

After Action Report/ Improvement Plan

South Texas Project Electric Generating Station
Reception Center/Emergency Worker Monitoring
and Decontamination



Exercise Date – September 15, 2022

Radiological Emergency Preparedness (REP) Program



FEMA

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EXECUTIVE SUMMARY

On September 15, 2022, an Out of Sequence Palacios Reception Center/Emergency Worker Monitoring and Decontamination Drill was conducted for the South Texas Project Electric Generating Station (STPEGS) located near Wadsworth in Matagorda County, Texas. Personnel from the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA), Region 6, evaluated the drill. The purpose was to assess the level of preparedness of state and local responders to react to a simulated radiological emergency at STPEGS.

Personnel from the Matagorda County Office of Emergency Management (MCOEM), Palacios Reception Center/Emergency Working Monitoring and Decontamination, and American Red Cross 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 the drill. The participants demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Level 1 Findings identified. There was one Level 2 Finding that was identified and corrected during the drill. There was one Plan Issue identified.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Palacios Reception Center and Emergency Worker Monitoring and Decontamination (EWMD)

Type of Exercise

Reception Center and EWMD Drill

Exercise Date

September 15, 2022

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Reception Center/EWMD

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the exercise:

State Jurisdictions

Texas Department of State Health Services

Risk Jurisdictions

Matagorda County (MC) Office of Emergency Management
MC Agriculture Extension Office
MC Clergyman's Group
MC Environmental Health Department
MC Public Information Officer
MC Sheriff's Office
MC Volunteer Organization Active in Disasters
Palacios Volunteer Fire Department

Private Organizations

American Red Cross
Matagorda Regional Medical Center
Matagorda County Emergency Medical Services
South Texas Project Electric Generating Station

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region 6 Office evaluated the Reception Center/EWMD Drill on September 15, 2022 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 Electric Generating Station (STPEGS). 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 D.

2.3 Scenario Summary

The Reception Center/EWMD Drill scenario was developed to evaluate the response of the drill participants to an incident at STP requiring the transportation, treatment, and decontamination of a radiologically contaminated injured individual. The drill scenario provided for the evaluation of the Palacios Reception Center/EWMD staff, Matagorda County Emergency Management, and Texas Department of State Health Services (DSHS).

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 September 15, 2022 drill to test the offsite emergency response capabilities of local governments in the 10-Mile Emergency Planning Zone (EPZ) surrounding STPEGS.

Each jurisdiction and functional entity was evaluated on its demonstration of criteria contained in the exercise evaluation areas as outlined in the REP Program Manual Rev. 1, FEMA P-1028, January 2016. Detailed information on the drill evaluation area criteria and the extent of play agreement used in this drill is found in Appendix D of this report.

3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.2a, on the following page, presents the status of all exercise evaluation area criteria from the REP Program Manual Rev. 1, January 2016 that were scheduled for demonstration during the drill by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number and the demonstration status are indicated by the use of the following letters:

M - Met (No Level 1 or unresolved Level 2 findings from prior exercises)

L1 – Level 1 Finding

L2 – Level 2 Finding

P - Plan Issue

N - Not Demonstrated

Tables 3.2 - Summary of Exercise Evaluation

Table 3.2a - Exercise Evaluation by Classification

Date: 9/15/2022 Site: South Texas Project Electric Generating Station			
Location	Criteria Title	Criteria	Evaluation Outcome
Palacios RC/EWMD	Monitoring/Decon/Registration of Public	6a1	P
Palacios RC/EWMD	EW Exposure Control Implementation	3a1	M
Palacios RC/EWMD	Equipment and Supplies	1e1	M
Palacios RC/EWMD	Monitoring/Decon of EWs/Equipment	6b1	M
Palacios RC/EWMD	Temporary Care of Evacuees	6c1	M
Palacios RC/EWMD	Facilities	1b1	M

3.3 Criteria Evaluation Summaries

3.3.1 Private Jurisdictions

3.3.1.1 Palacios Reception Center

Criterion: 1b1

Criterion: 1e1

Criterion: 3a1

Criterion: 6a1

Criterion: 6b1

Criterion: 6c1

In summary, the status of DHS/FEMA criteria for the Private Jurisdiction is as follows:

- a. MET: 1.b.1, 1.e.1, 3.a.1, 6.a.1, 6.b.1, and 6.c.1
- b. LEVEL 1 FINDINGS: NONE
- c. LEVEL 2 FINDINGS:

ISSUE NO.: 60-22-3a1-L2-01

CRITERION:

Implementation Emergency Worker Exposure Control

CONDITION:

The Radiological Briefing for the Emergency Workers at the Palacios Reception Center did not provide exposure limits and actions to be taken if the limits were reached.

POSSIBLE CAUSE:

Plans and procedures were not utilized.

REFERENCE:

NUREG-0654/FEMAREP-1 (K.3.a, b: K4)

Matagorda County Annex W Implementing Procedures Exposure Control for
Emergency Workers Procedure 42

EFFECT:

Emergency Workers may have exceeded their exposure rates.

CORRECTIVE ACTION DEMONSTRATED:

The Controller called a timeout and provided training and referred the individual to the procedures for the information to be provided during a radiological briefing.

A radiological briefing was provided to the Emergency Workers following the training and the exposure limits and actions to be taken if reached was provided.

ISSUE NO.: 60-22-6a1-P-02

CRITERION:

Monitoring/Decontamination and Registration of Public and Emergency Workers

CONDITION:

The section in the procedure for personnel monitoring did not have any provisions for non-ambulatory evacuees to be monitored that may not be able to pass through the portal monitor. A wheelchair may not fit through the portal monitor and other access functional needs such as crutches, or elderly in a scooter may arrive.

The procedure did not have provisions for closing the loop on an individual that may be contaminated but arrived in a “clean” vehicle. The procedure does not provide for identifying the vehicle the individual arrived in order to be processed for additional monitoring of the interior and moving from the “clean” parking to the “contaminated” parking or marked as potentially contaminated interior.

POSSIBLE CAUSE:

Plans and procedures have not updated to include this information.

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REFERENCE:

NUREG-0654/FEMAREP-1 (A.3; C.4; J.10.h; J.12)

Matagorda County, Annex W Implementing Procedures, Reception Center Operations, (Environmental Health Department) Procedure 72; and Matagorda County, Annex W Implementing Procedures, Reception Center Operations, Procedure 71.

EFFECT:

Mobility impaired evacuees may not be properly monitored and decontaminated.

There is a potential for cross contamination from contaminated individuals arriving in non-contaminated vehicles if the person working at the personnel monitoring station does not know the process and the process is not included in the procedures to reference.

RECOMMENDATION:

The Matagorda County Annex W, Implementing Procedures, Reception Center Operations (Environmental Health Department), Matagorda County Annex W, Implementing Procedures, Reception Center Operations, Procedure 72 and the Procedure 71 be updated to provide provisions for monitoring and decontaminating non-ambulatory evacuees for all stations.

The Matagorda County Annex W, Implementing Procedures, Reception Center Operations (Environmental Health Department) Procedure 72, and the Matagorda County Annex W, Implementing Procedures, Reception Center Operations, Procedure 71 be updated to provide for the process of contaminated evacuees that arrive in “clean” vehicles for additional interior surveying. This process was demonstrated; however, the provisions for the process are not included in the procedures.

- d. PLAN ISSUES: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

SECTION 4: CONCLUSION

Based on the results of the drill, 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 South Texas Project Electric Generating Station will remain in effect.

APPENDIX A: IMPROVEMENT PLAN

ISSUE NUMBER: 60-22-3a1-L2-01	
Criterion: 3a1 Implementation of Emergency Worker Exposure Control	
CONDITION: The Radiological Briefing for the Emergency Workers at the Palacios Reception Center did not provide exposure limits and actions to be taken if the limits were reached.	
CORRECTIVE ACTION DEMONSTRATED: The Controller called a timeout; training was provided and the radiological briefing procedures to be provided for Emergency Workers were pointed out to the individual conducting the briefing. A radiological briefing was provided to the Emergency Workers following the training and the exposure limits and actions to be taken if reached were provided.	
	PRIMARY RESPONSIBLE AGENCY: DSHS
	START DATE: September 15, 2022
AGENCY POC:	ESTIMATED COMPLETION DATE: September 15, 2022
ISSUE NUMBER: 60-22-6a1-P-02	
Criterion: 6a1 Monitoring/Decontamination and Registration of Public and Emergency Workers	
CONDITION: The section in the procedure for personnel monitoring did not have any provisions for non-ambulatory evacuees to be monitored that may not be able to pass through the portal monitor. A wheelchair may not fit through the portal monitor and other access functional needs such as crutches, or elderly in a scooter may arrive. The procedure did not have provisions for closing the loop on an individual that may be contaminated but arrived in a “clean” vehicle. The procedure does not provide for identifying the vehicle the individual arrived and processed for additional monitoring of the interior and moving from the “clean” parking to the contaminated parking or marked as potentially contaminated interior.	
RECOMMENDATION: The Matagorda County Annex W, Implementing Procedures, Reception Center Operations (Environmental Health Department), Matagorda County Annex W, Implementing Procedures, Reception Center Operations, Procedure 72 and the Procedure 71 needs to be updated with provisions for monitoring and decontaminating non-ambulatory evacuees for all stations. The Matagorda County Annex W, Implementing Procedures, Reception Center Operations (Environmental Health Department) Procedure 72, and the Matagorda County Annex W, Implementing Procedures, Reception Center Operations, Procedure 71 needs to be updated providing the process of contaminated evacuees arriving in “clean” vehicles for additional interior surveying the vehicle. This process was demonstrated; however, the provisions for the process are not included in the procedures.	

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CORRECTIVE ACTION DESCRIPTION: DSHS and OROs will work on updating the plans and/or procedures to meet the NUREG-0654/FEMA-REP-1, Rev. 2 Planning Standards “J”, “K”, and “O” accordingly and conduct the necessary training.

Plans and Procedures should be updated before the next demonstration at the identified location or at the next submission of the Annual Letter of Certification, whichever comes first.

	PRIMARY RESPONSIBLE AGENCY: DSHS, Matagorda County Office of Emergency Management, and other OROs as identified.
	START DATE: October 1, 2022
AGENCY POC: Amanda Campos; Robin Phillips	ESTIMATED COMPLETION DATE: January 31, 2023

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Description
ARC	American Red Cross
CPM	Counts per Minute
DHS/FEMA	Department of Homeland Security/Federal Emergency Management Agency
DRD	Direct Reading Dosimeter
DSHS	Department of State Health Services
EM	Emergency Management
EPD	Electronic Personnel Dosimeter
EPZ	Emergency Planning Zone
EW	Emergency Worker
EXPLAN	Exercise Plan
EWMD	Emergency Worker Monitoring and Decontamination
FBC	First Baptist Church
KI	Potassium Iodide
MC	Matagorda County
MCOEM	Matagorda County Office of Emergency Management
PPE	Personnel Protective Equipment
RC	Reception Center
REP	Radiological Emergency Preparedness
RO	Radiological Officer
STP	South Texas Project
TLD	Thermoluminescent Dosimeter

APPENDIX C: EXERCISE EVALUATORS & TEAM LEADS

DATE: 9/15/2022
SITE: South Texas Project

South Texas Project September 15, 2022				
TEAM LEADER	LOCATION	EVALUATION AREAS	EVALUATOR	AGENCY
*Elsa Lopez	Palacios Reception Center/EWMD	1b1, 6c1	* Elsa Lopez	FEMA R6
		3a1, 6b1	Brad DeKorte	FEMA R6
		1e1, 6a1	Tim Pflieger	FEMA R6

*Team Lead

Reception Center Station Assignments

- Vehicle Monitoring – Elsa Lopez
- Portal Monitor – Brad DeKorte
- Male Decon/Shower – Tim Pflieger
- Female Decon/Shower – Elsa Lopez
- Registration – Brad DeKorte

APPENDIX D: EXERCISE PLAN

EXERCISE EVALUATION AREAS AND EXTENT OF PLAY AGREEMENT For the PALACIOS RECEPTION CENTER September 15, 2022

The Evaluation Area applicable to this Exercise is taken from the Federal Emergency Management Agency (FEMA) Evaluation Area Criterion for Reception Center and Emergency Worker Monitoring/Decontamination Drills. 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.b – Facilities

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654/FEMA-REP-1, G.3.a; H.3; J.10.h; J.12; K.5.b)

Extent of Play

To alleviate environmental working conditions during the drill and provide for a safe drill environment, the drill will be held at an alternative location at 4000 Avenue F, Bay City, TX. The Palacios Field House will be observed by evaluators for the purpose of verifying adequacy of facility for reception center use. The Congregate Care Facility walk through will be conducted on a date to be determined.

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 or technical specifications sheet indicating calibration is located with 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 neighborhood, signs, stanchions, barricades, and displays will only be setup directly at the facility itself, and only in that part of the facility utilized to support the exercise.

Correction on the spot is requested.*

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)

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Instruments are operationally checked before use. Instruments are calibrated in accordance with manufacturer's recommendations. A label or technical specifications sheet indicating calibration is located with 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 neighborhood, signs, stanchions, barricades, and displays will only be setup directly at the facility itself, and only in that part of the facility utilized to support the exercise.

Correction on the spot is requested.*

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 recordkeeping of the administration of KI to emergency workers. (NUREG-0654/FEMA REP-1, K.3.a., b; K.4)

The Offsite Response Organizations (ORO) 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.

Correction on the spot is requested.*

EVALUATION AREA 6.a – 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)

Extent of Play

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

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All personnel and equipment decontamination measures will be conducted via discussion and actual hands-on decontamination. All contamination levels will be via Controller inject(s). Free play of this activity is not permitted. Two simulated evacuees processing through the facility will be demonstrated (two evacuees and one emergency worker in total). No actual decontamination of the individuals will occur. One simulated contaminated person will be chosen to walk through the decontamination process.

All positions at the Reception Center will be staffed and rosters will be available to demonstrate personnel depth for subsequent shifts. When a male/female evacuee processes through the shower station, a male/female will demonstrate proper techniques for collecting clothing, valuables, and provide decontamination and monitoring as required.

The total population for the STP Emergency Planning Zones is 3,132. In order to monitor 20% of the population (626 people) through one portal monitor within a 12-hour period, approximately 52 people per hour would be required. The manufacture's specification for the (Thermo Fisher TPM-903B) is two 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 Part III, page 202 is met.

Even though decontamination techniques of individuals will be handled through limited demonstration, the team will demonstrate monitoring and decontamination of the sink area following use. No evacuees will be transported to the congregate care facility. Matagorda County Office of Emergency Management staff will be available to discuss the emergency vehicle (ambulances, police cars, etc.) and evacuee bus pick-up process.

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 requested.*

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

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

Extent of Play

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

All personnel and equipment decontamination measures will be conducted via discussion and actual hands-on decontamination. All contamination levels will be via Controller inject(s). Free

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play of this activity is not permitted. One simulated emergency worker processing through the facility will be demonstrated (two evacuees and one emergency worker in total). One simulated emergency worker vehicle will be decontaminated during the exercise. No actual decontamination of the individuals will occur; however, the emergency worker team will work with the contaminated persons on collections of their clothing and personal items and then the return of non-contaminated clothing and personal items.

During the exercise, all 8 evacuees will be registered by the Matagorda County Office of Emergency Management staff and volunteers and the two emergency workers will be released.

Correction on the spot is requested.*

EVALUATION AREA 6.c – 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)

Extent of Play

A representative from the American Red Cross along with a representative from Matagorda County Emergency Management will be available to demonstrate congregate care via rosters, interviews, and other resource documents. The availability of blankets, cots, and other temporary care items can be provided at the request of FEMA through both the Matagorda County Emergency Management and the American Red Cross. A letter of agreement with the American Red Cross outlining the availability of resources in the event of a radiological accident within Matagorda County can be provided at the request of FEMA through Matagorda County Emergency Management.

Correction on the spot is requested.*

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