



South Texas Project

After Action Report/ Improvement Plan

Drill Date - March 11, 2010

Radiological Emergency Preparedness (REP) Program



FEMA

Published April 05, 2010

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South Texas Project After Action Report/Improvement Plan

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EXECUTIVE SUMMARY

On March 11, 2010, an out-of-sequence medical drill was 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 drill. The purpose was to assess the level of preparedness of state and local responders to react to a simulated radiological emergency at STP. The previous medical drill at this site was conducted February 20, 2008. Personnel from Matagorda County Emergency Medical Services, Matagorda County Hospital District and Palacios Community Medical Center, the Department of State Health Services, and STP participated in the drill.

Personnel from the Texas Department of State Health Services, South Texas Project, Matagorda County Emergency Medical Services, and Palacios Community 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 these drills, 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, one Area Requiring Corrective Actions (ARCA), and no Plan Issues identified during these drills.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

South Texas Project

Type of Exercise

Drill

Exercise Date

March 11, 2010

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

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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

Palacios Community Medical Center

Matagorda County Emergency Medical Services

Private Organizations

South Texas Project

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The DHS/FEMA Region VI Office evaluated the drill on March 11, 2010 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 E.

2.3 Scenario Summary

The 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 Palacios Community Medical Center staff .

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 11, 2010 drill 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 these drills 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

DATE: 2010-03-11 SITE: South Texas Project, TX M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated			
		Matagorda County EMS	Palacios Medical
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
Equip & Supplies to support operations	1e1	M	M
Protective Action Decision Making			
Emergency Worker Exposure Control	2a1		
Radiological Assessment and PARs	2b1		
Decisions for the Plume Phase -PADs	2b2		
PADs for protection of special populations	2c1		
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1		
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1		
Protective Action Implementation			
Implementation of emergency worker exposure control	3a1	M	M
Implementation of KI decision	3b1		
Implementation of protective actions for special populations - EOCs	3c1		
Implementation of protective actions for Schools	3c2		
Implementation of traffic and access control	3d1		
Impediments to evacuation are identified and resolved	3d2		
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		
Field Measurement and Analysis			
Adequate Equipment for Plume Phase Field Measurements	4a1		
Field Teams obtain sufficient information	4a2		
Field Teams Manage Sample Collection Appropriately	4a3		
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		
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		
Support Operations/Facilities			
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	M	A

3.3 Criteria Evaluation Summaries

3.3.1 Private Organizations

3.3.1.1 Matagorda County EMS

- 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: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 Palacios Community Medical Center

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

ISSUE NO.: 60-10-6d1-A-01

CRITERION: Facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2., H.10., K.5.a.b., L.1., 4)

CONDITION: There was no physician present during the drill as is required by DHS-FEMA REP Program guidance. A physician was in contact with the Palacios Community Medical Center but was not physically present to supervise or assist as required.

POSSIBLE CAUSE: Failure to follow the plan. The Matagorda Regional Medical Center Radiological Emergency Plan paragraph 5.4.1.2 requires the health care provider to ensure additional physician assistance is available to cover the emergency room. During the course of the drill, there was no physician physically present to provide this additional assistance or to supervise treatment of the contaminated injured patient.

REFERENCE: Krimm Memorandum "Clarification of Selected Provisions of Guidance Memorandum (GM) MS-1, Medical Services" dated February 9, 1988, and Interim REP Program Manual, August 2002, Section III.J - Evaluation of Emergency Medical Services Drills, page III-238.

EFFECT: The absence of the physician on site could result in a delay of advanced medical treatment for the patient if required.

RECOMMENDATION: Provide training to the medical center staff to ensure that a physician is physically present to supervise treatment of the contaminated injured patient as is required by the emergency plan and DHS/FEMA guidance.

- 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 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 STP will remain in effect.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 60-10-6d1-A-01		Criterion: 6d1	
ISSUE: There was no physician present during the drill as is required by DHS-FEMA REP Program guidance. A physician was in contact with the Palacios Community Medical Center but was not physically present to supervise or assist as required.			
RECOMMENDATION: Provide training to the medical center staff to ensure that a physician is physically present to supervise treatment of the contaminated injured patient as is required by the emergency plan and DHS/FEMA guidance.			
CORRECTIVE ACTION DESCRIPTION: Same as recommendation. Matagorda County will train hospital staff to call a licensed Physician in the event there is a radiologically contaminated patient and will have them physically present at the next MS-1 exercise.			
CAPABILITY: Medical Surge		PRIMARY RESPONSIBLE AGENCY: Matagorda County	
CAPABILITY ELEMENT: Personnel		START DATE: 2010-04-05	
AGENCY POC: Doug Matthes, Matagorda Co. EMC 979-323-0707		COMPLETION DATE: 2012-04-05	

APPENDIX B: BEST PRACTICES

1. Patient Contamination Diagram

Summary: The RPT placed a piece of masking tape onto his wrist and drew a diagram of the contaminated patient's body noting areas and levels of contamination.

Description: At 1027, a second call was received at PCMC from STP stating that the patient was indeed contaminated. STP stated that the patient had contamination readings of 1000 counts per minute (cpm) on the right and left wrists, 800 cpm on the chest area, and 600 cpm on the forehead. The RPT placed a piece of masking tape onto his wrist and drew a diagram of the patient's body noting areas and levels of contamination.

APPENDIX C: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2010-03-11, SITE: South Texas Project, TX

LOCATION	EVALUATOR	AGENCY
Matagorda County EMS	Brad DeKorte	DHS/FEMA
Palacios Community Medical Center	Linda Gee *Tim Pflieger	DHS/FEMA DHS/FEMA
* Team Leader		

APPENDIX D: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ARCA	Areas Requiring Corrective Actions
BZ	Buffer Zone
CN	Charge Nurse
CP	Control Point
cpm	Counts Per Minute
DHS/FEMA	Department of Homeland Security/Federal Emergency Management Agency
EMT	Emergency Medical Technician
EPD	Electronic Personal Dosimeter
ER	Emergency Room
ETA	Estimated Time of Arrival
GM	Guidance Memorandum
KI	Potassium Iodide
LCD	Liquid Crystal Display
MCEMS	Matagorda County Emergency Medical Services
PCMC	Palacios Community Medical Center
PPE	Personal Protective Equipment
REA	Radiation Emergency Area
RPT	Radiation Protection Technician
STP	South Texas Project
TLD	Thermoluminescent Dosimeter

APPENDIX E: EXERCISE PLAN

2010 MS-1 MEDICAL EXERCISE PALACIOS COMMUNITY MEDICAL CENTER

1.0 Scope and Participants

The 2010 Palacios Community 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 station 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 contaminated injuries. 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 personnel and plant equipment.

The exercise will be conducted with the following participants:

Exercise Participants

- STP Unit 1 Control Room (simulated via phone cell)
- STP Radiation Protection
- STP Plant Protection (EMTs)
- STP Emergency Response Division
- Matagorda County Emergency Medical Services (MCEMS)
- Palacios Community Medical Center (PCMC)

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PALACIOS COMMUNITY MEDICAL CENTER**

2.0 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, POTASIUUM IODIDE (KI), AND OTHER SUPPLIES ARE SUFFICIENT TO SUPPORT EMERGENCY OPERATIONS.

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.

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

Extent of Play

Donning and doffing of personal protective equipment will be demonstrated by one player.

Correction on the spot is requested for purposes of dressing out for local agencies.*

EVALUATION AREA 3.a.1 – IMPLEMENTATION OF EMERGENCY WORKER EXPOSURE CONTROL

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. Correction on the spot is requested.*

EVALUATION AREA 6.d.1 – TRANSPORTATION AND TREATMENT OF CONTAMINATED INJURED INDIVIDUALS

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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.*

Onsite Extent of Play

Matagorda County EMS will be notified of the need to transport and treat a contaminated injured individual. Onsite medical responders will simulate initial treatment of the injured individual providing emergency care until the ambulance arrives to transport the injured individual to the hospital.

**Correction-on-the-spot is defined in 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.*

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3.0 Conduct and Evaluation

The Exercise will simulate a medical emergency at the South Texas Project, which will demonstrate the effectiveness of communications with offsite organizations, personnel, and activities to support the Emergency Plan and associated procedures.

Controllers may provide clarification that is necessary for participants to understand the intent of the message given by the controller or on a message sheet.

The medical emergency response at the South Texas Project will be situated at a simulated location. The patient will be packaged at the Nuclear Training Facility by the onsite EMTs. Matagorda County EMS is contacted to respond to the site for patient transfer to an offsite hospital.

A controller will be on the ambulance, to provide patient performance paths (vital signs) and contamination levels during the trip to the hospital.

The organization for this Exercise will consist of the Exercise Coordinator, Controllers, Evaluators, Participants, and Observers, as follows:

- The Exercise Coordinator is responsible for the coordination and the safe conduct of the exercise. This individual will provide resolution to scenario-related questions and ensure that the conduct of the exercise does not adversely impact the operation of the station and/or offsite agencies' actual emergency response activities.
- The Controllers will deliver event condition messages to designated participants at specified times and places during the Exercise, including contingency messages, as required, to keep the Exercise moving according to the scenario timeline.
- Controllers will also observe the scenario actions and prepare written evaluations of the Participants' performance. Controllers will be identified by wearing red badges labeled CONTROLLER.
- The Evaluators will judge the effectiveness of participating organizations, personnel, and activities. Evaluators will be identified by wearing blue EVALUATOR badges.
- The Observers will be authorized, on a limited basis, to watch Exercise activities for the purpose of personal education. Observers will be identified by wearing white OBSERVER badges.

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In the event of an actual emergency during the conduct of the exercise, all exercise activities will be immediately halted and response directed to the actual event.

The Controller is responsible for immediately intervening and terminating any action during the conduct of the exercise that would place either an individual or a plant component in an unsafe condition.

All telephone communications, radio transmissions and public address announcements related to the exercise will begin and end with the statement **THIS IS A DRILL**.

While participants are expected to inject as much realism into their response actions as possible, safety of personnel and plant equipment shall not be jeopardized.

After the Exercise is complete, the Exercise Coordinator will conduct a critique session. Potential issues with the emergency plan, procedures, training program, facilities, equipment, and/or other areas will be identified through the critique and evaluation process. The issues will be documented by the Exercise Coordinator and corrected by the individuals/organizations that have responsibility for the area of the identified issue(s).

4.0 Definitions

- Controller:** A member of the exercise organization assigned to one or more activities for the purpose of keeping the action going according to a scenario, resolving scenario discrepancies, and ensuring the safe deliberation of actions by the participants. A controller evaluates and makes recommendations for improvement and recognizes above average performance.
- Evaluator:** A member of the exercise organization assigned to one or more activities to evaluate and make recommendations for improvement or recognition of above average performance.
- Exercise:** An event which tests and provides the opportunity to evaluate the plans and procedures utilized to respond to contaminated injuries. It will demonstrate the utilization of hospital, ambulance, and station procedures supporting emergency medical services.
- Observer:** An individual who is authorized to observe the exercise, but is not authorized to interact with the participants.
- Participants:** All individuals assigned to perform functions of the emergency response organization as a participant in the exercise.

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PALACIOS COMMUNITY MEDICAL CENTER**

5.0 References

1. Title 10, Code of Federal Regulations, Part 50, Appendix E
2. STP Emergency Plan
3. Matagorda County Hospital District Radiological Emergency Plan
4. NUREG-0654/FEMA-REP-1, Criteria For The Preparation And Evaluation Of Radiological Emergency Response Plans And Preparedness In Support Of Nuclear Power Plants
5. FEMA Evaluation Area Criterion for Medical Exercises
6. STP Plant procedure, Emergency Medical Response Plan (OPGP03-ZA-0106)
7. FEMA General Memorandum MS-1, Medical Services
8. STP Plant Procedure, OPOP04-ZO-0004, Personnel Emergencies

6.0 Controller Instructions

Instructions:

Each Controller and Evaluator should be familiar with the following:

1. The applicable evaluation area and extent of play of the exercise.
2. The exercise conduct and evaluation guidelines and precautions.
3. The exercise scenario, including initiating events and expected course of action.
4. The facilities and locations that will be involved and the specific actions to be observed.
5. The evaluation checklists provided to document participant actions.

Controllers should be positioned at assigned locations at least 15 minutes prior to the activation of the facility or location.

Message sheet information should be delivered in sequence and as written, unless the Exercise Coordinator authorizes change.

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Controllers may provide information to the participants regarding scenario progression or the resolution of problems encountered in the course of the simulated emergency.

Each Controller/Evaluator shall take detailed notes regarding the progress of the Exercise (i.e., a chronology) and the response of the participants.

The Lead Exercise Controller in conjunction with the FEMA Evaluator may delay, suspend or cancel the exercise if an emergency situation requires use of the ambulance, hospital ER or personnel.

Controllers/Evaluators should carefully note the arrival and departure times of participants. Controllers/Evaluators should carefully note problem areas encountered and good practices. The chronology can be used to corroborate critique items that are questioned by participants. Refer to Attachment A for the Controller/Evaluator Forms.

Controllers for this Exercise shall include:

- Exercise Coordinator
- STP Control Room Controller (simulated phone cell)
- Palacios Community Medical Center Controller
- STP Emergency Medical Technician (EMT) Controller
- Radiation Protection Controller – Hospital
- Radiation Protection Controller – Ambulance

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7.0 Narrative Summary and Event Timeline

The onsite narrative is provided as 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.

STP Unit 1 is in a refueling outage. An employee is working on the bridge of the refueling machine in the Fuel Handling Building. The employee slips on the bridge and falls into the spent fuel pool and hits her head. She is retrieved by co-workers and the onsite EMTs are called and respond to the scene.

The EMTs arrive, evaluate medical conditions and determine the injured worker needs to be transported to an offsite medical facility, as she is disoriented and has a bleeding gash on her eye and forehead. The EMTs contact the simulated Control Room to confirm the need for an ambulance to respond to the site for transfer to the hospital.

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

Matagorda Regional Medical Center will redirect the ambulance to the Palacios Community Medical Center due to the Matagorda Regional Medical Center being overwhelmed with patients from the collapse of the bleachers at the high school during a pep rally.

Radiation Protection evaluates radiological conditions and establishes contamination controls for the accident scene. All individuals that were on the bridge are contaminated and must go through personnel monitoring and decontamination.

The site ambulance will be maneuvered to a pickup point and await arrival of the injured individual from the MAB.

Once monitored by Radiation Protection, the injured worker is found to have 500 - 1000 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 worker is packaged, loaded on the site ambulance, and driven to the pick up location. They meet up with the offsite ambulance at the Nuclear Training Facility.

Upon arrival of the ambulance, STP EMTs provide a briefing to Matagorda County Emergency Medical Services crew regarding patient condition. A Radiation Protection technician

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accompanies the patient and provides radiological information and contamination control. A second Radiation Protection technician is called out and directed to the PCMC.

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. 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 Palacios Community 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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TIME	SEQUENCE OF EVENTS	MESSAGE NUMBER
10:00	Initial conditions established.	1
10:05	The telephone cell implements storyboard information.	2
<u>CONTROLLER NOTE</u> Communications with offsite for support will be made to Matagorda County Emergency Medical Services.		
10:10	Unit 1 Control Room (simulated phone cell) contacts Matagorda County Emergency Medical Services at (979) 323-9020 and requests they respond for a transfer.	3
10:13	Matagorda Regional Medical Center re-directs the patient to PCMC for treatment.	4
<u>CONTROLLER NOTE</u> For more information on the injured worker's vital signs, refer to Table 10.0-1, Patient Performance Paths. For more information on the injured worker's radiological conditions, refer to Figures 10.0-1, Patient's Contamination-with Clothing, and 10.0-2, Patient's Skin Contamination.		
10:40	Site EMT(s) provide patient status and turn over care to Matagorda County EMS. Radiation Protection provides radiological status of the patient.	

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TIME	SEQUENCE OF EVENTS	MESSAGE NUMBER
10:45	MCEMS contacts PCMC with known patient information	5
11:05	Matagorda County EMS arrives at PCMC with the patient.	
11:08	Patient is met by medical staff and Radiation Protection at the unloading area for radiological status, medical briefing, initial treatment and decontamination.	
11:15	Stabilization and decontamination of patient begins.	
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center"><u>CONTROLLER NOTE</u></p> <p>For more information on patient contamination, refer to Figure 10.0-3, Patient's Skin Contamination After Decontamination.</p> </div>		
11:35	Matagorda County Emergency Medical Services personnel, vehicle, and equipment are monitored, decontaminated as needed, and released.	
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center"><u>CONTROLLER NOTE</u></p> <p>For more information on ambulance radiological conditions, refer to Figure 10.0-5, Matagorda County EMS Radiological Survey.</p> </div>		
11:45	Patient decontamination is complete.	
11:50	Patient is moved from emergency room area for final treatment and hospital admittance.	

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TIME	SEQUENCE OF EVENTS	MESSAGE NUMBER
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<p><u>CONTROLLER NOTE</u></p> <p>For more information on hospital radiological conditions, refer to Figure 10.0-4, Palacios Community Medical Center Radiological Survey and Layout.</p>

12:00	Hospital personnel exit decontamination room. Medical Exercise is terminated.	6
12:20	Critique begins.	

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8.0 Controller Data and Messages

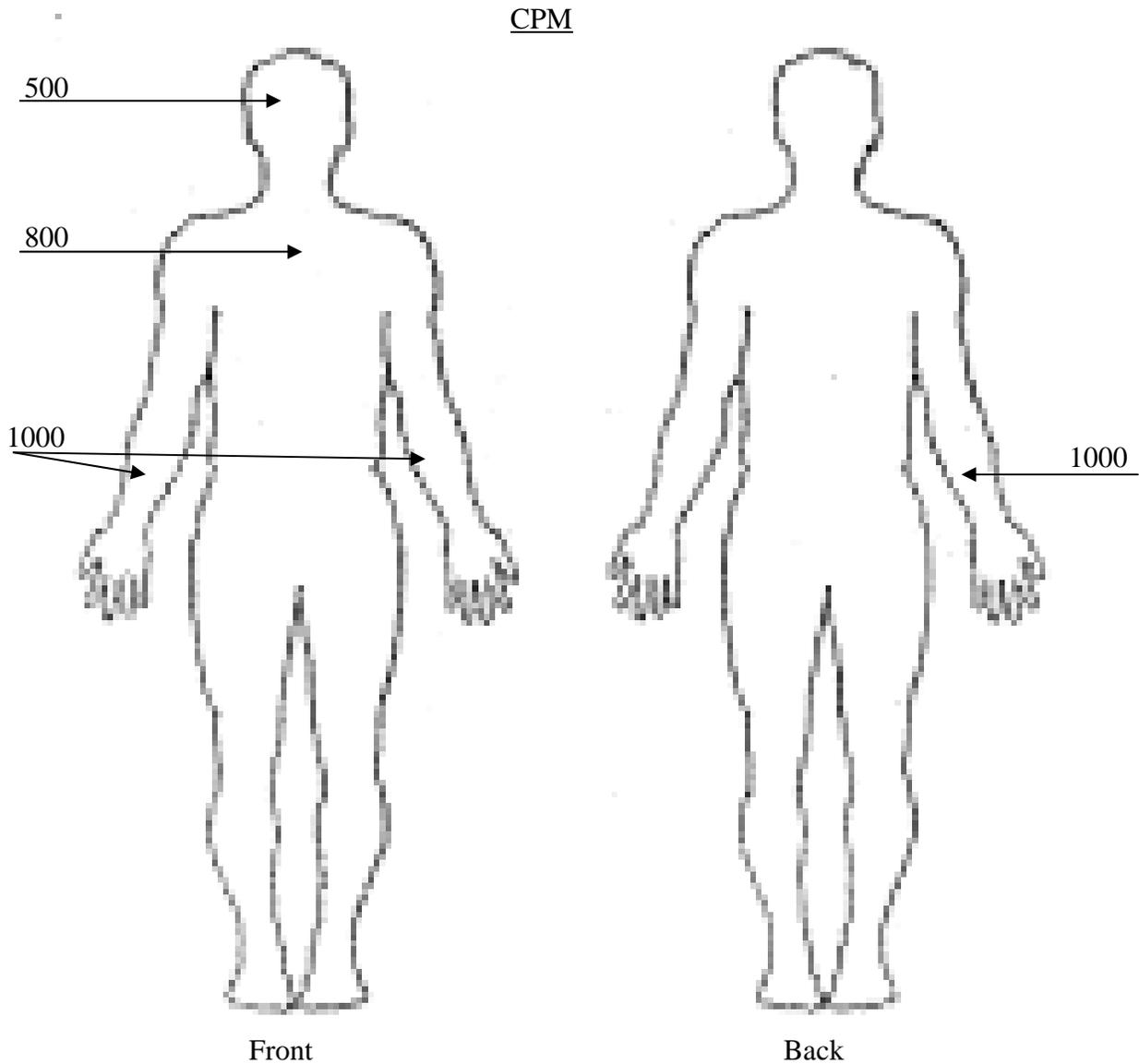
This section provides Controllers with patient data and messages that will be needed to relay injured worker data to participants who are responding to the medical emergency. Patient contamination levels are provided based on clothes on or off, and if decontamination attempts have been made. Refer to Patient Contamination Information (10.0-1 through 10.0-3).

The patient medical information is as if full treatment is provided and the patient is responding well.

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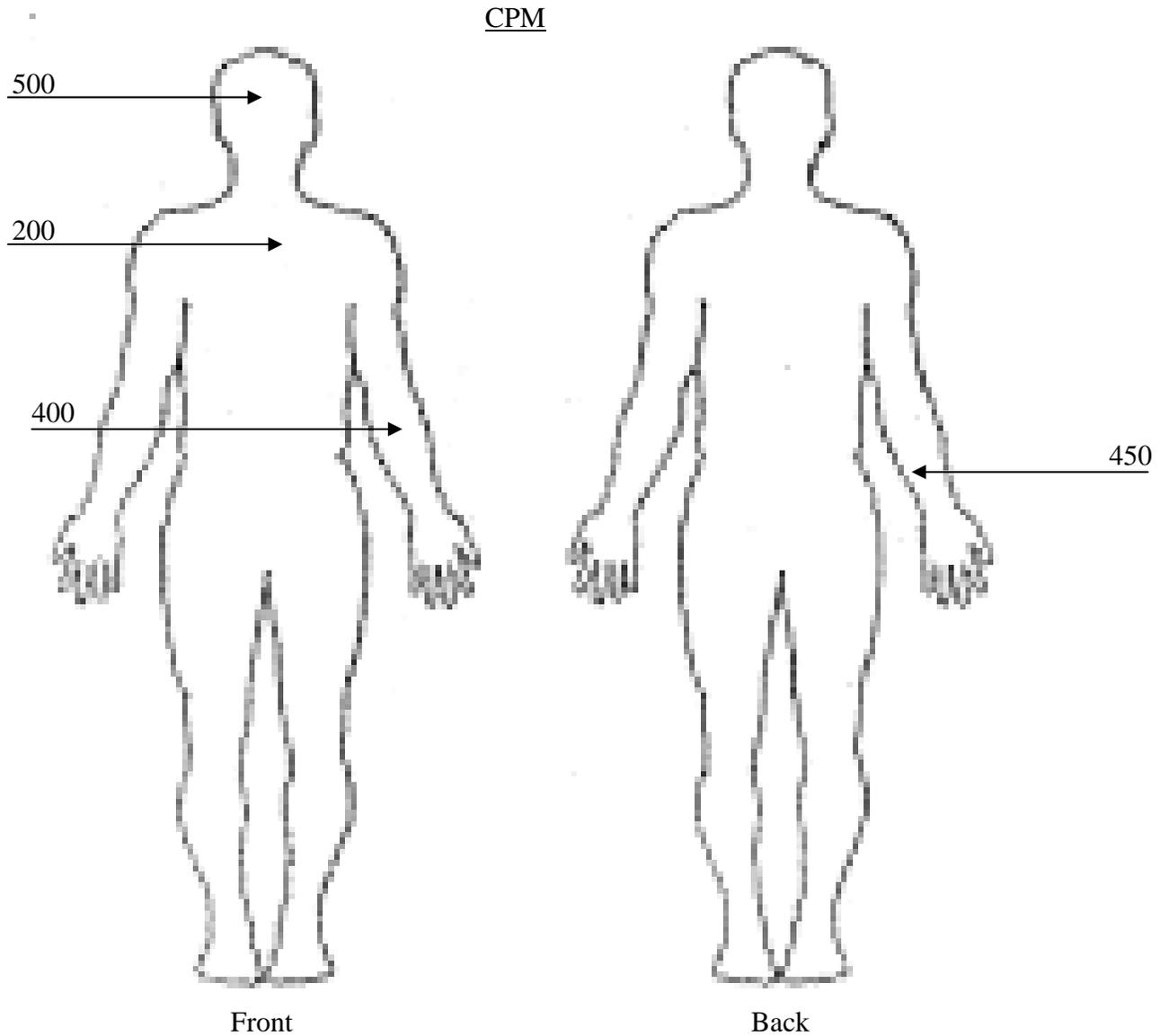
Figure 10.0-1, Patient's Contamination - With Clothing

8.1



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Figure 10.0-2, Patient's Skin Contamination



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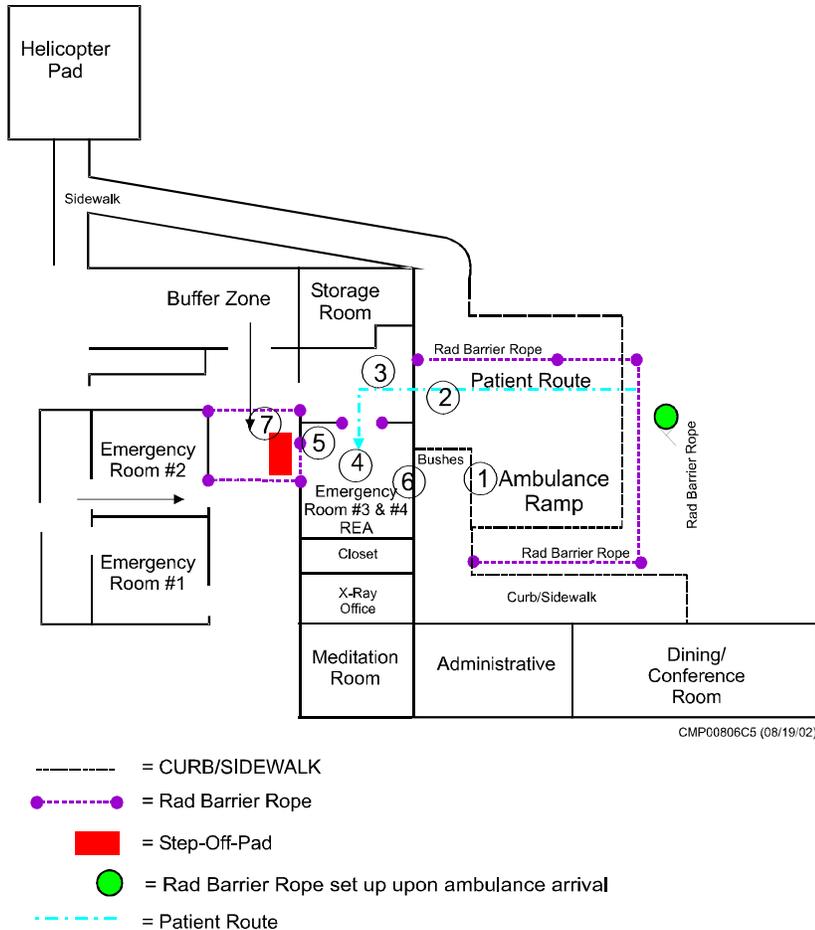
Figure 10.0-3, Patient's Skin Contamination After Decontamination

VICTIM CONDITION	RADIOLOGICAL DATA IN CPM	
Clothes Survey	Head	500
	Back of the right arm	1000
	Front of the right & left arms	1000
	Chest	800
Skin Survey	Head	500
	Back of the left arm	450
	Front of the left arm	400
	Chest	200
After first decontamination attempt at hospital	Face	As Read
	Back of the left arm	As Read
	Front of the left arm	400
	Chest	As Read
After Second decontamination attempt at hospital	All meter readings are as read	

NO DETECTABLE CONTAMINATION AFTER SECOND DECONTAMINATION ATTEMPT

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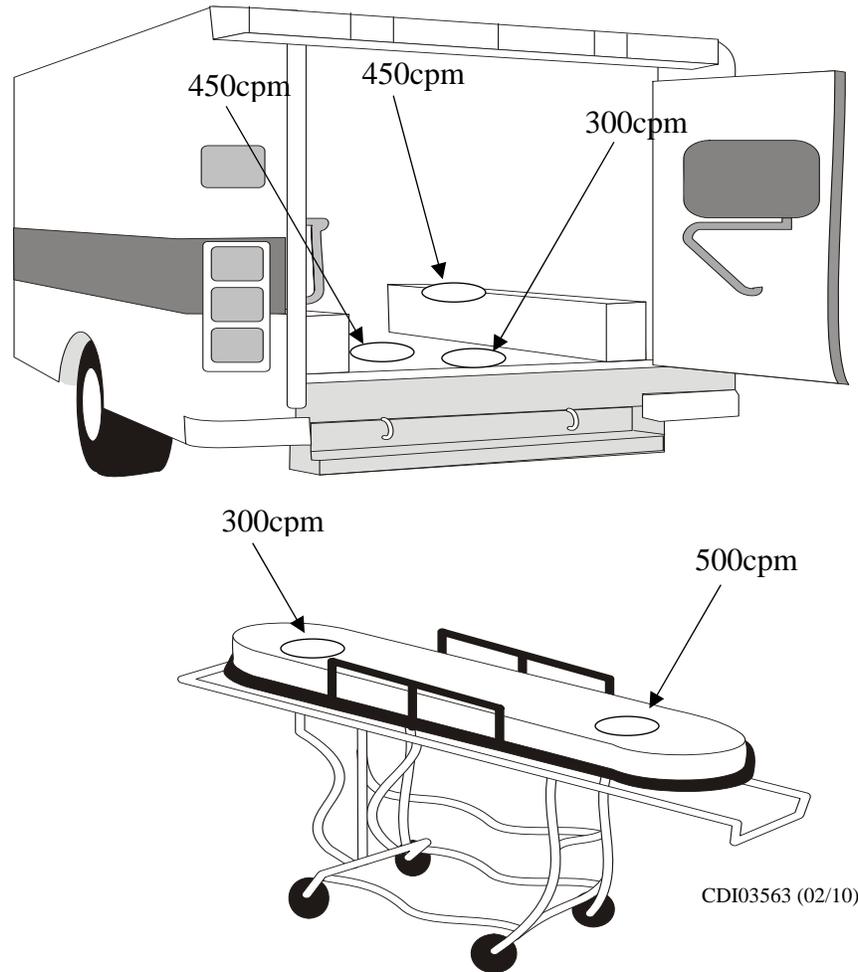
Figure 10.0-4, Palacios Community Medical Center Radiological Survey and Layout



Location	Activity CPM/100cm ²
1	As Read
2	As Read
3	As Read
4	400
5	200
6	250
7	As Read

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8.2 Figure 10.0-5, Matagorda County EMS Radiological Survey



AMBULANCE ATTENDANTS ARE FOUND TO HAVE NO CONTAMINATION.

NO DETECTABLE CONTAMINATION ON AMBULANCE AFTER ONE DECON ATTEMPT.

Discuss with the evaluator, how much monitoring and decontamination will be required to be demonstrated. The numbers are based on a direct frisk. This survey is assumed to have been completed after patient transfer.

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Table 10.0-1, Patient Performance Paths

Approx. Time	PATH A Treat for shock and injuries	PATH B Injuries treated, but is not treated for shock	PATH C Victim is not treated for shock or injuries
10:10 Site	Initial assessment – Disoriented, but somewhat responsive. Two inch laceration on the forehead, possible concussion. Wants to sleep.	Initial assessment – Disoriented, but somewhat responsive. Two inch laceration on the forehead, possible concussion. Wants to sleep..	Initial assessment – Disoriented, but somewhat responsive. Two inch laceration on the forehead, possible concussion. Wants to sleep.
10:20 Site	ABC’s completed. Pressure dressing applied to the laceration. Oxygen administered. Inline cervical spine subligation with application of cervical collar. Patient log-rolled to place on backboard; patient is awake but confused, slowly responding to some commands. Patient is warmed with a blanket.	Omission of oxygen & warming blanket - patient remains disoriented and is not responsive. Pressure dressing applied to the forehead.	No treatment. Patient becomes unresponsive.
10:40 Turnover	Patient is more alert, complaining of pain on forehead.	Patient is awake but groggy.	Patient remains unresponsive. Skin is cool and clammy.
10:50 Ambulance	Patient is stable, alert and oriented complaining of pain on forehead.	Patient is awake but groggy	
11:00 Ambulance	Patient calm; but complains of pain on forehead.	EMS personnel begin treating patient for shock.	
11:10 Turnover	Patient calm; but complains of pain on forehead.	Patient feels better, more alert.	Patient is stabilized.
11:15 Hospital	Patient calm, but complains of pain on forehead.	Patient is alert.	Patient is responsive and becoming alert.
11:30 Hospital	Patient complaining of pain during decontamination efforts.	Patient complaining of pain during decontamination efforts.	Patient complaining of pain during decontamination efforts.
11:45 Hospital	Patient complains of pain on forehead.	Patient complains of pain on forehead.	Patient complains of pain on forehead.

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Table 10.0-2, Patient Vital Signs

Approx. Time	PATH A Treat for shock and injuries	PATH B Injuries treated, but is not treated for shock	PATH C Victim is not treated for shock or injuries
10:10 Site GCS 13-14	RESP - 18 B/P - 138/78 PULSE - 100, Regular/Strong SKIN - Warm/Moist PUPILS - Equal/Reactive	Same as Path A.	Same as Path A.
10:20 Site	RESP - 17 B/P - 136/78 PULSE - 92, Regular/Strong SKIN - Warm/Moist PUPILS - Equal/Reactive	RESP - 22 B/P - 128/80 PULSE - 126, Regular/Strong SKIN - Warm/Moist PUPILS - Equal/Reactive	RESP - 24 B/P - 118/72 PULSE - 128, Regular/Strong SKIN - Warm/Moist PUPILS - Equal/Reactive
10:30 Site	RESP - 17 B/P - 128/76 PULSE - 80, Regular/Strong SKIN - Normal PUPILS - Equal/Reactive Distal pulse is present, capillary refill is immediate.	RESP - 28 B/P - 116/72 PULSE - 90, Regular/Strong SKIN - Warm/Moist PUPILS - Equal/Reactive	RESP - 29 B/P - 98/60 Pulse - 134, Regular SKIN - Cool/A little clammy PUPILS - Equal/Reactive
10:40 Turnover GCS 14	Same as above.	Same as above.	Same as above.
10:50 Ambulance	RESP - 17 B/P - 130/80 PULSE - 88, Regular/Strong SKIN - Normal PUPILS - Equal/Reactive	RESP - 24 B/P - 120/75 PULSE - 90, Regular SKIN - Warm Moist PUPILS - Equal/Reactive	RESP - 32 B/P - 90/55 PULSE - 150, Weak SKIN - Cool/Clammy PUPILS - Equal/Reactive
11:10 Turnover	RESP - 17 B/P - 130/80 PULSE - 88, Regular/Strong SKIN - Normal PUPILS - Equal/Reactive	RESP - 24 B/P - 120/75 PULSE - 90, Regular SKIN - Warm/Moist PUPILS - Equal/Reactive	RESP - 32 B/P - 90/55 PULSE - 140, Weak SKIN - Cool/Clammy PUPILS - Equal/Reactive
11:15 Hospital	RESP - 16 B/P - 125/90 PULSE - 95, Regular/Strong	RESP - 24 B/P - 125/70 PULSE - 90, Regular SKIN - Warm/Moist	RESP - 26 B/P - 100/60 PULSE - 120, Regular SKIN - Cool/Clammy

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GCS 15	SKIN - Normal PUPILS - Equal/Reactive	PUPILS – Equal/Reactive	PUPILS- Equal/Reactive
11:30 Hospital	RESP – 14 B/P - 120/80 PULSE – 90, Regular/Strong SKIN - Normal PUPILS - Equal/Reactive	RESP - 18 B/P - 120/80 PULSE - 90, Regular/Strong SKIN – Normal PUPILS - Equal/Reactive	RESP - 20 B/P – 120/80 PULSE - 90, Regular SKIN - Cool A little clammy PUPILS – Equal/Reactive
11:45 (Hospital)	Same as above.	Same as Path A.	Same as Path A.

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MESSAGE NO: 1

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THIS IS A DRILL

To: All Participants and Controllers
From: Controller
Location: All Participants
Time: 10:00

Initial conditions establish that the weather is as found on the day of the Exercise, however, is it extremely foggy in the area surrounding Houston and on the coast. Unit 1 is in a refueling outage and Unit 2 is as found.

(If inclement weather occurs move onsite portion of the exercise to the NSC under the front canopy)

**2010 MS-1 MEDICAL EXERCISE
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MESSAGE NO: 2

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THIS IS A DRILL

To: Onsite Players

From: Onsite Controllers

Location: All

Time: 10:05

Controller Note: Communications with offsite support will be made to Matagorda County Emergency Medical Services.

A call has been made to the Unit 1 Control Room indicating a plant employee has been injured. Control Room staff in Unit 1 should implement procedure OPOP04-ZO-0004, Personnel Emergencies. STP medical responders should be called out to assess the scene and offer care to the patient.

When they get to the scene, they find an injured female who has fallen into the spent fuel pool and when extracted by co-workers, is found to have hit her head. She has a bleeding gash on her eye and forehead and is unresponsive, with a possible concussion. The STP EMT(s) should note that the injuries are severe enough to warrant transport to an offsite medical facility.

In the meantime, the patient will be packaged and transported out of the protected area for pickup.

A player/controller briefing should occur in the old Emergency Operations Facility with the following:

Radiation Protection (supervisor, players, controller)

EMTs

Onsite controllers

Victim

Patient will be moved to the usual site transfer area (front of the Nuclear Training Facility), where the turnover to Matagorda County EMS will be made.

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MESSAGE NO: 3

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THIS IS A DRILL

To: Matagorda County Emergency Medical Services
From: Control Room Phone Cell Controller
Location: Phone Cell
Time: 010:10

“THIS IS A DRILL. This is STP Unit One Control Room. We have a female who fell about 3 feet into water. She has suffered injuries and requires immediate transfer to an offsite medical center. She is probably contaminated and has a possible concussion.” If asked, tell them she has a 2 inch eye and forehead laceration. “THIS IS A DRILL.”

Matagorda County Emergency Medical Services - (979) 323-9020 (Dispatcher)

Matagorda Regional Medical Center Emergency Department – (979) 241-3315

Palacios Community Medical Center (361) 972-2511 - (Operator)

Controller note: Provide the Dispatcher with your phone cell callback number to prevent actual contact with the Units.

After contacting Matagorda Regional Medical Center (MRMC), MRMC should determine to re-direct the patient to the Palacios Community Medical Center, due to MRMC’s emergency department’s ongoing response to handling a mass casualty event (bleachers at the high school collapsed during a pep rally.)

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MESSAGE NO: 4

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THIS IS A DRILL

To: Matagorda Regional Medical Center
From: Matagorda Regional Medical Center Controller
Location: Matagorda Regional Medical Center
Time: 010:13

The Matagorda Regional Medical Center Controller inserts this message when the Matagorda County EMS calls to let the hospital know that potentially contaminated injured patient is in route. Below is the reason for the re-direct.

Palacios Community Medical Center (361) 972-2511

Matagorda Regional Medical Center redirects the Matagorda County EMS crew to the Palacios Community Medical Center due to MRMC's emergency department's ongoing response to handling a mass casualty event (bleachers at the high school collapsed during a pep rally.)

**2010 MS-1 MEDICAL EXERCISE
PALACIOS COMMUNITY MEDICAL CENTER**

MESSAGE NO: 5

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THIS IS A DRILL

To: Palacios Community Medical Center
From: Matagorda County Emergency Medical Services
Location: En-route
Time: ~ 10:45 (As patient information is known)

When the Matagorda County Emergency Medical Services (ambulance) contact the hospital, provide them with known patient information as listed below.

+ 10	Patient Information as provided by the EMT at the scene. RESP: 18 B/P: 138/78 Pulse: 100, Regular/Strong Skin: Warm/Moist Pupils: Equal/Reactive Symptoms/injuries: falling and hitting head (e.g. concussion, bleeding laceration on face, etc.)
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**2010 MS-1 MEDICAL EXERCISE
PALACIOS COMMUNITY MEDICAL CENTER**

MESSAGE NO: 6

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THIS IS A DRILL

To: All Players
From: Lead Controllers
Location: All Facilities
Time: When medical emergency activities are concluded

CONTROLLER NOTE

Upon completion of medical emergency activities in your area/facility, read the following message.

The medical Exercise is now terminated.

Please organize the documentation generated by the exercise and fill out a player comment sheet.

Ensure your name is recorded on a player attendance sheet.

Restore the facilities to their original condition.

There will be a player critique beginning in the Hyett Conference Room at _____ (~ 20 minutes after the conclusion of the Exercise.)

Have hospital emergency department contact Matagorda County EMS and tell them where and when the critique will begin.

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9.0 Controller and Evaluator Organization and Assignments

CONTROLLERS

LOCATION	NAME
Lead Controller	Lurinda Barton
Matagorda County EMS / Radiation Protection Ambulance	Scott Korenek
Radiation Protection-Hospital	Steve Horak
Hospital-Medical Response	Jessica Gann
Hospital Buffer Zone	Joe Enoch
Accident Scene – Security / EMT Response	Steve Johnson
Unit 1 Control Room	Max Keys

**2010 MS-1 MEDICAL EXERCISE
PALACIOS COMMUNITY MEDICAL CENTER**

EVALUATION AREA ASSIGNMENTS

<i>Objective</i>	<i>Location</i>	<i>Controller</i>
<i>1.e.1: Equipment and Dosimetry</i>	MCEMS	Korenek
	PCMC	Enoch
		Horak
<i>3.a.1:Emergency Worker Exposure Control</i>	MCEMS	Korenek
	PCMC	Enoch
		Horak
<i>6.d.1: Transportation & Treatment</i>	MCEMS	Korenek
	PCMC	Gann
		Enoch
		Horak

MCEMS = Matagorda County EMS
PCMC = Palacios Community Medical Center

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