



FEMA

April 30, 2013

Mr. Arthur Howell
Regional Administrator, U.S. NRC, Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Dear Mr. Howell:

Enclosed is a copy of the radiological emergency preparedness final report for the South Texas Project Medical Service and Emergency Worker Monitoring and Decontamination/ Reception Center drills evaluated on March 20 and 21, 2013, by the U.S. Department of Homeland Security/Federal Emergency Management Agency Region 6. My staff evaluated the plume exposure pathway emergency planning zone (EPZ) around the South Texas Project (STP) located near Wadsworth, Matagorda County, Texas. There were no Deficiencies, three Areas Requiring Corrective Action (ARCA) corrected during the drill, and no Plan Issues identified during this exercise. Previously identified Plan Issue 60-11-6d1-P-01 was closed.

Based on the results of the exercise, the offsite radiological emergency response plans and preparedness for the STP and the affected local jurisdictions 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 STP will remain in effect.

A copy of this report was provided to Ms. Lisa Gibney at NRC Headquarters as well as the NRC Headquarters Document Control Desk. Should you have questions, please contact me at (940) 898-5199, or Brad DeKorte, Radiological Emergency Preparedness Site Specialist, at (940) 383-7304.

Sincerely,

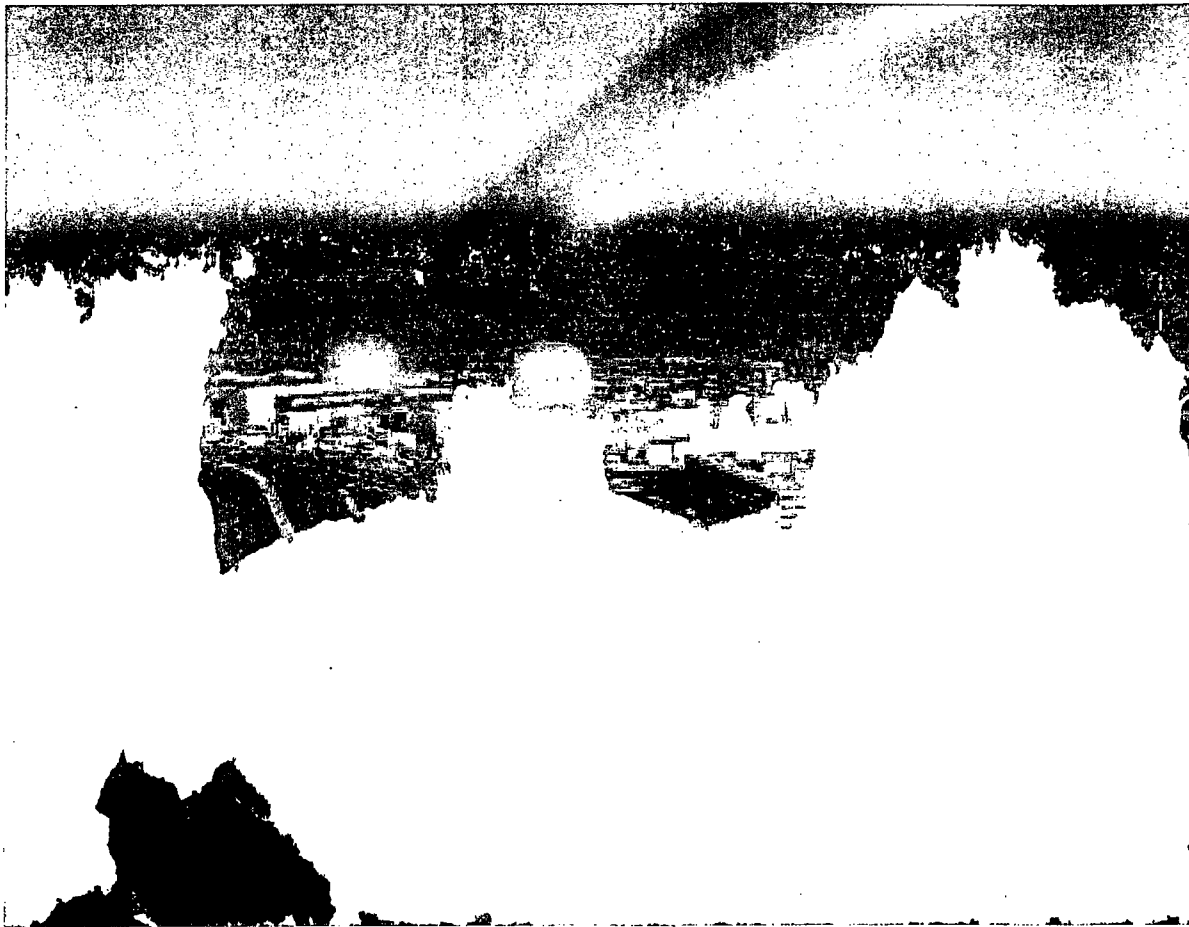
A handwritten signature in black ink that reads "Lisa R. Hammond".

Lisa R. Hammond
RAC Chair

Enclosure

cc: DHS/FEMA Headquarters - Vanessa Quinn, Renae Connell
TDEM - W. Nim Kidd, CEM
TX DSHS, Radiation Control Program - Dr. David Lakey
STP Manager of Emergency Preparedness – Joseph Enoch

IX49



South Texas Project

After Action Report/ Improvement Plan

Drill Date - March 20, 2013

Radiological Emergency Preparedness (REP) Program



FEMA

Published April 30, 2013

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South Texas Project After Action Report/Improvement Plan

Published April 30, 2013

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EXECUTIVE SUMMARY

On March 20 and 21, 2013, out-of-sequence medical, reception center, and emergency worker monitoring and decontamination drills were conducted for the South Texas Project (STP) located near Wadsworth, Matagorda County, Texas. Personnel from the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA), Region VI, evaluated the drills. The purpose was to assess the level of preparedness of state and local responders to react to a simulated radiological emergency at STP.

Personnel from the Texas Department of State Health Services, STP, Matagorda County Emergency Medical Services, and Matagorda Regional Medical Center participated in the drill. Evaluation Areas demonstrated included: Emergency Operations Management, Protective Action Implementation, and Support Operations/Facilities. Cooperation and teamwork of all the participants was evident during this drill, and DHS/FEMA wishes to acknowledge these efforts.

This report contains the final written evaluation of this out-of-sequence drill. The participants demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies, three Areas Requiring Corrective Actions (ARCA) that were corrected on the spot, and no Plan Issues identified as a result of this drill.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

South Texas Project

Type of Exercise

Drill

Exercise Date

March 20, 2013

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

Lisa Hammond

RAC Chair

FEMA Region VI

Technological Hazards Branch Chief

800 North Loop 288

Denton, Texas, 76209

940-898-5199

lisa.hammond@dhs.gov

Brad DeKorte

Federal Planning Team Lead

FEMA Region VI

Technological Hazards Program Specialist

800 North Loop 288

Denton, Texas, 76209
940-383-7304
brad.dekorte@fema.dhs.gov

Rae Walker
State Planning Team Lead
Texas Department of State Health Services
Emergency Planner
P.O. Box 149347
Austin, Texas, 78714
512-834-6770
rae.walker@dshs.state.tx.us

Vivian Wagnon
Utility Planning Team Lead
South Texas Project
Emergency Planner
P.O. Box 289
Wadsworth, Texas, 77483
361-972-8948
vtwagnon@stpegs.com

1.3 Participating Organizations

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

State Jurisdictions

Texas Department of State Health Services

Risk Jurisdictions

Matagorda County Department of Emergency Management

Support Jurisdictions

City of Palacios

Palacios Volunteer Fire Department

Matagorda County Environmental Health Department

Matagorda County Animal Control

Private Organizations

Matagorda Regional Medical Center

Matagorda County Emergency Medical Services

American Red Cross, Rio Colorado Chapter

South Texas Project

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region VI Office evaluated the drills on March 20 and 21, 2013 to assess the capabilities of 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 the South Texas Project (STP). The purpose of this report is to present the results and findings on the performance of the offsite response organizations during a simulated radiological emergency.

2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and identified Capabilities/REP Criteria selected to be exercised are discussed in the Exercise Plan (EXPLAN), Appendix C.

2.3 Scenario Summary

The medical drill scenario was developed to evaluate the response of drill participants to an incident at the South Texas Project requiring the transportation, treatment and decontamination of a radiologically contaminated injured individual. The drill scenario provided for the evaluation of the Matagorda County Emergency Medical Services and Matagorda Regional Medical Center staff.

The Reception Center and Emergency Worker Monitoring and Decontamination drill scenario was developed to evaluate the response of drill participants to an incident at the South Texas Project requiring the monitoring and decontamination of members of the general public along with Emergency Workers.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Drill 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 March 20 and 21, 2013 drills 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 (STP).

Each jurisdiction and functional entity was evaluated on its demonstration of criteria contained in the exercise evaluation areas as outlined in the Federal Register, Vol. 67, No. 80, "FEMA-Radiological Emergency Preparedness: Evaluation Methodology" (April 25, 2002). Detailed information on the exercise evaluation area criteria and the extent of play agreements used in this drill is included as an appendix to this report.

3.2 Summary Results of Drill 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 the drill 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

P - Plan Issue

Table 3.1 - Summary of Drill Evaluation

| | | Palacios RC & M/D | Matagorda County EMS | Matagorda Reg. Med. Ctr. |
|---|-----|-------------------|----------------------|--------------------------|
| DATE: 2013-03-20 SITE: South Texas Project, TX M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | | | |
| Emergency Operations Management | | | | |
| Mobilization | 1a1 | | | |
| Facilities | 1b1 | | | |
| Direction and Control | 1c1 | | | |
| Communications Equipment | 1d1 | | | |
| Equipment and Supplies | 1e1 | M | M | M |
| Protective Action Decision Making | | | | |
| EW Exp. Control Decisions | 2a1 | | | |
| PARs | 2b1 | | | |
| PADs | 2b2 | | | |
| PADs for Disabled/Functional Needs | 2c1 | | | |
| Ingestion PADs | 2d1 | | | |
| RRR Decisions | 2e1 | | | |
| Protective Action Implementation | | | | |
| EW Exp. Control Implementation | 3a1 | M | M | M |
| KI Public/Institutionalized | 3b1 | | | |
| PAD Imp. Disabled/Functional Needs | 3c1 | | | |
| PAD Imp. Schools | 3c2 | | | |
| TACP Establishment | 3d1 | | | |
| Impediments to Evacuation | 3d2 | | | |
| Implementation of Ingestion PADs | 3e1 | | | |
| Ingestion Strategies and Information | 3e2 | | | |
| Imp. of RRR Decisions | 3f1 | | | |
| Field Measurement and Analysis | | | | |
| RESERVED | 4a1 | | | |
| Field Team Management | 4a2 | | | |
| Field Team Operations | 4a3 | | | |
| Field Team Sampling | 4b1 | | | |
| Laboratory Operations | 4c1 | | | |
| Emergency Notification and Public Info | | | | |
| Initial Alert & Notification | 5a1 | | | |
| Backup Alert & Notification | 5a3 | | | |
| Exception Area Alerting | 5a4 | | | |
| Subsequent Public Information | 5b1 | | | |
| Support Operations/Facilities | | | | |
| Reception Center Operations | 6a1 | M | | |
| EW Monitoring & Decon | 6b1 | M | | |
| Congregate Care | 6c1 | M | | |
| Contaminated Injured Transport & Care | 6d1 | | M | M |

3.3 Criteria Evaluation Summaries

3.3.1 Support Jurisdictions

3.3.1.1 Palacios Reception Center and Emergency Worker Monitoring/Decontamination Station

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

- a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1; 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 6.a.1, 6.b.1.

ISSUE NO.: 60-13-6a1-A-01

CRITERION: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees.

CONDITION: Emergency Worker was chewing gum while monitoring an evacuee inside the decontamination area.

POSSIBLE CAUSE: Insufficient training.

REFERENCE: NUREG-0654/FEMA-REP-1, J.12

EFFECT: The emergency worker risks ingesting contamination when chewing (eating, drinking, or chewing) while in a controlled area where they may be exposed to contamination.

CORRECTIVE ACTION DEMONSTRATED: The EW was asked to get rid of the gum and was briefed on the potential problems that may occur when chewing gum in a potentially contaminated environment. The drill was re-started and the EW acknowledged that he was aware of the risks associated with chewing gum in the controlled area. The EW continued his assignment without further incidents.

ISSUE NO.: 60-13-6b1-A-02

CRITERION: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles.

CONDITION: It was observed that the individual was surveying the vehicle at a rate too fast for the instrument to accurately detect contamination.

POSSIBLE CAUSE: Inadequate training.

REFERENCE: NUREG-0654/FEMA-REP-1, K.5.a,b

EFFECT: Possible contamination may be missed due to improper survey technique with monitoring vehicle at a rate beyond the response capability of the survey instrument.

CORRECTIVE ACTION DEMONSTRATED: The Controller provided training to survey at a rate of 1-2 seconds per 1-2 inches. Proper technique was observed the remainder of the drill.

- 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 Matagorda Regional Medical Center

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

- a. MET: 1.e.1, 3.a.1, 6.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None

- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: 6.d.1.

ISSUE NO.: 60-11-6d1-P-01

ISSUE: According to the hospital plan, contamination is considered to be any reading of 300 cpm above background. A background reading was taken by the Control Point Attendant in accordance with plans. This background reading was not documented on any log or form, nor was it shared with the RPT when he arrived. The plan does not include instructions to document the background reading. If contamination is determined to be 300 cpm above background, without knowing what background is, there is no way to determine what the corrected counts would be and no way to determine what readings would exceed the 300 cpm above background.

CORRECTIVE ACTION DEMONSTRATED: The plans have been updated to include for background reading and recording on the monitoring form. Background readings were also posted on a sign.

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2 Private Organizations

3.3.2.1 Matagorda County EMS

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

- a. MET: 1.e.1, 3.a.1, 6.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 6.d.1.

ISSUE NO.: 60-13-6d1-A-03

CRITERION: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals.

CONDITION: It was observed that the RPT had placed the clean supplies into a

potentially contaminated area. It was also observed that after receiving the reading of 350 cpm and using maslin cloth to remove the contamination, the RPT did not perform a glove change or survey his hands to ensure no cross-contamination prior to grabbing the box of new gloves.

POSSIBLE CAUSE: Lack of training on contamination control measures.

REFERENCE: NUREG-0654/FEMA-REP-1, F.2; H.10; K.5.a, b; L.1, 4

EFFECT: Potential for cross-contamination.

CORRECTIVE ACTION DEMONSTRATED: Training was provided by the controller on contamination control and exercise play resumed. Proper contamination control was observed for the remainder of the drill.

- 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 drills, the offsite radiological emergency response plans and preparedness for the State of Texas and the affected local jurisdictions 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 STP will remain in effect.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2013-03-20, SITE: South Texas Project, TX

| LOCATION | EVALUATOR | AGENCY |
|---|--|----------------------------------|
| Palacios Reception Center and Emergency Worker Monitoring/Decontamination Station | *Brad DeKorte Scott Flowerday Elsa Lopez | FEMA RVI FEMA RVI FEMA RVI |
| Matagorda Regional Medical Center | Scott Flowerday *Elsa Lopez | FEMA RVI FEMA RVI |
| Matagorda County EMS | *Brad DeKorte | FEMA RVI |
| *Team Leader | | |

APPENDIX B: ACRONYMS AND ABBREVIATIONS

| Acronym | Meaning |
|---------|------------------------------------|
| ARCA | Areas Requiring Corrective Actions |
| CPA | Control Point Attendant |
| EMS | Emergency Medical Services |
| EW | Emergency Worker |
| MRMC | Matagorda Regional Medical Center |
| RC | Reception Center |
| RO | Radiological Officer |
| RPT | Radiation Protection Technician |
| STP | South Texas Project |

APPENDIX C: EXERCISE PLAN

SOUTH TEXAS PROJECT

IN CONJUNCTION WITH

MATAGORDA COUNTY

and

**RIO COLORADO CHAPTER OF
THE AMERICAN RED CROSS**

and

**TEXAS DEPARTMENT OF STATE HEALTH SERVICES,
RADIATION CONTROL PROGRAM**

FOR EVALUATION BY

**FEDERAL EMERGENCY MANAGEMENT AGENCY
MARCH 20, 2013**

1.0 Scope and Participants

The 2013 Palacios Reception Center exercise will test and provide the opportunity to evaluate the plans and procedures utilized to respond to evacuated site employees and the general public. It will demonstrate the utilization of the Palacios Reception Center.

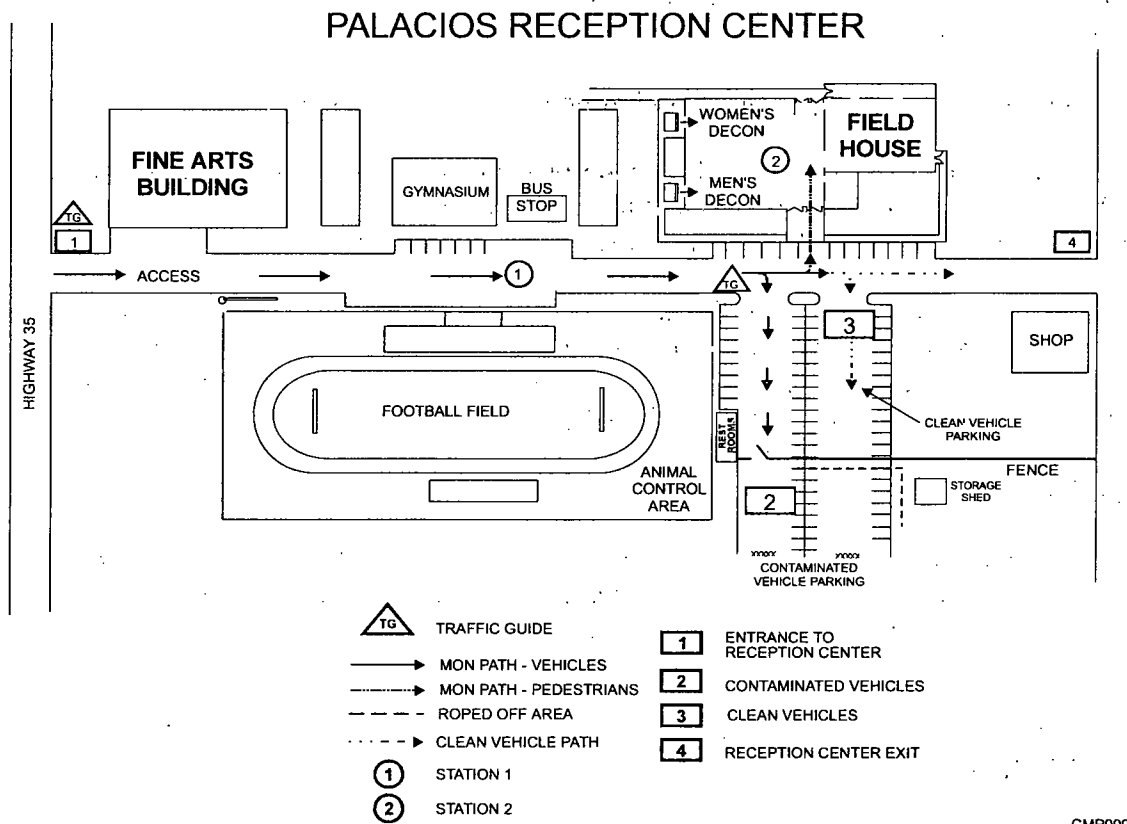
Whenever practical, the exercise incorporates provisions for free play by the participants. The scenario simulates a sequence of events, which results in a need to evacuate site employees as well as members of the public.

The scenario is sufficiently difficult to challenge all participants; however, responses will be controlled to ensure the safety of personnel and equipment.

The exercise will be conducted with the following participants:

1. Exercise Participants

- City of Palacios
- Matagorda County Emergency Medical Services
- Matagorda County, Environmental Health Department
- Matagorda County, Animal Control
- Palacios Volunteer Fire Department
- Rio Colorado Chapter of the American Red Cross
- South Texas Project (STP)
- Texas Department of State Health Services, Radiation Control Program



CMP00981A

Address:

Palacios High School Field House
 Hornet Drive
 Palacios, Texas 77414
 361-972-3368 (Field House)

2.0 Objectives and Extent of Play

The Evaluation Area applicable to this Exercise is taken from the Federal Emergency Management Agency (FEMA) Evaluation Area Criterion for a Reception Center. The Extent of Play follows the criterion in these documents. Any exception with the Evaluation Area and Extent of Play is noted below.

EVALUATION AREA 1.e – Equipment and Supplies to Support Operations

Criterion 1.e.1: Equipment, maps, displays, monitoring instruments, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations. (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9, J.10.a, b, e; J.11, 12; K.3.a; K.5.b)

Instruments are operationally checked before use. Instruments are calibrated in accordance with manufacturer's recommendations. A label indicating calibration is on each instrument. Sufficient quantities of appropriate electronic personal dosimeters and permanent record dosimetry are available for issuance to all categories of emergency workers deployed by that facility.

Extent of Play

To minimize the impact on the school, signs, stanchions, barricades and displays will only be setup in the back of the building. In addition, signs, stanchions, barricades and displays will only be setup in that part of the facility utilized to support the exercise.

EVALUATION AREA 3.a – IMPLEMENTATION OF EMERGENCY WORKER EXPOSURE CONTROL

Criterion 3.a.1: The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans/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. OROs maintain appropriate record-keeping of the administration of KI to emergency workers. (NUREG-0654/FEMA-REP-1, J.10.e; K.3.a, b; K.4)

The Offsite Response Organizations (OROs) issue appropriate dosimetry and procedures and manage radiological exposure. Emergency Workers periodically and at the end of each mission read their dosimetry and record the readings on the appropriate exposure record or chart.

Extent of Play

KI is not required.

Correction on the spot is permitted with issues related to the evaluation area. Correction on the spot is requested.

EVALUATION AREA 6.a.1 – MONITORING, DECONTAMINATION, AND REGISTRATION OF EVACUEES

Criterion 6.a.1: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees. (NUREG-0654/FEMA-REP-1, A.3; C.4; J.10.h; J.12)

The Reception Center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees.

Extent of Play

All positions at the Reception Center will be staffed and rosters will be available to demonstrate personnel depth for subsequent shifts. However, to streamline operations and to minimize the impact on the number of Controllers and Evaluators, only the women's locker room will be used during the evaluated exercise. When a male/female evacuee processes through Station 3, a male/female will demonstrate proper techniques for collecting clothes, valuables, and decontamination and monitoring as required.

The total population for the STP Emergency Planning Zone is 3132. In order to monitor 20% of the population (626 people) through one portal meter within 12 hours, approximately 52 people per hour would be required. The manufacturer's specification for the (ThermoFisher TPM-903B) is (2 seconds per person). Reception Center workers will demonstrate processing 6 evacuees (1 contaminated) through the portal monitor at a rate of approximately 1 minute per person to ensure time requirements for criterion 6.a.1 in the REP Program Manual on page III-59 are met.

One (1) evacuee will be simulated to be contaminated and require decontamination. The simulated contaminated person will walk through the decontamination process. No actual decontamination of individuals will occur; however, the team will work with the contaminated persons on collection of clothing and personal items, and return of non-contaminated clothing and personal items. Wearing modesty clothing, the contaminated person will process through the shower area, demonstrating decontamination techniques by turning on the water and simulating taking a shower. Even though decontamination techniques of individuals will be handled through limited demonstration, the team will demonstrate monitoring and decontamination of the shower area following use.

One evacuee vehicle will be simulated as being contaminated during the exercise. Decontamination of the evacuee's vehicle will be simulated. Monitoring and decontamination methods will be discussed between the evaluator and the Station 1 Player through interview, if needed.

The evacuee vehicle and bus pick-up area will not be setup and demonstrated due to minimizing the impact on the school. No evacuees will be transported to the congregate care facility. American Red Cross staff will be available to discuss the emergency vehicle (ambulances, police cars, etc.) and evacuee bus pick-up process. One of the vehicles will be designated as contaminated.

During the exercise, all 6 evacuees will be registered by the American Red Cross volunteers.

The players will pre-stage at the Matagorda County Annex Building in order to expedite activation of the Reception Center.

Correction on the spot is permitted with issues related to the evaluation area. Correction on the spot is requested.

EVALUATION AREA 6.b – MONITORING AND DECONTAMINATION OF EMERGENCY WORKERS AND THEIR EQUIPMENT AND VEHICLES

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency workers and their equipment and vehicles. (NUREG-0654/FEMA-REP-1, K.5.a, b)

The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency workers and their equipment and vehicles.

Extent of Play

Of the 2 simulated emergency workers processing through the facility, one (1) emergency worker (EW) will be simulated to be contaminated and require decontamination. The simulated contaminated EW will walk through the decontamination process. No actual decontamination of individual will occur, however, the team will work with the contaminated EW on collection of clothing and personal items, and return of non-contaminated clothing and personal items. Wearing modesty clothing, the contaminated EW will process through the shower area, demonstrating decontamination techniques by turning on the water and simulating taking a shower. Even though decontamination techniques of individuals will be handled through limited demonstration, the team will demonstrate monitoring and decontamination of the shower area, following use.

One emergency worker vehicle will be simulated as being contaminated during the exercise. Decontamination of the vehicle will be simulated. Monitoring and decontamination methods will be discussed between the evaluator and the Station 1 Player through interview if needed.

Correction on the spot is permitted with issues related to the evaluation area. Correction on the spot is requested.

EVALUATION AREA 6.c.1 – TEMPORARY CARE OF EVACUEES

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities.

(NUREG-0654/FEMA-REP-1, J.10.h, J.12)

Managers of congregate care facilities demonstrate the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines. Managers demonstrate the procedures to assure evacuees have been monitored for contamination and have been decontaminated as required prior to entering congregate care facilities.

Extent of Play

American Red Cross personnel will demonstrate congregate care via rosters, interview and other resource documents. A tour of the First Baptist Church in Palacios will be offered to the Evaluator during a time agreed upon by FEMA, the Controller, and ARC officials.

3.0 Narrative Summary and Event Timeline

An Alert is declared by STP based on the failure of the reactor to automatically shut down; however, a manual shutdown was successful. Matagorda County Dispatch contacts Emergency Operations Center (EOC) emergency workers to respond immediately to the EOC (simulated). The Radiological Director and the Director of the Rio Colorado Chapter of the American Red Cross (ARC) are included in this call out. The Radiological Director and the ARC Director place the Reception Center staffs on standby.

Conditions further degrade at the Station, and a Site Area Emergency is declared by STP due to a loss of both fuel clad and the reactor coolant system. The County officials discuss the potential need to open a Reception Center to receive the evacuated non-essential Station employees for monitoring. It is determined the Palacios Reception Center will be opened as a precautionary measure. The Radiological Director and the ARC Director request the Environmental Health Department and ARC staff and activate the Palacios Reception Center.

County and Station officials discuss the potential need to send Station employees to the Reception Center for monitoring and decontamination purposes. The Station determines this is not required and Station non-essential employees will be evacuated to their homes. County officials decide to continue the activation of the Reception Center as a precautionary measure.

Conditions continue to degrade, and the Station declares a General Emergency based on the loss of all three fission product barriers with a release of radioactive material via the main steam line. A Protective Action Recommendation is communicated to the Emergency Director, and the decision is made by the county to evacuate all residents 10-miles down-wind of the plant. Eventually, plant personnel are successful in ending the offsite radiological release.

| <u>TIME</u> | <u>SEQUENCE OF EVENTS</u> | <u>MESSAGE NUMBER</u> |
|-------------|--|-----------------------|
| 8:00 | Alert declared. Call comes from Matagorda County Sheriff Dispatch Office for the Radiological Director and Red Cross Director to respond to the EOC. | 1 |
| 8:20 | Site Area Emergency is declared. Station evacuates non-essential personnel to their homes. | 2 |
| 9:00 | Setup of the Palacios Reception Center begins. | |
| 9:35 | General Emergency is declared. Matagorda County officials recommend to the public that residents living 10 miles down-wind of the plant evacuate to the Palacios Reception Center. | 3 |
| | The first evacuees begin to arrive at the Palacios Reception Center. Monitoring, decontamination, and registration of evacuees continue until all are complete | 4, 5, 6 |
| 11:30 | Exercise ends and facility is deactivated. | 7 |
| 12:00 | Exercise critique begins. | |

Exercise Evaluation Areas and Extent of Play Agreement

Matagorda County Emergency Medical Service and Matagorda Regional Medical Center

March 21, 2013

4.0 Scope and Participants

The 2013 Matagorda Regional Medical Center MS-1 Exercise will test and provide the opportunity to evaluate the plans and procedures utilized to respond to contaminated injuries. It will demonstrate the utilization of hospital, ambulance, and procedures supporting emergency medical services.

Whenever practical, the exercise incorporates provisions for free play by the participants. The scenario simulates a sequence of events, which results in a medical accident with a contaminated injury. The degree of the simulated injuries requires immediate response by onsite and offsite emergency medical teams with offsite hospital support.

The scenario is sufficiently difficult to challenge participants; however, responses will be controlled to ensure the safety of all players and equipment.

The exercise will be conducted with the following participants:

Exercise Participants

- Matagorda County EOC (simulated via phone cell)
- Matagorda County Emergency Medical Services (MCEMS)
- Matagorda Regional Medical Center (MRMC)
- STP Emergency Response Division
- STP Radiation Protection
- STP Unit 1 Control Room (Simulated via phone cell)

5.0 Exercise Evaluation Areas and Extent of Play

The Evaluation Areas applicable to this exercise are taken from the Federal Emergency Management Agency (FEMA) Evaluation Area Criterion for Medical Exercises. The extent of play follows the criterion in these documents. Any exception to the Evaluation Area is noted with the Evaluation Area and extent of play.

EVALUATION AREA 1.e.1 – EQUIPMENT, MAPS, DISPLAYS, DOSIMETRY, POTASSIUM IODIDE (KI), AND OTHER SUPPLIES ARE SUFFICIENT TO SUPPORT EMERGENCY OPERATIONS. (NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b)

Instruments are operationally checked before use. Instruments are calibrated in accordance with manufacturer's recommendations.

Sufficient supplies, equipment, displays, and personal protective equipment are available.

Extent of Play

Monitoring instruments and dosimetry will be the only items inspected under this Evaluation Area, sub-element criterion.

Correction on the spot is requested:

EVALUATION AREA 3.a.1 – IMPLEMENTATION OF EMERGENCY WORKER EXPOSURE CONTROL (NUREG-0654/FEMA-REP-1, J.10.e; K.3.a, b; K.4)

The Offsite Response Organizations (OROs) issue appropriate dosimetry and procedures and manage radiological exposure. Emergency Workers periodically and at the end of each mission read their dosimetry and record the readings on the appropriate exposure record or chart.

Extent of Play

Correction on the spot is permitted with issues related to dosimetry use, reading dosimetry, alarm set points and record keeping. Administration and record-keeping of Potassium Iodide (KI) will not be demonstrated at this exercise. Correction on the spot is requested.

EVALUATION AREA 6.d.1 – TRANSPORTATION AND TREATMENT OF CONTAMINATED INJURED INDIVIDUALS (NUREG-0654/FEMA-REP-1, F.2; H.10; K.5.a, b; L.1, 4)

The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated, injured individuals.

Extent of Play

Correction on the spot is permitted with issues related to the adequacy of vehicles, equipment, and procedures, decontamination techniques, cross contamination issues for personnel transporting and treating contaminated injured or exposed individuals. Correction on the spot is requested.

6.0 Narrative Summary and Event Timeline

The onsite narrative is provided as a storyboard for information to be used by controllers. Actual onsite response will occur at the South Texas Project on a limited basis. However, station EMTs and Radiation Protection personnel will be available to support offsite agency responses to the simulated medical emergency.

This medical emergency exercise scenario consists of a plant employee working in a radiologically contaminated area. The employee is simulated to have fallen 8 feet and sustained a head injury, and a laceration on the right arm. Onsite EMTs respond and administer appropriate medical care.

As the EMTs assess the injured worker's medical needs, they determine the patient is unstable and requires hospital care. The EMT requests the Control Room to call an ambulance to respond for transfer offsite.

The Control Room contacts Matagorda County Emergency Medical Service to request ambulance service to transport the potentially contaminated injured worker.

Once monitored by Radiation Protection, the injured worker is found to have 200 - 800 cpm ($\beta\gamma$) on clothing and exposed skin (refer to Figure 10.0-1.) If the patient's contaminated clothing is removed, skin contamination remains (refer to Figure 10.0-2.).

The unconscious worker is packaged, loaded on the site ambulance, and driven out of the protected area (simulated). They meet up with the offsite ambulance at the Nuclear Training Facility.

Upon arrival of the Matagorda County Emergency Medical Service (MCEMS) ambulance, STP EMTs provide a briefing to MCEMS crew regarding patient condition. A Radiation Protection technician accompanies the patient and provides radiological information and contamination control. A second Radiation Protection technician is called out and directed to the MRMC.

In route, the hospital is appraised of the patient's physical and radiological condition.

Upon hospital arrival, the Radiation Protection technician and ambulance attendants brief the emergency room staff. Upon completion of the briefing, the attendants turn the injured worker over to emergency room staff care. The Radiation Protection technician, who travels with the ambulance stays with the vehicle to monitor, and decontaminate, if required. (Refer to 10.0-5, Ambulance Radiological Survey.) Prior to the release of the ambulance, the Radiation Protection technician will survey the crew and their equipment. Results of the survey are in accordance with Figure 10.0-5, Ambulance Radiological Survey. A brief decontamination demonstration will be performed prior to releasing the ambulance.

Upon hospital arrival, the Radiation Protection technician and ambulance attendants brief the emergency room staff. Upon completion of the briefing, the attendants turn the injured worker over to emergency room staff care. The Radiation Protection technician, who travels with the ambulance stays with the vehicle to monitor, and decontaminate, if required. Prior to the release of the ambulance, the Radiation Protection technician will survey the crew and their equipment. Results of the survey are in accordance with Figure 10.0-5, Matagorda County EMS Radiological Survey. A brief decontamination demonstration will be performed prior to releasing the ambulance.

The Radiation Protection technician, who responds, monitors the decontamination room, as well as performs contamination control duties and assists with decontamination, as necessary. (Refer to Figure 10.0-4 for Matagorda Regional Medical Center Radiological Survey and Layout).

The hospital staff provides initial treatment and decontamination. Medical treatment will take priority over contamination. Decontamination will be achieved with the assistance of the Radiation Protection technician. Once the patient is stabilized, treated, and decontaminated, the patient will be transferred out of the decontamination area using recognized transfer techniques for standard admittance to the hospital.

Once the patient is transferred, the hospital staff inside the decontamination area will carefully remove their protective clothing (with the support of the Radiation Protection technician) to ensure control of contamination.

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