

Three Mile Island Nuclear Generating
Station/Carlisle Regional Medical
Center After Action Report/
Improvement Plan

Drill Date – May 24, 2016

Radiological Emergency Preparedness (REP) Program

Published August 23, 2016



FEMA

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After Action Report/Improvement Plan

Published August 23, 2015

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EXECUTIVE SUMMARY

On May 24, 2016 a Medical Services (MS-1) Drill was evaluated for the 10-mile Plume Exposure Pathway, Emergency Planning Zone (EPZ) around the Three Mile Island Nuclear Generating Station (TMI) by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region III. The most recent prior MS-1 drill for this site was conducted on May 24, 2011.

The purpose of the Three Mile Island Nuclear Generating Station MS-1 Drill was to assess the State and local offsite response organizations preparedness in responding to a radiological medical emergency. The drill was held in accordance with FEMA's policies and guidance concerning the exercise of State and local Radiological Emergency Response Plans (RERP) and procedures.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania, Cumberland County Emergency Management Agency, Carlisle Regional Medicals Center and the Cumberland Goodwill (CGW) Emergency Medical Services (EMS) who were evaluated during this exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility as volunteers providing vital emergency services twenty-four (24) hours a day to the communities of which they live. Cooperation and teamwork of all the participants was observed during this drill.

This report contains the final evaluation of the MS-1 drill. The Commonwealth of Pennsylvania and local organizations demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Level 1 or Level 2 Findings or Planning issues as a result of this exercise.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Three Mile Island Nuclear Generating Station 2016 Medical Services Drill

Type of Exercise

Medical Services Drill

Exercise Date

May 24, 2016

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radioactive Contaminated/Injured Person

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Three Mile Island Nuclear Generating Station 2016 Medical Services Drill:

State Jurisdictions

Pennsylvania Emergency Management Agency

Risk Jurisdictions

Cumberland County Emergency Management Agency

Healthcare Organizations

Carlisle Regional Medical Center

Cumberland Goodwill Emergency Medical Services (EMS)

Private Sector

Exelon Nuclear Corporation

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site nuclear planning and response. FEMA's activities were conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Generating Station accident in March 1979.

44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees. FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- A. Taking the lead in offsite emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by State and local governments;
- B. Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- C. Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated December 7, 2015 (45 FR 82715, December 15, 1980); and
- D. Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Commerce,
 - U.S. Nuclear Regulatory Commission,
 - U.S. Environmental Protection Agency,
 - U.S. Department of Energy,
 - U.S. Department of Health and Human Services,
 - U.S. Department of Transportation,
 - U.S. Department of Agriculture,
 - U.S. Department of the Interior, and
 - U.S. Food and Drug Administration.

Representatives of these agencies serve on the Region III Regional Assistance Committee (RAC), which is Chaired by FEMA. A REP Medical Services drill was conducted May 24, 2016, to assess the capabilities of State and local emergency preparedness organizations in implementing their

RERPs and procedures to protect the public health and safety during a radiological emergency involving Three Mile Island Nuclear Generating Station. The purpose of this exercise report is to present the drill results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency involving a contaminated injured individual.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region III Regional Assistance Committee (RAC) Chairperson and approved by FEMA Headquarters. These reports are provided to the NRC and participating States. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency response capabilities.

The criteria utilized in the FEMA evaluation process are contained in the following:

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- Radiological Emergency Preparedness Program Manual, January 2016

Section 1 of this report, entitled "Exercise Overview", presents the "Exercise Planning Team" and the "Participating Organizations".

Section 2 of this report, entitled "Exercise Design Summary", and includes the "Purpose and Design", "Exercise Objectives, Capabilities, and Activities", and the "Scenario Summary".

Section 3 of this report, entitled "Analysis of Capabilities", presents detailed "Drill Evaluation and Results" information on the demonstration for each jurisdiction or functional entity evaluated in a jurisdiction-based, issue-only format (Criteria Evaluation Summaries).

Section 4, of this report, entitled "Conclusion", is a description of the Region's overall assessment of the capabilities of the participating organizations. It also presents information on planning issues if any were identified.

2.2 Emergency Planning Zone Description:

The TMI Nuclear Generating Station (40° 9' 12" N/76° 43' 25" W) is a nuclear power plant operated by Exelon Nuclear. The site consists of two pressurized water-type units. Unit One is an 819 Megawatt reactor, and Unit Two is a 906 Megawatt reactor. Unit 1 received its license in June 1974 and began commercial operation in September 1974. Unit 2 began commercial operation in February 1978; it was damaged in March 1979 and has been shut down and placed in a monitored storage mode.

The minimum exclusion distance specified for the TMI plant is 2,000 feet. Included within the 2,000-foot radius are a portion of Three Mile Island, a portion of Shelly Island, and a portion of the Susquehanna River. Exelon Nuclear owns all the land within the exclusion area.

The TMI plant is located in south-central Pennsylvania in Londonderry Township, Dauphin County. The site is part of an 814-acre tract consisting of several adjacent islands in the

Susquehanna River. The power plant is located on Three Mile Island, which is one of the largest islands of the group. The site is at an elevation of 300 feet above mean sea level (msl), relatively flat, and wooded on the periphery and the southern portion. Of the 470 acres that make up the island, the plant occupies approximately 200 acres in the northern portion.

Soils on the island are of the Duncannon-Chavies-Tioga Association, which is comprised of deposits of alluvial sand, silt, and clay. Underlying bedrock is red sandstone and shale. The normal pool elevation of the Susquehanna River in this area is 277 feet above msl. Hills on both sides of the river in this vicinity rise to elevations of over 500 feet. The plant grade is 300 feet above msl.

An access bridge for plant personnel connects State Route 441 with the north end of the island. A wooden bridge connects the southern portion of the island with State Route 441. Norfolk Southern rail lines are located on both sides of the river; the closest is a one-track line adjacent and parallel to Route 441 on the east shore.

The area within 10 miles of the TMI Nuclear Generating Station is located in south-central Pennsylvania, and includes portions of Cumberland, Dauphin, Lancaster, Lebanon, and York counties. The site is surrounded mostly by farmland within a 10-mile radius. The nearest community is Goldsboro Borough, on the west shore of the Susquehanna River, 1 mile from the plant. The nearest major population center with more than 25,000 people is Harrisburg (Population 53,624), which lies just over 10 miles to the north.

Twenty-three industrial firms are located within a 5-mile radius; they employ approximately 2,400 people. The Harrisburg International Airport is located 2 miles northwest of the TMI plant. An NRC estimate of aircraft risk to TMI Units One and Two indicates an acceptably low risk for either unit, provided fewer than 2,400 operations per year are by aircraft in excess of 200,000 pounds. The NRC requires Exelon to continue periodic monitoring and reporting of airport usage and will reevaluate the adequacy of plant protection if aircraft traffic is reliably projected to exceed 2,400 operations per year. The major railroads operating in the Emergency Planning Zone (EPZ) include Amtrak, Blue Mountain and Ridge, Chessie System, Conrail, and the Maryland and Pennsylvania Railroad.

The climate of the five-county risk EPZ is mild and humid. Weather is variable because the prevailing westerly winds bring both high- and low-pressure systems through the area every few days. Average annual precipitation for the southern portion of the EPZ is about 38 inches and the average annual temperature is 52° F.

On the basis of the 2010 census, the total population of the 10-mile EPZ is 226,160. There are 97 sirens used to provide coverage of the plume exposure pathway EPZ. Each county operates its respective sirens.

2.3 Exercise Objectives, Capabilities and Activities

The Three Mile Island Nuclear Generating Station 2016 Medical Services Drill evaluated by the Federal Emergency Management Agency was designed to demonstrate the capabilities of State and local emergency management agencies to technically assess the extent of the radiological impact from a contaminated injured individual, including transport and receipt at a hospital. The

demonstration included the ability to:

- A. Demonstrate the ability to respond to a radiation medical emergency following Cumberland County Emergency Management Agency, Carlisle Regional Medical Center and Cumberland Goodwill EMS procedures.
- B. Demonstrate timely and accurate communications between the hospital and offsite response agencies. (Telephones will be used in lieu of radios whenever possible to limit the potential misinterpretation of the exercise as an actual event.)
- C. Demonstrate correct priorities and appropriate techniques in EMS, transportation of patients and pre-hospital and hospital emergency care of radioactively contaminated patients.
- D. Demonstrate inter-agency cooperation between the Ambulance Service / EMS and the hospital.

2.4 Scenario Summary

The exercise scenario for this Medical Services Drill consisted of simulated notifications of escalating emergency classification levels at the Three Mile Island Nuclear Generating Station from Site Area Emergency (SAE) to General Emergency (GE). Subsequent to a release of radiological material the plant declared a General Emergency.

During an evacuation of the Three Mile Island Emergency Planning Zone an auto accident occurs on the outskirts of Cumberland County. The patient was the driver and sole occupant of the vehicle. He was not wearing restraints when he struck a vehicle from behind at a red light. When EMS arrived on scene they found the patient to be conscious, oriented, and out of the vehicle walking. There was an open wound to the patient's forehead after striking the rear view mirror. Patient was also complaining of pain in his right knee with a corresponding red spot / bruising.

Area responders had been informed of the evacuation so when the EMS crew made contact with the patient they immediately asked if he was evacuating the 10-mile EPZ. When he answered that he was evacuating the EMS Crew immediately took appropriate radiological precautions with him and transported him to the closest MS-1 hospital.

Upon arrival at Carlisle Regional Medical Center, the medical treatment team and a radiation safety representative met the Emergency Medical Services (EMS) team at the exterior entrance to the Radiological Emergency Area (REA). The hospital's medical team assessed the patient's condition and surveyed the victim for radiological contamination. Initial contamination levels included: 800 counts per minute (cpm), on the forehead and 3,600 counts per minute (cpm) on the left hand.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the May 24, 2016 Three Mile Island Nuclear Generating Station Medical Services (MS-1) Drill. The drill was conducted to demonstrate the ability of the Offsite Response Organizations to respond to a potentially contaminated injured person associated with the Three Mile Island Nuclear Generating Station.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the appropriate Exercise Evaluation Area Criteria contained in the REP Program Manual. Detailed information on the exercise evaluation area criteria and the Extent-of-Play agreement are found in Appendix C.

The drill was conducted and evaluated in accordance with the Radiological Emergency Preparedness Program Manual and NUREG 0654. The Evaluation Criteria included:

- 1.e. Equipment and Supplies to Support Operations
- 3.a. Implementation of emergency worker exposure control
- 6.d. Transportation and Treatment of Contaminated Injured Individuals

The drill successfully demonstrated the response capabilities of the participants, except as may be noted in Section 3.2, Summary Results of Exercise Evaluation, and Section 3.3, Criteria Evaluation Summaries.

3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.1, on the following pages, presents the status of the exercise evaluation area criteria from the REP Program Manual that was scheduled for demonstration during this drill by all participating jurisdictions and functional entities. Drill evaluation area criteria are listed by number and the demonstration status of the criteria is indicated by the use of the following letters:

(D) Demonstrated Strength: an observed action, behavior, procedure, and/or practice that is worthy of special notice and positive recognition, Note: this is already a common practice that many Regions employ when identifying demonstrated strengths.

(L1) Level 1 Finding: an observed or identified inadequacy or organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant (NPP).

(L2) Level 2 Finding: an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.

(P) Plan Issue: an observed or identified inadequacy of organizational in the offsite response organizations' (OROs) emergency plan/implementation procedures, rather than that of the ORO's performance.

(N) Not Demonstrated: term applied to the status of a REP exercise Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the extent-of-play agreement or at the two -year or eight-year interval required in the FEMA REP Program Manual.

(M) Met: status of a REP exercise Evaluation Area Criterion indicating that the participating ORO demonstrated all demonstration criteria for the Evaluation Area Criterion to the level required in the extent of-of-play agreement with no Findings assessed in the current exercise and no unresolved prior Findings.

Table 3.1 – Summary of Drill/Exercise Evaluation

Date: 2016-03-24 Site: Three Mile Island Nuclear Generating Station		CRMC	CGW
(M) Met, (1) Level 1 Finding, (2) Level 2 Finding, (P) Planning Issue			
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications	1d1		
Equipment and Supplies to Support Operations	1e1	M	M
Protective Action Decision Making			
Emergency Worker Exposure Control	2a1		
Accident Assessment and Plans for the Emergency Event	2b1		
PAD decision-making process and coordination for the General Public	2b2		
PADs for disabilities & access/functional needs people	2c1		
Radiological Assessment & Decision making for the Ingestion Pathway	2e1		
Radiological Assessment & Decision making for Relocation/Reentry/Return	2d1		
Protective Action Implementation			
Implementation of Emergency Worker Exposure Control	3a1	M	M
Implementation of KI PAD for Institutionalized Individuals/Public	3b2		
Implementation of PADs for disabilities & access/functional needs people	3c1		
Implementation of PADS for Schools	3c2		
Implementation of Traffic and Access Control	3d1		
Impediments to Evacuation	3d2		
Implementation of Relocation/Reentry/Return Decisions	3f1		
Field Measurements and Analysis			
RESERVED	4a1		
Field Team Management	4a2		
Plume Phase Field Measurement, Handling, & Analyses	4a3		
Post Plume Phase Field Measurements & Sampling	4b1		
Emergency Notification and Public Information			
Activation of the Prompt Alert & Notification System (ANS)	5a1		
RESERVED	5a2		
Activation of the Back-up ANS	5a3		
Activation of the Exception Area ANS	5a4		
Emergency Information & Instructions to the Public/Media	5b1		
Support Operations/Facilities			
Monitoring, Decontamination, & Registration of Evacuees	6a1		
Monitoring/Decontamination of Emergency Workers and Equipment	6b1		
Temporary Care of Evacuees	6c1		
Transportation/Treatment of Contaminated Injured Individuals	6d1	M	M

3.3 Criteria Evaluation Summaries

3.3.1 Risk Jurisdictions

3.3.1.1 Cumberland County, Carlisle Regional Medical Center

In summary, the status of DHS/FEMA criteria for the State jurisdiction is as follows:

- a. MET: 1.e.1; 3.a.1; 6.d.1
- b. LEVEL 1 FINDINGS: NONE
- c. LEVEL 2 FINDINGS: NONE
- d. PLAN ISSUES: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

3.3.1.2 Cumberland County, Cumberland Goodwill EMS

In summary, the status of DHS/FEMA criteria for the State jurisdiction is as follows:

- a. MET: 1.e.1; 3.a.1; 6.d.1
- b. LEVEL 1 FINDINGS: NONE
- c. LEVEL 2 FINDINGS: NONE
- d. PLAN ISSUES: NONE
- e. PRIOR ISSUES – RESOLVED: NONE
- f. PRIOR ISSUES – UNRESOLVED: NONE

SECTION 4: CONCLUSION

The Commonwealth of Pennsylvania and local jurisdictions, except where noted in this report demonstrated knowledge of their Radiological Emergency Response Plans (RERP) and procedures were adequately implemented during the Three Mile Island Nuclear Generating Station, Medical Services Drill evaluated on May 24, 2016.

Two (2) Federal Emergency Management Agency (FEMA) evaluators provided analyses of six evaluation criteria. These analyses resulted in a determination of no Findings, no new Plan Issues, and no unresolved Plan Issues.

The Cumberland Goodwill Emergency Medical Service successfully demonstrated that necessary equipment and supplies were available to support the treatment of an injured/contaminated victim. EMS personnel prioritized life-saving medical practices over contamination concerns, implemented protective measures through the use of Personal Protective Equipment (PPE), regular glove changes, and control of cross contamination. Appropriate patient assessments were demonstrated as well as regular and ongoing communications with Carlisle Regional Medical Center.

The Carlisle Regional Medical Center successfully demonstrated the mobilization of staff, staffing assignments, issue of dosimetry and monitoring equipment, and effective use of Personal Protective Equipment (PPE) during the exercise. The hospital staff effectively responded to communications from the Cumberland Goodwill Emergency Medical Service, initiated the set-up and management of a Radiation Emergency Area (REA), and accepted and successfully treated an injured/contaminated victim while administering life-threatening medical attention over contamination concerns. In addition, the medical facility provided security control of the facility including the drop off bay for the patient and overall protective measures for contamination control and prevention of cross contamination.

Based on the results of the exercise and a review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate (meet the planning and preparedness standards of NUREG-0654/FEMA-REP-1, Revision 1, November 1980, as referenced in 44 CFR 350.5) and there is reasonable assurance they can be implemented, as demonstrated during this exercise.

An After Action Implementation Plan (IP) will not be developed as part of this report.

APPENDIX A: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leader for the Three Mile Island Nuclear Generating Station 2016 Medical Services (MS-1) Exercise evaluated on May 24, 2016. The following constitutes the managing staff for the Exercise Evaluation:

- Thomas Scardino, DHS/ FEMA, Regional Assistance Committee (RAC) Chairman
- Joseph Suders, DHS/ FEMA, Technological Hazards Program Specialist, Lead Evaluator
- Barton Freeman, DHS/ FEMA, Technical Hazards Program Specialist, Evaluator

DATE: 5/24/2016, SITE: Three Mile Island Nuclear Generating Station

LOCATION	EVALUATOR	AGENCY
Cumberland County, Carlisle Regional Medical Center	*Joseph Suders	FEMA RIII
Cumberland County, Cumberland Goodwill EMS	Barton Freeman	FEMA RIII
* Team Leader		

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
CRMC	Carlisle Regional Medical Center
CGW	Cumberland Goodwill Emergency Medical Service
DHS	Department of Homeland Security
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOP	Extent Of Play
EPZ	Emergency Planning Zone
FASP	First Aid and Safety Patrol EMS
FEMA	Federal Emergency Management Agency
GE	General Emergency
IP	Improvement Plan
CCEMA	Cumberland County Emergency Management Agency
MSL	Mean Sea Level
MS-1	Medical Services
NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
ORO	Offsite Response Organization
PEMA	Pennsylvania Emergency Management Agency
RAC	Regional Assistance Committee
PPE	Personal Protection Equipment
SAE	Site Area Emergency
TMI	Three Mile Island Nuclear Generating Station
REA	Radiation Emergency Area
REP	Radiological Emergency Preparedness

APPENDIX C: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the Three Mile Island Nuclear Generating Station Medical Services Drill and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology.

The Exercise Plan was originally drafted by the Pennsylvania Emergency Management Agency (PEMA) and published by the Federal Emergency Management Agency as an independent document and is annexed here. The Three Mile Island Nuclear Generating Station Extent-of-Play was negotiated and agreed upon by FEMA Region III, PEMA, and the offices of emergency management of the Risk and Support Jurisdictions. It is included as an Appendix of the Exercise Plan.



**CARLISLE REGIONAL MEDICAL
CENTER
Medical Services Exercise (MS-1)**

May 24, 2016

EXERCISE SUMMARY

The purpose of this exercise is to demonstrate the capabilities of the emergency response organizations in Cumberland County in handling contaminated/injured persons and to satisfy both the hospital's requirement for an emergency/drill and the "Medical Services Guidance Memorandum MS-1".

PARTICIPANTS

Carlisle Regional Medical Center
Cumberland Goodwill EMS
Cumberland County Emergency Management Agency

CONTROLLERS

Pennsylvania Emergency Management Agency
Cumberland County Emergency Management Agency
EXELON

EVALUATORS

Federal Emergency Management Agency

OBSERVERS

Cumberland County Emergency Management Agency
Pennsylvania Emergency Management Agency
Exelon Nuclear Corporation

SCHEDULE OF EVENTS

Carlisle Regional Medical Center

- 08:00 AM Exercise begins.
- 08:05 AM Hospital is notified that the emergency at Three Mile Island (TMI) has escalated to a **Site Area Emergency**.
- 08:15 AM The hospital is notified that the emergency at TMI has escalated to a **General Emergency** and that the general population are requested to evacuate.
- 08:35 AM Hospital is notified that there is a victim injured and potentially contaminated.
- 09:05 AM The victim arrives at the hospital.
- 10:00 AM After the patient is stabilized and decontaminated; clean-up of the area begins (explained). Exercise ends.
- 10:15 AM Critique (Hotwash) at hospital immediately following the exercise.

Cumberland Goodwill EMS

- 08:00 AM Exercise begins.
- 08:05 AM Ambulance is notified that the emergency at Three Mile Island (TMI) has escalated to a **Site Area Emergency**.
- 08:15 AM Ambulance is notified that the emergency TMI has escalated to a **General Emergency** and that the general population are requested to evacuate.
- 08:25 AM An ambulance is requested to report to the accident site to pick up an injured and potentially contaminated individual.
(Simulated - Staging will be at the Cumberland County Emergency Management Agency Office - 1 Public Safety Drive, Carlisle, PA 17013)
(Controller Note: Ambulance to notify the hospital of potentially contaminated injured patient by 08:35. See Controller Prompts)
- 08:55 AM Ambulance leaves for hospital.
- 09:05 AM Ambulance arrives at the hospital.
- 09:20 AM Exercise ends for ambulance crew.
- NOTE: Ambulance will respond without siren and lights.**
- 10:15 AM Critique (Hotwash) at hospital immediately following the exercise.

SCENARIO

08:05 AM Ambulance and the hospital are notified that an emergency at TMI has escalated to a **Site Area Emergency**.

08:15 AM Ambulance and hospital are notified that the TMI incident has escalated to **General Emergency** and that the general population are requested to evacuate.

08:25 AM Ambulance is requested to report to the monitoring decontamination center accident scene to pick up an injured and potentially contaminated victim.
(Simulated - Staging will be at the Cumberland County Emergency Management Agency Office - 1 Public Safety Drive, Carlisle, PA 17013)

08:35 AM The hospital is notified that an injured, potentially contaminated victim will be brought in for treatment. *(Controller Note: Ambulance to notify the hospital of potentially contaminated injured patient by 08:35. See Controller Prompts)*

08:55 AM The ambulance leaves for the hospital.

09:05 AM The ambulance arrives at the hospital. Hospital Staff initiates control of ambulance and patient.

09:10 AM Hospital staff takes control of the contaminated/injured person. Ambulance and crew are monitored before being released.

09:20 AM Exercise ends for ambulance crew

10:00 AM After the patient is stabilized and decontaminated; clean-up of the area begins (explained)

10:15 AM Exercise ends followed by a critique (Hotwash) at the hospital.

OBJECTIVES

- A. Demonstrate the ability to respond to a radiation medical emergency following Cumberland County Emergency Management Agency, Cumberland Goodwill EMS and Carlisle Regional Medical Center procedures.
- B. Demonstrate timely and accurate communications between the hospital and offsite response agencies. (Telephones will be used in lieu of radios whenever possible to limit the potential misinterpretation of the exercise as an actual event.)

- C. Demonstrate correct priorities and appropriate techniques in EMS, transportation of patients and pre-hospital and hospital emergency care of radioactively contaminated patients.
- D. Demonstrate inter-agency cooperation between the Ambulance Service / EMS and the hospital.

CONTROLLER PROMPTS

- 08:05 AM The county controller notifies the ambulance and the hospital that the plant has declared a **Site Area Emergency**. Instruct staff to prepare for possible contaminated/injured victim.
- 08:15 AM The county controller notifies the ambulance and the hospital that the plant has declared a **General Emergency** and that the general population are requested to evacuate.
- 08:25 AM The county controller notifies the ambulance to pick up a contaminated/injured victim. (*Simulated – staged at the Cumberland County Emergency Management Agency Office - 1 Public Safety Drive, Carlisle, PA 17013*)
- 08:35 AM The county controller ensures that EMS notifies the Hospital that a potentially contaminated injured victim is being brought in. The nature of the injuries and the extent of contamination is unknown at this time.
- 08:35 AM The ambulance notifies the hospital that a contaminated/injured victim is being brought in. The nature of the injuries and the extent of contamination is unknown at this time. (**Cumberland Goodwill EMS**)
- 08:55 AM The county controller release the ambulance to leave for the hospital at this time.

Controller cautions the driver not to use emergency lights or sirens.

All communications should be precede and conclude with “THIS IS AN EXERCISE”

CONTROLLER NOTE: If the ambulance crew does not have monitoring equipment, the patient should be treated as **potentially contaminated** and injuries communicated to the crew as indicated in the attachments. During hospital monitoring of the victim, inform the monitor of the injuries and contamination levels as indicated by the attachments.

CONTROLLER ASSIGNMENTS

Communications
All other

Cumberland County
PEMA & EXELON

Begin and end all communications with
"THIS IS AN EXERCISE"

ATTACHMENT 1

INJURED PERSON

Situation: During an evacuation of the Three Mile Island Emergency Planning Zone an auto accident occurs on the outskirts of Carlisle. The patient was the driver and sole occupant of the vehicle. He was not wearing restraints when he struck a vehicle from behind at a red light. When EMS arrives on scene they find the patient to be conscious, oriented, and out of the vehicle walking. There is an open wound to the patient's forehead after striking the rear view mirror. Patient is also complaining of pain in his right knee with a corresponding red spot / bruising.

Area responders had been informed of the evacuation so when the EMS crew made contact with the patient they immediately asked if he was evacuating the 10 mile EPZ. When he answered that he was evacuating the EMS Crew should immediately take appropriate radiological precautions with him and transported him to the closest MS-1 hospital.

Patient should rub forehead with left hand several times in presence of EMS.

Injuries: Abrasion to forehead and bruising / pain in the right knee

Contamination: Initial readings at the hospital are indicated in counts per minute (cpm) below:

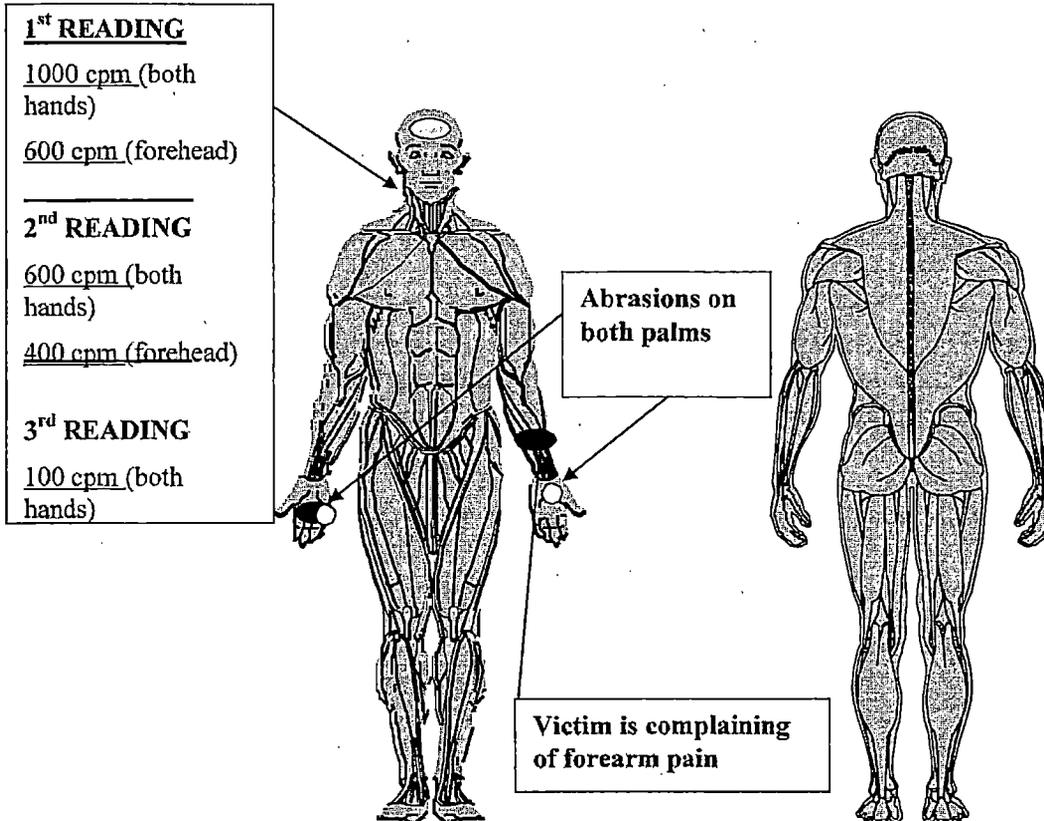
- 1) Abrasion to Forehead - (800 cpm) Initial
- 2) Left Hand - (3,600 cpm) Initial

Blood Pressure: 136/78
Pulse: 90
Breathing: 18
Temperature: Normal
Nausea: No
Vision: Clear, eyes equal and reactive (PEARLA)
No Known Allergies.

Complaint of pain on forehead and right knee. Patient will indicate pain upon palpation. Upon inspection, medical providers will see an abrasion to the forehead and a developing bruise in the right knee. Patient has been walking with pain and assistance.

Patient may provide appropriate responses to all other queries

ATTACHMENT 2



Patient complaining of pain in Right Knee and Forehead. If X-rays are taken, the hospital will not find any evidence of a fracture. Bleeding at the abrasion was self-controlled before EMS arrival.

Communications

Radio
Telephone
Pagers
Call back (verification)
Relay and accuracy of patient information
Inter staff communications

Contamination Control

Glove changes
Control of run off & Cross Contamination
Control of contaminated waste
Remove blankets and backboard from gurney
Decontamination of victim/staff
Set up of REA

Patient Care

Life threatening injury takes precedence over contamination
Treatment of injury

Patient reassurance

Documentation

X-Rays

Swabbing i.e. mouth, eyes, nose, collection of dressings, blood, urine, etc. (evidence and lab)

Protective clothing

Seal openings gloves, boots, use face shields, and cover exposed skin

Double glove (Glove Changes)

Decon posters and (Exiting procedures from the REA – Disrobing)

Equipment & Supplies

Survey Meters (calibrated)
Dosimeters – DRDs (Leak Tested)
PRD's
Monitoring Procedures
Decontamination Kit & Supplies – Check for expiration dates

OTHER

Security
Documentation of readings (forms)

CONTROLLER/EVALUATOR NOTES

TOPIC	Cumberland Goodwill EMS	CARLISLE REGIONAL MEDICAL CENTER
Communications		
Contamination Control		
Clean Transfer		
Equipment		
Monitoring Procedures		
Decontamination		
Personal Protective Clothing		
Dosimetry		
Patient Care		
Response time		
Radiation Emergency Area (REA)Set-Up or Hot Zone Control		
Disrobing Procedures		
Security		
Glove changes		