a translation firm to answer phone questions posed in Russian, Japanese and Vietnamese. All spokespersons were polished, informative and credible during press conferences.

**Description:** While not graded, the Mock Media did a superb job of pushing questions and follow-up questions to the OROs. The Mock Media also provided stories via VHS, digital radio and print to the Media Monitor after every press conference. This practice is unusual but fruitful as it exercises Media Monitor teams who typically just show the capability of monitoring by turning on TV's, radios and computers.

The Mock Media provided exercise players with challenging questions and follow-up questions that enabled the OROs to exercise their public speaking capability. Although it was not graded, PIER proved to be a web-based tool that successfully allowed the utility to provide information to the public in a timely fashion.

By injecting mock stories via VHS, digital radio and print throughout the exercise, it enabled better training for the JIC media team and provided more realism to the evaluated exercise.

### 4. Strengths

**Summary:** KMKS staff extremely proactive with verification and authentication of all communication from Matagorda County Emergency Operations Center (MCEOC). Accomplished communication checks for all equipment and paid attention to detail, particularly

regarding constant fax paper tray checks. These were impressive as these details are often overlooked by busy staff. Checking dial tones and constantphone check-ins with MCEOC was helpful in establishing a successful operation. Enthusiasm for Drill was evident and live broadcast of a test emergency was done on air and seamlessly with no error. Overall great cohesion of KMKS team helped facilitate the disemination of information and allowed KMKS staff to coordinate among each other and stay focused.

**Description:** Annotated "demonstrated strengths" for KMKS 102.5

# APPENDIX B: EXERCISE TIMELINE

Table 1, on the following page, presents the time at which key events and activities occurred during the South Texas Project exercise on July 23, 2008.

Table 1 - Exercise Timeline
DATE: 2010-10-27, SITE: South Texas Project, TX

| Emergency Classification Level or Event | Time Utility Declared | TDEM-SOC | DD Sub-2C Pierce | DSHS-HQ | DSHS-EOF | JIC | Mat. Co. EOC & T/ACP |
|---|---|---|---|---|---|---|---|
| Unusual Event | | | | | | | |
| Alert | 0725 | | 0725 | 0744 | | | 0736 |
| Site Area Emergency | 0946 | | 0946 | | 0949 | 0946 | 0950 |
| General Emergency | 1108 | | 1126 | | 1108 | 1108 | 1112 |
| Simulated Rad. Release Started | 1103 | | 1103 | | 1103 | 1108 | 1103 |
| Simulated Rad. Release Terminated | | | | | | | |
| Facility Declared Operational | | 0737 | 0814 | 0807 | 0915 | 0830 | 0814 |
| Declaration of State of Emergency | | | | | | 1201 | 1201 |
| Exercise Terminated | | 1332 | 1404 | | 1320 | 1345 | 1323 |
| Early Precautionary Actions: Evacuate special needs; evacuate parks and recreational areas in EPZ; evacuate Tidehaven and Matagorda ISDs | | | | | | | 0952 |
| 1st Protective Action Decision: Evacuate Zones 1, 2, 3, 4, 5, 6, 7, 10, and 11 | | | | | | | 1144 |
| 1st Siren Activation for Early Precautionary Action | | | | | | | 1010 |
| 1st EAS or EBS Message | | | | | | | 1014 |
| 2nd Protective Action Decision: | | | | | | | |
| 2nd Siren Activation for first PAD | | | | | | | 1144 |
| 2nd EAS or EBS Message | | | | | | | 1147 |
| KI Administration Decision: | | | | | 1117 | | |

## Table 1 - Exercise Timeline
## DATE: 2010-10-27, SITE: South Texas Project, TX

| Emergency Classification Level or Event | Time Utility Declared | EAS-KMKS |
|---|---|---|
| Unusual Event | | |
| Alert | 0725 | |
| Site Area Emergency | 0946 | |
| General Emergency | 1108 | |
| Simulated Rad. Release Started | 1103 | |
| Simulated Rad. Release Terminated | | |
| Facility Declared Operational | | 0810 |
| Declaration of State of Emergency | | |
| Exercise Terminated | | 1335 |
| Early Precautionary Actions: Evacuate special needs; evacuate parks and recreational areas in EPZ; evacuate Tidehaven and Matagorda ISDs | | |
| 1st Protective Action Decision: Evacuate Zones 1, 2, 3, 4, 5, 6, 7, 10, and 11 | | |
| 1st Siren Activation for Early Precautionary Action | | |
| 1st EAS or EBS Message | | 1015 |
| 2nd Protective Action Decision: | | |
| 2nd Siren Activation for first PAD | | |
| 2nd EAS or EBS Message | | 1152 |
| KI Administration Decision: | | |

# APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 2010-10-27, SITE: South Texas Project, TX

| LOCATION | EVALUATOR | AGENCY |
|---|---|---|
| Texas Division of Emergency Management-State Operations Center | *Jeff Clark | |
| Department of Public Safety, Disaster District Sub-2C Pierce | *Bill George | DHS/FEMA |
| Department of State Health Services, Radiation Control Program - Headquarters | *Bill Maier | NRC |
| Department of State Health Services - Radiation Control Program at the Emergency Operations Facility | Johanna Berkey<br>*Tim Pflieger | FEMA Region X<br>DHS/FEMA |
| Department of State Health Services - Radiation Control Program Field Monitoring Team One | *Paul Ward | FEMA HQ |
| Department of State Health Services - Radiation Control Program Field Monitoring Team Two | *Marcy Campbell | ICF |
| Joint Information Center, Bay City | *Bill Bischof<br>Rebecca Fontenot<br>Linda Gee | DHS/FEMA<br><br>DHS/FEMA |
| Matagorda County Emergency Operations Center and Traffic/Access Control Point | Brad DeKorte<br>Scotty Hargrave<br>*Elsa Lopez | DHS/FEMA<br>FDA<br>DHS/FEMA |
| EAS Radio Station KMKS | *Kaori Flores | |
| * Team Leader | | |

# APPENDIX D: ACRONYMS AND ABBREVIATIONS

| Acronym | Meaning |
|---|---|
| ALARA | As Low As Reasonably Achievable |
| ARC | American Red Cross |
| ARCA | Areas Requiring Corrective Action |
| BCPD | Bay City Police Department |
| DRD | Direct Reading Dosimeter |
| EAL | Emergency Action Levels |
| EAS | Emergency Alert System |
| ECL | Emergency Classification Levels |
| EMC | Emergency Management Coordinator |
| EMD | Emergency Management Director |
| EOC | Emergency Operations Center |
| EOF | Emergency Operations Facility |
| EPD | Electronic Personal Dosimeters |
| EPZ | Emergency Planning Zone |
| EW | Emergency Worker |
| FMT | Field Monitoring Team |
| FTL | Field Team Leader |
| GE | General Emergency |
| GPS | Global Positioning System |
| HF | High Frequency |
| IC | Incident Commander |
| ISD | Independent School Districts |
| JIC | Joint Information Center |
| MCEOC | Matagorda County Emergency Operations Center |
| MP | Monitoring Point |
| NRC | Nuclear Regulatory Commission |
| OSA | Operations Section Administrator |
| OWS | Operations Watch Supervisor |
| PAD | Protective Action Decision |
| PAR | Protective Action Recommendation |
| PIO | Public Information Officer |
| RCP | Radiation Control Program |
| REP | Radiological Emergency Preparedness |
| RLO | Regional Liaison Officer |

| | |
|---|---|
| RO | Radiological Officers |
| SAE | Site Area Emergency |
| SOC | State Operations Center |
| STP | South Texas Project |
| STPEGS | South Texas Project Electric Generating Station |
| SUV | Sport Utility Vehicle |
| TO | Transportation Officer |

# APPENDIX E: EXERCISE PLAN

## EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

### Sub-element 1.a – Mobilization

**Criterion 1.a.1: Offsite Response Organizations (OROs) use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654, A.4; D.3, 4; E.1, 2; H.4)**

Locations:

- State Operations Center at Austin (SOC),
- Department of Public Safety (DPS) Disaster District Sub-2C Emergency Operations Center (EOC) at Pierce (a.k.a. DDC),
- Department of State Health Services (DSHS) Radiation Control Program (RCP) Headquarters at Austin,
- DSHS RCP at South Texas Project (STP) Emergency Operations Facility (EOF),
- Joint Information Center (JIC), and
- Matagorda County Emergency Operations Center (MCEOC)

Extent of Play:

- DSHS RCP personnel will pre-stage at the RCP staging area in Bay City.
- Regardless of the scenario, no facilities/activities will relocate during this exercise.
- DSHS Mobile Lab will be located at the staging area but will not be evaluated.
- Non-TDEM players will be pre-staged at the SOC. DSHS will be deployed to SOC at SAE via a message inject.
- At Site Area or General Emergency, the SOC will notify agencies that comprise the Emergency Management Council. These notifications will be logged according to procedure, however, physical notifications will be simulated.
- Four (4) Field Monitoring Teams will be deployed for training purposes. Only (2) teams will be evaluated. Drill evaluators may be required to travel in separate vehicles due to space restrictions in DPS vehicles.
- Disaster District Committee personnel not stationed at DD Sub-2C EOC may be pre-staged.
- To allow for maximum amount of play, DSHS-RCP and JIC staff will pre-stage in the area.
- An extra dispatcher will be placed on duty at the Matagorda County Sheriff's office, in Bay City, to handle the regular workload.
- Non-local TDEM personnel will be pre-staged in the area.
- To facilitate play, the Joint Information Center furnishings may be set up prior to the exercise.

ARCAs: None

### Sub-element 1.b - Facilities

**Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H.3)**

Locations:

- STP Emergency Operations Facility (EOF)

Extent of Play: None

ACRAs: None

**Sub-element 1.c - Direction and Control**

**Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d; A. 2.a,b.)**

Locations:
- SOC,
- DDC,
- DSHS RCP Headquarters,
- DSHS RCP at STP EOF, and
- MCEOC

Extent of Play: None

ARCAs: None

**Sub-element 1.d – Communications Equipment**

**Criterion 1.d.1: At least two communication systems are available, operate properly, and communication links are established with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1, 2)**

Locations:
- SOC,
- DDC,
- DSHS RCP Headquarters,
- DSHS RCP at STP EOF,
- DSHS RCP Field Monitoring Teams (FMTs),
- JIC, and
- MCEOC, including Traffic Access Control Points (T/ACP)

Extent of Play:
- A controller phone cell will be established to ensure appropriate communications are accomplished and to ensure fluid exercise play.
- Correction on the spot requested, for local agencies.*

ARCAs: None

**Sub-element 1.e – Equipment and Supplies to Support Operations**

**Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H.7, 10; J. 10.a,b,e; J. 11; K.3.a)**

Locations:
- SOC,
- DDC,
- DSHS RCP Headquarters,

- DSHS RCP at STP EOF,
- DSHS RCP Field Monitoring Team (FMTs),
- JIC, and
- MCEOC, including T/ACP

Extent of Play:
- Donning and doffing of anti-contamination clothing will be demonstrated out of sequence by one player, and will not be worn during the exercise.
- Equipment not required to demonstrate exercise objectives may be left at the Staging Area to allow for additional space within the vehicles.
- Correction on the spot requested, for purposes of dressing out and for local agencies.*

ARCAs: None

## EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

### Sub-element 2.a – Emergency Worker Exposure Control

**Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, J. 10.e,f; K.4)**

Locations:
- DSHS RCP at STP EOF and
- MCEOC

Extent of Play: None

ARCAs: None

### Sub-element 2.b. – Radiological Assessment and Protective Action Recommendations and Decisions for the plume Phase of the Emergency

**Criterion 2.b.1: Appropriate protective action recommendations are based on data from the plant (licensee) or field, plume and dose projected through use of models, and knowledge of on and off-site conditions that may warrant consideration. (NUREG-0654, I.8, 10; Supp.3)**

Locations:
- DSHS RCP Headquarters or
- DSHS RCP at STP EOF

Extent of Play:
- If STP EOF has been staffed by DSHS RCP at this time, it will be the only facility evaluated for this criterion.

ARCAs: None

**Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9; 10.f,m)**

Locations:
- MCEOC

Extent of Play:
- The protective actions that result from this decision-making process will not be implemented. No members of the public will be relocated.

ARCAs: None

**Sub-element 2.c – Protective Action Decisions Consideration for the Protection of Special Populations**
**Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9; J.10.d,e)**

Locations:
- MCEOC

Extent of Play:
- Protective actions for special needs individuals will be considered at the MCEOC; however, actual demonstration of protective actions will not be performed.
- MCEOC staff will demonstrate this criterion through discussion and showing the evaluator a roster of special needs individuals in the 10-mile emergency planning zone.

ARCAs: None

**Sub-element 2.e. — Radiological Assessment and Decision Making Concerning Relocation, Reentry, and Return**
**Criterion 2.e.1: Timely relocation, reentry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, I.10; J.9; M.1)**

Locations:
- MCEOC

Extent of Play:
- Matagorda County EOC staff will demonstrate this evaluation criterion by discussion with evaluator after the plume phase exercise has been terminated.
- The state controller will assist as necessary to facilitate the tabletop and provide scenario information necessary for the counties.
- Federal RRR PAG's, DSHS & STP PAR's, plume modeling maps, radiological data and SitReps will be pre-scripted and provided as injects.
- Correction on the spot requested.*

ARCA: None

## EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

### Sub-element 3.a – Implementation of Emergency Worker Exposure Control

**Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, 3.b)**

Locations:
- DSHS RCP at STP EOF,
- DSHS RCP Field Monitoring Teams,
- MCEOC, including T/ACP

Extent of Play:
- Exercise TLDs will be used for the exercise. TLDs for real events are packaged in the Emergency Planner box at the staging area. DSHS Emergency Planners can show evaluator real TLDs at staging area.
- DSHS RCP Contamination Control Team will support monitoring of State emergency workers returning to the Staging Area but will not be evaluated.
- Correction on the spot requested.*

ARCAs: None

### Sub-element 3.b Implementation of KI Decision

**Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals is maintained. (NUREG-0654, E.7.,J.10.e.,f.)**

Locations:
- DSHS at EOF

Extent of Play:
- If the decision is made to have emergency workers ingest KI, actual ingestion of KI will not be done.
- The use of KI by the general public is not recommended in the State of Texas, and there are no institutionalized individuals within the STP 10-mile EPZ; therefore, KI will not be issued to the general public or institutionalized individuals.
- Distribution and actual ingestion of KI to emergency workers will be simulated by using copies of the Patient Packet insert or copies of the packet to represent actual KI supplies.
- Correction on the spot* is requested for the traffic and access control point demonstrations.

ARCAs: None

**Sub-element 3.d. – Implementation of Traffic and Access Control**

**Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g, j)**

Locations:
- MCEOC, including T/ACP

Extent of Play:
- The T/ACP decision-making process will be demonstrated in real-time sequence, however, travel to the T/ACP will be simulated.
- A law enforcement officer (from the Sheriff's Department) assigned to T/ACP will discuss the knowledge of their role and responsibilities by interview with the evaluator.
- This interview can occur out of sequence of the exercise scenario, but during the exercise, at a time agreed upon by the MCEOC controller and FEMA evaluator.
- Correction on the spot requested.*

ARCAs: None

**Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10.k.)**

Locations:
- MCEOC

Extent of Play:
- This criterion will be demonstrated by inject.
- No impediment will actually occur, however, the situation and solution will be discussed in the MCEOC.
- Correction on the spot requested.*

ARCAs: None

**Sub-element 3.f - Implementation of Relocation, Reentry, and Return Decisions**

**Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1, 3)**

Locations:
- MCEOC

Extent of Play:
- Matagorda County EOC staff will demonstrate this evaluation criterion by discussion with evaluator after the plume phase exercise has been terminated.
- The state controller will assist as necessary to facilitate the tabletop and provide scenario information necessary for the counties.

- Controller injects will stimulate the decision making process for relocation, reentry, and return.
- Correction on the spot requested.*

ARCA: None

## EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

### Sub-element 4.a – Plume Phase Field Measurement and Analyses

**Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10; I.7,8,9)**

Locations:
- DSHS RCP FMTs

Extent of Play:
- Activated charcoal filters will be used in lieu of silver zeolite filters for exercise purposes but FMTs will demonstrate availability of silver zeolite filters.
- Equipment not required for demonstrating exercise evaluation criterion may be left at the staging area to allow for additional space within the vehicle.
- Correction on the spot requested.*

ARCAs: None

**Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8, 11; J.10.a; H.12)**

Locations:
- DSHS RCP at STP EOF

Extent of Play: None

ARCAs: None

**Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams should move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sample media. (NUREG-0654, I.9)**

Locations:
- DSHS RCP FMTs

Extent of Play:
- Activated charcoal filters will be used in lieu of Silver Zeolite filters for exercise purposes.
- Each graded field team will at least once demonstrate proficiency in the use of anti-contamination clothing as required by procedure.

- The ability to don and remove anti-contamination clothing will be demonstrated at an agreed upon time and location prior to or after the exercise.
- Correction on the spot requested.*

ARCAs: None

**EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION**

**Sub-element 5.a - Activation of the Prompt Alert and Notification System**

**Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized off-site emergency officials to notify the public of an emergency situation.**

**The initial instructional message to the public must include as a minimum: 1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information. (10 CFR Part 50, Appendix E.IV.D; NU-REG, E.5,6,7.)**

Locations:
- MCEOC, and
- EAS Radio Station KMKS 102.5

Extent of Play:
- Siren and alert radio activation will be simulated by the Matagorda County Sheriff's Office Dispatcher.
- Simulation of the siren and alert radio activation will be in real time sequence with the transmission of the EAS message. The sirens will be sounded at the appropriate time in the exercise in accordance with the decision and the EAS message will follow the siren sounding.
- Emergency Alert System (EAS) message content will be determined by the Emergency Management Director and communicated to the EAS stations by the EOC Administrative Assistant; however, broadcasts will be simulated.
- Route alerting and RapidNotify (auto dialer) will not be demonstrated.
- There are no FEMA approved exception areas

ARCAs: None

**Sub-element 5.b – Emergency Information and Instructions for the Public and the Media**

**Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E.5,7; G.3.a; G.4.c.)**

Locations:
- JIC, and
- MCEOC

Extent of Play:

- Information will not be provided to the public and/or the media not participating in the exercise.
- The STP JIC is in the process of implementing the PIER (Public Information Emergency Response) system to push, pull, and track public information. PIER is a private tool used by STP only. This system will not be evaluated by FEMA. Use of this system is not intended to replace FEMA approved methods of notifying the media and the public.

ARCAs: None

**GENERAL EXTENT-OF-PLAY:**

1. With regard to last minute additions or changes to any previously approved Extent-of-Play, all suggested changes, including decisions due to inclement weather, must be forwarded to the RAC Chair for approval.
2. As a statement of fact, no ORO will deliberately deviate from its plans and procedures with the intent of avoiding responsibility.
3. The exercise may be suspended or terminated due to a real emergency situation.
4. Draft copies of procedures may be used during the exercise, if the procedure is under revision at the time of the exercise.
5. *Correction-on-the-spot is defined in the FEMA REP Program Manual at III-235 and in the FEMA Policy Paper, Strategic Review Steering Committee, Initiative 1.5, Correct Issues immediately, effective March 31, 2000, signed by Kay C. Goss, CEM, Associate Director for Preparedness, Training and Exercises.

***Acronyms***

| | |
|---|---|
| **ARCA** | Area Requiring Corrective Action |
| **DDC** | Department of Public Safety Disaster District substation in Pierce, Texas |
| **DSHS** | Department of State Health Services |
| **DPS** | Department of Public Safety |
| **EAS** | Emergency Alert System |
| **EOC** | Emergency Operations Center |
| **EOF** | Emergency Operations Facility |
| **FEMA** | Federal Emergency Management Agency |
| **FMT** | Field Monitoring Team |
| **JIC** | Joint Information Center |
| **KI** | Potassium Iodide |
| **MCEOC** | Matagorda County Emergency Operations Center |
| **ORO** | Offsite Response Organization |
| **PPE** | Personal Protective Equipment |
| **RAC** | Regional Assistance Committee |
| **RCP** | Radiation Control Program |
| **SOC** | State Operations Center |
| **STP** | South Texas Project |
| **T/ACP** | Traffic and Access Control Point |

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|

**THIS IS A UNIT 1 DEP & EROP EXCERISE SCENARIO**

06:55 Initial Conditions - Unit 2 is and has been at 100% Power for 195 days. Unit 1 Unit 1 is and has been at 100% Power for 137 days. Core burn up is 5,134 MWD/MTU.

Planned Maintenance activities include: E1A11 Engineered Safety Features (ESF) batteries are being replaced. AFW Pump 11 is out of service for bearing replacement.

The Meteorological Tower indicates the following: Wind out of the northeast (50.24º) at 4 mph and ambient temperature is 54°F.

**Refer to Mini-Scenarios No. 1 & 2**

07:05 Failed Fuel Monitor RT-8039 alarms at 40 µCi/ml and is trending up rapidly.

07:10 MAB 10' Radiation Monitors (8060, 8061, 8062) alarm and begin trending up rapidly.

07:15 Radiation Monitor readings continue to increase: RT-8039 150 µCi/ml, RT-8060 $5.05E^{+03}$ mR/hr, RT-8061 $8.0E^{+00}$ mR/hr, RT-8062 $5.05E^{+03}$ mR/hr

07:30 The Emergency Director enters procedure 0ERP01-ZV-IN01, Emergency Classification, and declares an **ALERT**, based on Initiating Condition **RA3**, Release of Radioactive Material or Increases in Radiation Levels that Impedes Operation of Systems Required to Maintain Safe Operation or to Establish or Maintain Cold Shutdown; **EAL-2,** Valid radiation monitor readings GREATER THAN 5 R/hr in areas requiring infrequent access to maintain plant safety functions. **1C**

Initiator Time:_____

Classification Time:_____

Classification EAL:_____

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|
| | Controller Information: The 15 minute Emergency Classification evaluation clock begins when the Emergency Director is informed of the MAB 10' radiation levels > 5 R/hr. | |
| | Upon Public Address Announcement, Security activates the Emergency Notification and Response System (ENRS) in accordance with 0ERP01-ZV-IN03. (Scenario ID Code 302, Drill Alert White Team). | **2C** |
| | The State/County and Nuclear Regulatory Commission contact points are notified of the Alert declaration IAW 0ERP01-ZV-IN02. | |
| | State and County Notification Time:_____ | |
| | NRC Notification Time:_____ | |
| 08:00 | The Emergency Director authority transfers to the TSC Manager. | |
| 08:45 | The Emergency Director authority transfers to the EOF Director. | |
| 08:35 | Chemistry Reports RCS Grab Sample reading 310 µCi/gram DEI. | |
| 08:37 | Control Room begins to shutdown due to Technical Specification 3.4.8 Action a. | |
| **08:50** | **Backup Meteorological Tower fails.** | |
| | **Refer to Mini-Scenario No. 3** | |
| 09:15 | 1D Steam Generator tube leak begins as indicated by Main Steam Line (MSL) Monitor RT-8049 reading $1.00E^{+00}$ µCi/cc, Condenser Vacuum Pump Monitors RT-8027D reading 197 GPD and RT-8027 (Noble Gas) reading $1.00E^{-01}$ µCi/cc; all monitors are trending up. | |
| 09:30 | Unit Vent Radiation Monitor (RT-8010B) increases to $6.50E^{+06}$ µCi/sec. | |
| 09:35 | Implementation of CFR 50.54(x) due to redeploying Security Officers from downwind of the Unit Vent. | |

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|
| 09:40 | Dose assessment indicates a radiation release has initiated based on STAMPEDE calculating 0.131 rem TEDE and 0.761 rem Thyroid CDE at 1 mile (Site Boundary). | **3C** |
| 09:45 | The Emergency Director enters procedure 0ERP01-ZV-IN01, Emergency Classification, and declares a **SITE AREA EMERGENCY** based on Initiating Condition **RS1**, **EAL-2,** Dose assessment indicates dose consequences greater than 0.1 rem TEDE or 0.5 rem Thyroid CDE at 1 mile (Site Boundary).<br><br>Controller Information: The 15 minute Emergency Classification evaluation clock begins when the Emergency Director receives the information of > 10% PAGs at 1 mile (Site Boundary).<br><br>Initiator Time:_____<br><br>Classification Time:_____<br><br>Classification EAL:_____<br><br>Within 15 minutes of the Site Area Emergency announcement, the Technical Support Center uses procedure 0ERP01-ZV-IN04 to develop a plan for Assembly and Accountability. | **4C** |
| Note | TSC Controller safety note: Contact the Control Room Controller to ensure the weather is not hazardous for Assembly and Accountability activities. If it is direct the Security Manager to simulate the Assembly and Accountability Public Address Announcement.<br><br>The State and County authorities are notified of the Site Area Emergency Declaration in accordance with 0ERP01-ZV-IN02.<br><br>State and County Notification Time:_____ | **5** |
| **10:00** | **HALON Discharge into EAB 35' Elevation Computer Room.**<br><br>**Refer to Mini-Scenario No. 4** | |
| 10:30 | Upon completion of Assembly and Accountability the Deputy EOF Director has 15 minutes to develop a plan for nonessential personnel Site Evacuation. | |

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|
| | Backup Meteorological Tower Repaired. | **7** |
| 11:00 | Control Room receives indications of a large SGTR, RT-8049 increases to $1.50E^{+02}$ µCi/cc. | |
| | The Main Steam Line 1D PORV Manual Isolation Valve suffers a catastrophic failure ejecting is valve bonnet and internals allowing steam to escape into the D Isolation Valve Cubical (IVC). | **8** |
| | **Refer to Mini-Scenarios No. 5 & 6** | |
| | Operators initiate a manual reactor trip, safety injection, manually close D MSIV, and transition into procedure 0POP05-EO-EO00, Reactor Trip or Safety Injection. | |
| 11:02 | Turbine Generator Building (TGB) Bullet Resistant Enclosure (BRE) 1C Security Officer reports observing a large steam plume coming from the IVC Roof. | **9** |
| 11:05 | Offsite dose assessment calculations using STAMPEDE indicate greater than TEDE and Thyroid CDE Protective Action Guidelines (PAG) at 1 mile (Site Boundary). | |
| 11:10 | Protective Action Recommendation for the General Emergency is evacuate Emergency Planning Zones 1, 2, 5, Affected Sectors are Q, R, A, B. | **10C** |

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|
| 11:15 | The Emergency Director enters procedure 0ERP01-ZV-IN01, Emergency Classification, and declares a **GENERAL EMERGENCY** based on Initiating Condition **FG1**, EAL-2 (4 points), Clad Loss, RCS Activity DEI greater than 300 µCi/gm; EAL-3 (4 points), RCS Loss, SG Tube is ruptured and has a non-isolable secondary steam release; EAL-3 (2 points), Containment Loss, SG Tube Leak Primary to secondary leakage greater than 150 gpd through any one steam generator with direct secondary side leakage to atmosphere.<br><br>**OR**<br><br>Initiating Condition **RG1**, Site Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity that Exceeds 1,000 mrem TEDE or 5,000 mrem Thyroid CDE for the Actual or Projected Duration of the Release; Using Actual Meteorology, **EAL-2**, Dose assessment indicates dose consequences greater than 1,000 mrem TEDE and/or 5,000 mrem thyroid CDE.<br><br>Controller Information: The 15 minute Emergency Classification evaluation clock begins when the Emergency Director receives indication that all three FPB have been challenged or > PAGs at 1 mile.<br><br>Initiator Time:_____<br><br>Classification Time:_____<br><br>Classification EAL:_____<br><br>The State and County authorities are notified of the General Emergency Declaration in accordance with 0ERP01-ZV-IN02.<br><br>State and County Notification Time:_____ | **11C** |
| 12:00 | Inject out of sequence chemistry data to the TSC Nuclear Engineer for core damage assessment demonstration. | |
| 13:00 | As the plant cools down the steam line pressure and release tapers off enough for an in-plant repair team is successfully repair 1D PORV Manual Isolation Valve. STP and State of Texas offsite field teams continue to monitor and track the plume. | **12** |

| TIME | SEQUENCE OF EVENTS | MESSAGE |
|---|---|---|
| 14:00 | Exercise Terminated | **13** |

| 0715 | 0930 | 1100 | 1300 | 1400 |
|---|---|---|---|---|
| **RA3**<br>**8060 5R**<br>**ALERT** | **SG Leak RS1**<br>**SG >10% PAGs**<br>**SAE**<br>**A&A** | **SGTR**<br>**GE**<br>**Rad release begins** | **Rad release isolated** | **Exercise Over** |

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