



FEMA

SEP 20 2011

Mr. Mark Sartorius
Regional Administrator
U.S. Nuclear Regulatory Commission, Region III, Suite 210
2443 Warrenville Road
Lisle, Illinois 60532-4352

Dear Mr. Sartorius:

Enclosed is one copy of the D.C. Cook Nuclear Plant Medical Services (MS-1) Drill Final After Action Report/Improvement Plan (AAR). The drill was conducted in Niles, Michigan, on July 20, 2011. Participants included members from the Michigan State Police, Michigan Department of Environmental Quality, Medic 1 Ambulance, Lakeland Community Hospital, and Berrien County Sheriff's Department.

No Deficiencies or Areas Requiring Corrective Action identified during this drill. Copies of the Final AAR have been forwarded to the Michigan State Police, FEMA Headquarters, and the Nuclear Regulatory Commission Headquarters. Please see the enclosed drill reports for further details.

If you have any questions, please contact William King at (312) 408-5575 or Karl Rabenhorst at (312) 408-5516.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew Velasquez III".

Andrew Velasquez III
Regional Administrator

Enclosure



FEMA

SEP 20 2011

Ms. Lisa Gibney
HQ REP Branch Chief and Project Officer
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

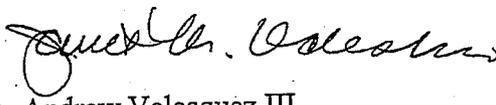
Dear Ms. Gibney:

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Sincerely,


Andrew Velasquez III
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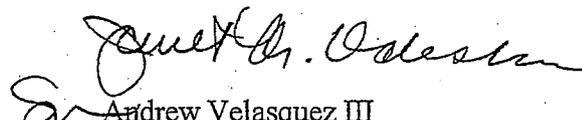
NRC Headquarters Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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Sincerely,


Andrew Velasquez III
Regional Administrator

Enclosure



D.C. Cook Nuclear Plant

After Action Report/ Improvement Plan

Drill Date - July 20, 2011

Radiological Emergency Preparedness (REP) Program



FEMA

Published August 31, 2011

Unclassified

Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

D.C. Cook Nuclear Plant

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D.C. Cook Nuclear Plant After Action Report/Improvement Plan

Published August 31, 2011

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EXECUTIVE SUMMARY

On July 20, 2011, the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), Region V, evaluated a Medical Services Drill in the 10-mile plume exposure pathway Emergency Planning Zone (EPZ) around the D.C. Cook Nuclear Plant. The purpose of the Medical Services Drill was to assess the ability of offsite agencies to respond to a medical emergency involving a potentially radiologically contaminated member of the public. The Medical Services Drill was held in accordance with DHS/FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERPS).

DHS/FEMA wishes to acknowledge the efforts of the many people from the Michigan State Police Emergency Management and Homeland Security Division, Michigan Department of Environmental Quality, Berrien County Sheriff's Department, Medic 1 Ambulance, and Lakeland Community Hospital in Niles, Michigan, who participated in this Medical Services Drill.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork on the part of all participants was evident during this Medical Services Drill.

The following criteria, which are part of the six Exercise Evaluation Areas described in Federal Register notice [67 FR 20580-20602], April 2002, which amends the FEMA REP-14, Radiological Emergency Preparedness Exercise Manual, were evaluated during this Medical Services Drill.

Criterion 1.d.1 - At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations.

Criterion 1.e.1 - Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.

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

Criterion 6.d.1: Facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals.

The State and local organizations demonstrated knowledge of and adequately implemented organizational emergency response plans and procedures.

There were no Deficiencies identified as a result of this drill. There were no Areas Requiring Correction Action (ARCAs) identified during this drill. There were no previous Deficiencies or ARCAs to be corrected during this drill.

INTRODUCTION - EXERCISE BASIS

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear emergency planning and response. DHS/FEMA's activities are conducted pursuant to Title 44 of the Code of Federal Regulations (CFR) Parts 350 "Review and Approval of State and Local Radiological Emergency Plans and Preparedness", 351 "Radiological Emergency Planning and Preparedness" and 352 "Commercial Nuclear Power Plants: Emergency Preparedness Planning" (Commonly referred to as 44 CFR 350 through 352). These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

FEMA Regulation 44 CFR 350 establishes the policies and procedures for DHS/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 governments' participation in joint exercises with licensees.

DHS/FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

-
- Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;

 - 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;

 - Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993); and

 - Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Agriculture;
 - U.S. Department of Commerce;
 - U.S. Department of Energy;
 - U.S. Department of Health and Human Services;
 - U.S. Department of the Interior;
 - U.S. Department of Transportation;
 - U.S. Environmental Protection Agency;
 - U.S. Food and Drug Administration; and
 - U.S. Nuclear Regulatory Commission.

Representatives of these agencies serve on the DHS/FEMA Region V Regional Assistance Committee (RAC), which is chaired by DHS/FEMA.

Formal submission of the RERPs for the D. C. Cook Nuclear Plant to FEMA Region V by the State of Michigan and involved local jurisdictions occurred on January 23, 1986. Formal approval of these RERPs was granted by FEMA to the State of Michigan on June 15, 1987, under 44 CFR 350.

A REP Medical Services (MS-1) Drill was conducted in the 10-mile EPZ around the D.C. Cook Nuclear Plant on July 20, 2011, by DHS/FEMA Region V, 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 the D.C. Cook Nuclear Plant. The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (ORO) during a simulated radiological emergency.

The findings presented in this AAR/IP are based on the evaluations of the Federal evaluation team, with final determinations made by the DHS/FEMA Region V RAC Chairperson, and approved by the DHS/FEMA Headquarters.

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

- 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;
- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and
- FEMA "Radiological Emergency Preparedness: Exercise Evaluation Methodology; Notice" as published in the Federal Register Notice, Vol. 67, No. 80, dated April 25, 2002.

Section 1 of this report, entitled "Exercise Overview", presents information pertaining to the team that planned and coordinated the exercise. This section also provides listing of all participating jurisdictions and functional entities that were evaluated.

Section 2 of this report, entitled "Exercise Design Summary", contains the purpose and design of the exercise, a description of the plume pathway EPZ and presents basic information and data relevant to the exercise scenario.

Section 3 of this report, entitled "Analysis of Capabilities," presents detailed information on the demonstration of applicable exercise criteria at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains:

- (1) descriptions of all Deficiencies and ARCAs (if any) assessed during this exercise, recommended corrective actions, and the State and local governments' schedule of corrective

actions, if applicable, for each identified exercise issue; and

(2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

Section 4 of this report, entitled “Conclusion” presents the DHS/FEMA summary of overall exercise conduct and results as evaluated against the requirements of 44 CFR 350.

EMERGENCY PLANNING ZONE (EPZ) DESCRIPTION

The D. C. Cook Nuclear Plant is located in the State of Michigan, Berrien County, in the City of Bridgman on the eastern shore of Lake Michigan.

The eastern half of the primary 10-mile EPZ lies entirely within Berrien County. The following jurisdictions are located within the EPZ: Baroda Township, Baroda Village, City of Benton Harbor, Benton Township, City of Bridgman, City of Buchanan, Buchanan Township, Chikaming Township, Lake Township, Lincoln Township, Stevensville, Cronoko Township, Village of Berrien Springs, Royalton Township, City of St. Joseph, St Joseph Township, Village of Shoreham, Sodus Township, and Weesaw Township. The western half of the EPZ extends into Lake Michigan in an approximate 10-mile radius.

Within the 10-mile EPZ, located on the shore of Lake Michigan, are summer resorts offering camping facilities, light housekeeping cottages, tourist attractions, and the Warren Dunes State Park, which has a capacity of 70,000 people during the summer and approximately 10,000 during the off season. The area has a population that varies from season to season. The permanent population is estimated to be over 80,000 people. Seasonal fresh fruit and vegetable farming and processing takes place during the spring, summer, and fall months. A portion of the large seasonal work force is Spanish-speaking. Lake Michigan provides the cooling water source for the plant. Transportation facilities include the CSX Railroad.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

D.C. Cook Nuclear Plant

Type of Exercise

Drill

Exercise Date

July 20, 2011

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

William King

Regional Assistance Committee Chairperson

DHS/FEMA Region V

Technical Hazards Branch Chief

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Dwaine Warren

Exercise Director

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Michigan REP Exercise Coordinator
Michigan State Police Emergency Management and Homeland Security Division
Training and Exercise Section, REP Trainer
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HorhnM@michigan.gov

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the D.C. Cook Nuclear Plant drill:

State Jurisdictions

Michigan State Police Emergency Management and Homeland Security Division
Michigan Department of Environmental Quality

Risk Jurisdictions

Berrien County Sheriff's Department

Private Organizations

Lakeland Community Hospital

Medic 1 Ambulance Service
D.C. Cook Nuclear Plant

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On July 20, 2011, the DHS/FEMA Region V Office evaluated a Medical Services (MS-1) Drill for the D.C. Cook Nuclear Power Plant. The purpose of the MS-1 Drill was to assess the capabilities of offsite agencies to respond to a medical emergency involving a potentially radiologically contaminated member of the public. The MS-1 Drill was held in accordance with DHS/FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERPs).

2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and identified Capabilities/REP Criteria selected to be demonstrated are discussed in Appendix B "Exercise Plan".

2.3 Scenario Summary

Appendix C "Summary and Injects", contains a summary of the Exercise Scenario, a simulated sequence of events that was used as a basis for invoking emergency response actions by Offsite Response Organizations (OROs) in the MS-1 Drill.

During the exercise, controllers from the State of Michigan provided "inject messages" containing scenario events and/or relevant data to those persons or locations who would normally receive notification of such events. These inject messages were the method used for invoking additional specific response actions by OROs.

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 July 20, 2011, Medical Services (MS-1) Drill conducted to test the offsite emergency response capabilities of State and local governments in the EPZ surrounding the D.C. Cook Nuclear Power Plant.

Each jurisdiction and functional entity was evaluated based on its demonstration of exercise criteria delineated in Federal Register Notice: Vol. 67, No. 80, dated April 25, 2002. Detailed information on the exercise criteria and the extent-of-play agreements used in this exercise are found in Appendix B “Exercise Plan” of this report.

3.2 Summary Results of Drill Evaluation

The matrix presented in Table 3.1, on the following page(s) presents the status of all exercise criteria from Federal Register Notice Vol 67, No. 80, dated April 25, 2002, which were scheduled for demonstration during this drill by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those criteria is indicated by the use of the following letters.

- M – Met (No Deficiency or ARCAs)
- D – Deficiency assessed
- A – ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)
- N – Not Demonstrated
- Blank - Not scheduled for demonstration

Table 3.1 - Summary of Drill Evaluation

		MI-Lakeland RMC-MSIT-MDEQ Rep-	BER-Lakeland CH-MSIF-
DATE: 2011-07-20 SITE: D.C. Cook Nuclear Plant, MI M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated			
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1	M	M
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 Ingestion Pathway	2d1		
Rad Assess/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 EWs and registration of evacuees	6a1		
Mon/Decon of EW worker equipment	6b1		

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Temporary care of evacuees	6c1		
Transportation and treatment of contaminated injured individuals	6d1	M	M

3.3 Criteria Evaluation Summaries

3.3.1 Michigan Jurisdictions

3.3.1.1 State of Michigan - Lakeland Regional Medical Center - Medical Service - Transportation - MDEQ Representative

The State of Michigan, Department of Environmental Quality and Medic 1 Ambulance Service demonstrated the Target Capability of Emergency Triage and Pre-Hospital Treatment through out-of-sequence event at the D.C. Cook Buchanan Office and Lakeland Community Hospital, Niles, Michigan. Demonstrated activities included communications systems, maps, monitoring instruments, dosimetry and potassium iodide sufficient to support emergency operations. The State of Michigan, Department of Environmental Quality and Medic 1 Ambulance Service personnel demonstrated proper use of personal dosimetry to monitor and control radiation exposure and knew to report to their supervisor if their dosimeters indicated reaching either the administrative and/or maximum exposure limits as prescribed in the Berrien County plans and procedures. Medic 1 Ambulance Service personnel demonstrated proper patient handling, care, and transportation of a potentially contaminated medical patient and medical care took priority over monitoring, decontamination, and contamination control efforts.

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

- a. MET: 1.d.1, 1.e.1, 3.a.1, 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

3.3.2 Risk Jurisdictions

3.3.2.1 Berrien County - Lakeland Community Hospital - Medical Service - Facility

The State of Michigan, Department of Environmental Quality and Lakeland Community Hospital demonstrated the Target Capability of Emergency Triage and Pre-Hospital Treatment through out-of-sequence event at the Lakeland Community Hospital, Niles, Michigan. Demonstrated activities included redundant communications systems and effective patient management between the Emergency Department and ambulances. The Radiation Emergency Area (REA) was fully stocked with all appropriate personal protective equipment and dosimetry, radiological survey equipment and contamination control supplies. The Radiation Protection Technicians issued appropriate dosimetry and managed radiological exposure to emergency workers in accordance with the plans and procedures. The Emergency Department and REA staff demonstrated a thorough understanding of radiological contamination control procedures and that life-threatening emergencies always have priority over radioactive contamination concerns.

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

- a. MET: 1.d.1, 1.e.1, 3.a.1, 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

SECTION 4: CONCLUSION

There were no Deficiencies, ARCAs, or Plan Issues identified for the State of Michigan.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2011-07-20, SITE: D.C. Cook Nuclear Plant, MI

LOCATION	EVALUATOR	AGENCY
State of Michigan - Lakeland Regional Medical Center - Medical Service - Transportation - MDEQ Representative	*Karl Rabenhorst	DHS/FEMA
Berrien County - Lakeland Community Hospital - Medical Service - Facility	*Edward Diaz	FEMA
* Team Leader		

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
BP	Blood Pressure
cpm	counts per minute
DCCNP	DC Cook Nuclear Plant
Decon	Decontamination
DRD	Direct Reading Dosimeter
EMHSD	Emergency Management and Homeland Security Division
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
GCS	Glassgow Coma Scale
KI	Potassium Iodide
LCH	Lakeland Community Hospital
LOC	Level of consciousness
LPN	Licensed Practical Nurse
MDEQ	Michigan Department of Environmental Quality
MDRNE	Michigan Department of Natural Resources & Energy (see MDEQ)
MRT	Medical Radiation Technican
MS-1	Medical Services Drill
MSP	Michigan State Police
NMT	Nuclear Medicine Technician
NRC	Nuclear Regulatory Commission
ORO	Offsite Response Organization
OSLD	Optically Stimulated Luminecent Dosimeter
PRD	Permanent Record Dosimeter
R	Roentgen
RAC	Regional Assistance Committee
REA	Radiological Emergency Area
REAC/TS	Radiation Emergency Assistance Center / Training Site
rem	Roentgen equivalent man
REP	Radiological Emergency Preparedness
RN	Registered Nurse
RSO	Radiation Safety Officer

RT	Radiation Technician
TLD	Thermo-Luminescent Dosimeter

APPENDIX C: EXERCISE PLAN

**OFFSITE MEDICAL DRILL
(Summary and Injects)
LAKELAND COMMUNITY HOSPITAL
NILES, MI**

**JULY 20, 2011
Start time: 0800**

OBJECTIVES:

1. Demonstrate the ability of EMS personnel to transport a contaminated accident patient.
2. Demonstrate the ability of hospital personnel to treat a contaminated accident patient.
3. Demonstrate the ability of personnel to exercise proper radiological controls.
4. Demonstrate the proper techniques of personnel decontamination.
5. Demonstrate good communication between medical personnel and MDEQ staff.
6. Demonstrate proper use of radiation detectors.

PLAYERS AND CONTROLLERS

Lead Controller: Mardella Horhn

MSP/EMHSD Medic 1 Ambulance Controller: Mardella Horhn

Medical Controller: Mary Fry

Rad Controller: Tonya Nobach/Ken Yale

Victim: Alex Nelson

MDEQ ER Monitor: Dan Glencer

MDEQ Ambulance Monitor: Dave Asselin

Medic 1 Ambulance Staff:

Lakeland Community Hospital Emergency Department Staff:

EXTENT OF PLAY FOR LAKELAND COMMUNITY HOSPITAL MEDICAL DRILL

Introduction:

An offsite medical drill will be conducted to demonstrate the State of Michigan concept of operations for handling contaminated injured individuals. The drill is structured to address Medical Services Hospital Program (MS-1) Hospital and Transportation criteria.

The exercise will begin with briefings for ambulance and state radiological monitoring team personnel by a state controller. They will receive the following information:

All Players

A radiological release had occurred at the D. C. Cook Nuclear Power Plant and has since been terminated. The State of Michigan Emergency Operation Center, Berrien County Emergency Operation Center and the State Field Team Center are simulated operational in response to the event. Areas 1 and 2 have been evacuated.

State Monitoring Team

The State Monitoring Team will be briefed and dispatched to the accident scene. They are told an injured individual, the result of a Motorcycle accident, has been located in Area 1 along Red Arrow Highway and W. Lemon Creek Road, south of the Cook Plant and within the release pathway. The individual appears to have ridden his Motorcycle off the road after losing control, trying to leave the area. The team will be told that EMS has been called and is on the way.

Ambulance personnel

The controller will provide dosimetry and explain how they would receive their dosimetry kits from Berrien County Sheriff's Department. They will be briefed on the use of dosimetry and completion of paperwork in lieu of the briefing they would normally receive. After obtaining a briefing and dosimetry from the Berrien County Sheriff's Department, ambulance personnel will receive an explanation that they have been notified by the Berrien County EOC to respond to the accident scene. They will be dispatched to the accident scene and told the individual appears to have ridden his Motorcycle off the road in an area believed to be contaminated.

Extent of Play:

While on patrol in Area 1 which was previously evacuated, a Berrien County Deputy spotted an individual lying on the side of the road along Red Arrow Highway and W. Lemon Creek Road. When the Deputy stopped, the individual appeared to be confused. The Deputy noted the individual had appeared to have lost control while riding his motorcycle and ran off the road, striking a tree. The Deputy radioed Berrien Central Dispatch requesting EMS support. The Berrien County EOC directs a State Monitoring Team and EMS to respond to the accident scene.

A call to the Lakeland Community Hospital will be made by the Lead Controller once EMS arrives at the accident scene to simulate the call from the County EOC. The Berrien County EOC (simulated) calls the State Field Team Center asking for Health Physics Technician assistance at Lakeland Community Hospital.

Note:

1. An ambulance and EMS staff will be used to demonstrate loading, transporting and unloading the victim. EMS personnel will pick up the patient at a staged location. MDEQ staff and the patient will be pre-staged for the ambulance arrival.
2. The ambulance crew will communicate with the receiving hospital regarding the medical status and contamination levels associated with the patient.
3. The MDEQ monitor will be available to conduct and/or supervise radiation monitoring and contamination control during patient transport.
4. The MDEQ monitor will provide radiological exposure control and monitoring of EMS and Hospital personnel.
5. Decontamination is determinant on ambulance protocols and injury that the patient presents.
6. The MDEQ monitor will assist with ingress and egress of radiological control areas and supervise the access into the radiological control area. Monitoring will be performed prior to personnel leaving the potentially contaminated patient treatment area. Protective clothing will be used by hospital personnel in accordance with hospital protocol.

7. The medical facility will demonstrate and/or describe their procedures for the medical treatment and necessary decontamination of a contaminated injured individual. Multiple methods of decontamination, including dry, damp or wet, may be utilized for the removal of contamination. MDEQ personnel will survey the hospital and medical personnel to maintain contamination control.
8. The hospital may contact Radiation Emergency Assistance Center/Training Site (REAC/TS) to determine the appropriate samples needed to assess internal contamination.
9. After the Hospital is notified, Hospital personnel will prepare the area to receive the patient in accordance with their procedures and provide security as necessary. Lakeland Community Hospital as a general practice would, if necessary, post radiation signs in accordance with the requirements as set forth in 10 CFR Part 20. Hospital security will control the area in accordance with the same policies and procedures.
10. Real events that require ambulance or hospital resources take precedence over the drill.
11. Use of equipment will be at the discretion of the drill controller attending medical staff. Simulation will be used whenever possible to reduce cost and waste of resources.
12. All invasive treatments such as administration of medication, and diagnostic procedures (X-rays, etc.) will be simulated.
13. Non-invasive medical treatment, contamination/radiological controls will be fully demonstrated unless otherwise directed by a drill controller.

The drill will be terminated at the discretion of the Lead Controller based on successful demonstration of objectives.

PARTICIPANTS

Medic 1 Ambulance

Lakeland Community Hospital

Michigan Department Environmental Quality (MDEQ)

D.C. Cook Controllers

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MSP/EMHSD Controllers

EXERCISE DATA

Medic 1 Ambulance arrives on scene. The patient has a decreased level of consciousness abrasions and superficial lacerations bilateral forearms and face.

PATIENT CONDITION UPON AMBULANCE ARRIVAL	
Contamination	6000 ccpm on external clothing
Pulse	80
Respiratory	16, Bilateral breath sounds, O2 sat 97%
Blood Pressure	128/80
Skin	Pink, warm and dry
Primary /Secondary Survey	Abrasions and superficial lacerations bilateral forearms and face
LOC (Level of consciousness)	Altered LOC, pupils-3mm (Equal and responsive) Glasgow Coma Scale (GCS) 4,4,6=14

PATIENT CONDITION DURING TRANSPORT	
Contamination	6000 ccpm on external clothing
Pulse	72
Respiratory	20, Bilateral breath sounds
Blood Pressure	138/86
Skin	Pink, warm and dry
Primary/Secondary Survey	Abrasions and superficial lacerations bilateral forearms and face.
LOC	Altered LOC, pupils-3mm equal and slow to react to light, GCS 3,4,5=12

PATIENT CONDITION UPON ARRIVAL AT HOSPITAL	
Contamination	6000 ccpm on external clothing
Pulse	60
Respiratory	24 and irregular, Bilateral breath sounds
Blood Pressure	150/94
Skin	Pink, warm and dry
Primary/Secondary Survey	27 Abrasions and superficial lacerations bilateral forearms and face
LOC	Altered LOC, pupils R-3mm reactive to light

	and L-8mm non-reactive, GCS 2,2.3=7
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PATIENT RADIOLOGICAL CONDITION DURING TREATMENT	
Location of contamination:	Contamination levels:
All outside clothing	6000 ccpm
Abrasions and lacerations on forearms and face	4000 ccpm
Location of contamination:	Contamination levels: After 1st Decon:
All outside clothing if wiped down	5000 ccpm
Under garments/skin if outer clothing removed	No Detectable Activity
Abrasions and lacerations on forearms and face after flushing	3000 ccpm
Location of contamination:	Contamination levels: After 2nd Decon:
All outside clothing if wiped down	5000 ccpm
Under garments/skin if outer clothing removed	No Detectable Activity
Abrasions and lacerations on forearms and face after flushing	1500 ccpm
Location of contamination:	Contamination levels: After 3rd Decon:
All areas (Note: outer clothing must be removed to achieve No Detectable Activity)	No Detectable Activity

Controller notes:

- Wound areas are the only contaminated areas once clothing is properly removed.
- Treatment room contamination levels (e.g., decon table, medical instruments) will be determined by the Controller and based on proper decontamination techniques I.A.W. the Hospital Plan.

AMBULANCE CONTAMINATION LEVELS UPON ARRIVAL AT HOSPITAL	
(To be determined based upon EMS contamination control practices)	
Location of contamination:	Contamination levels:
Wheels/wheel well area	No Detectable Activity (NDA)
Brake and gas pedal	NDA or at the discretion of the controller
Back step of ambulance	4000 ccpm
Floor surface of ambulance	2000 ccpm
EMS Personnel	NDA or at the discretion of the controller.
Location of contamination:	Contamination levels: After 1st Decon:
Wheels/wheel well area	No Detectable Activity (NDA)
Brake and gas pedal	NDA or at the discretion of the controller
Back step of ambulance	NDA or at the discretion of the controller
Floor surface of ambulance	NDA or at the discretion of the controller
EMS Personnel	NDA or at the discretion of the controller.

TIME: Pre t = 0

Victim
Instructions

MESSAGE FORM

Controller

Player

Contingency

Drill/Exercise Type: Lakeland Community Hospital

Message for: Victim

MESSAGE

You were spotted by a Berrien County Deputy lying on the side of the road on Red Arrow Highway near W. Lemon Creek Road. You have abrasions and superficial lacerations to both forearms and face, you are confused and not sure where you are or what happened.

You tell the ambulance staff that you are experiencing a head ache and pain to both forearms.

FOR CONTROLLERS USE ONLY

The patient has decreased level of consciousness with abrasions and lacerations to both forearms and face.

TIME: 0 + 10 min.

Hospital

Notification

MESSAGE FORM

(X) Controller

() Player

() Contingency

Drill/Exercise Type: Lakeland Community Hospital

Message for: MDEQ and Hospital Personnel

MESSAGE

When Hospital is notified that a potentially contaminated patient will be arriving, the Hospital should make preparations to receive patient in accordance with hospital procedures.

MDEQ staff will be dispatched to the hospital in advance of the receipt of the patient for purposes of the exercise.

FOR CONTROLLERS USE ONLY

TIME: After patient arrival at hospital.

Patient Condition and Decontamination

Activities

MESSAGE FORM

(X) Controller

() Player

() Contingency

Drill/Exercise Type: Lakeland Community Hospital

Message for: Medical and Radiological Controllers

MESSAGE

If proper radiological controls are in place no contamination is found on EMS personnel but contamination is found on the rear bumper and floor area of the ambulance. All areas of the hospital and path from ambulance to treatment room will be surveyed and read as background.

The controller may adjust contamination levels based on actions of the players.

Patient condition and contamination levels as follows. Provide information based on player actions.

PATIENT CONDITION UPON ARRIVAL AT HOSPITAL	
Contamination	6000 ccpm on external clothing
Pulse	60
Respiratory	24 and irregular, Bilateral breath sounds
Blood Pressure	150/94
Skin	Pink, warm and dry
Primary/Secondary Survey	Abrasions and superficial lacerations bilateral forearms and face
LOC	Altered LOC, pupils R-3mm reactive to light and L-8mm non-reactive, GCS 2,2.3=7

PATIENT RADIOLOGICAL CONDITION DURING TREATMENT	
Location of contamination:	Contamination levels:
All outside clothing	6000 ccpm
Abrasions and lacerations on forearms and face	4000 ccpm
Location of contamination:	Contamination levels: After 1st Decon:
All outside clothing if wiped down	5000 ccpm
Under garments/skin if outer clothing removed	No Detectable Activity
Abrasions and lacerations on forearms and face after flushing	3000 ccpm
Location of contamination:	Contamination levels: After 2nd Decon:
All outside clothing if wiped down	5000 ccpm
Under garments/skin if outer clothing removed	No Detectable Activity
Abrasions and lacerations on forearms and face after flushing	1500 ccpm
Location of contamination:	Contamination levels: After 3rd Decon:
All areas (Note: outer clothing must be removed to achieve No Detectable Activity)	No Detectable Activity

IT DOES NOT MATTER IF THE CLOTHING IS REMOVED BY THE AMBULANCE OR HOSPITAL PERSONNEL. Clothing should be bagged, labeled and stored accordingly.

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