



**FEMA**

James K. Joseph, Director  
Illinois Emergency Management Agency  
2200 South Dirksen Parkway  
Springfield, Illinois 62703

Dear Mr. Joseph:


Enclosed is the Final After Action Report/Improvement Plan for the Order of Saint Francis, Saint Joseph Medical Center June 17, 2016 Radiological Emergency Preparedness Medical Services Drill for the Clinton Power Station.

There were no Level 1 or Level 2 Findings or Plan Issues identified as a result of this drill.

Based on the results of the exercise, the planning and preparedness for the State of Illinois and affected local jurisdictions provide reasonable assurance that appropriate measures can be taken to protect public health and safety. Therefore, Title 44 CFR Part 350 approval of the offsite radiological emergency response plans and preparedness for the State of Illinois remain in effect.

If you have any questions, please contact Sean O'Leary, Chair, Regional Assistance Committee, at (312) 408-5389.

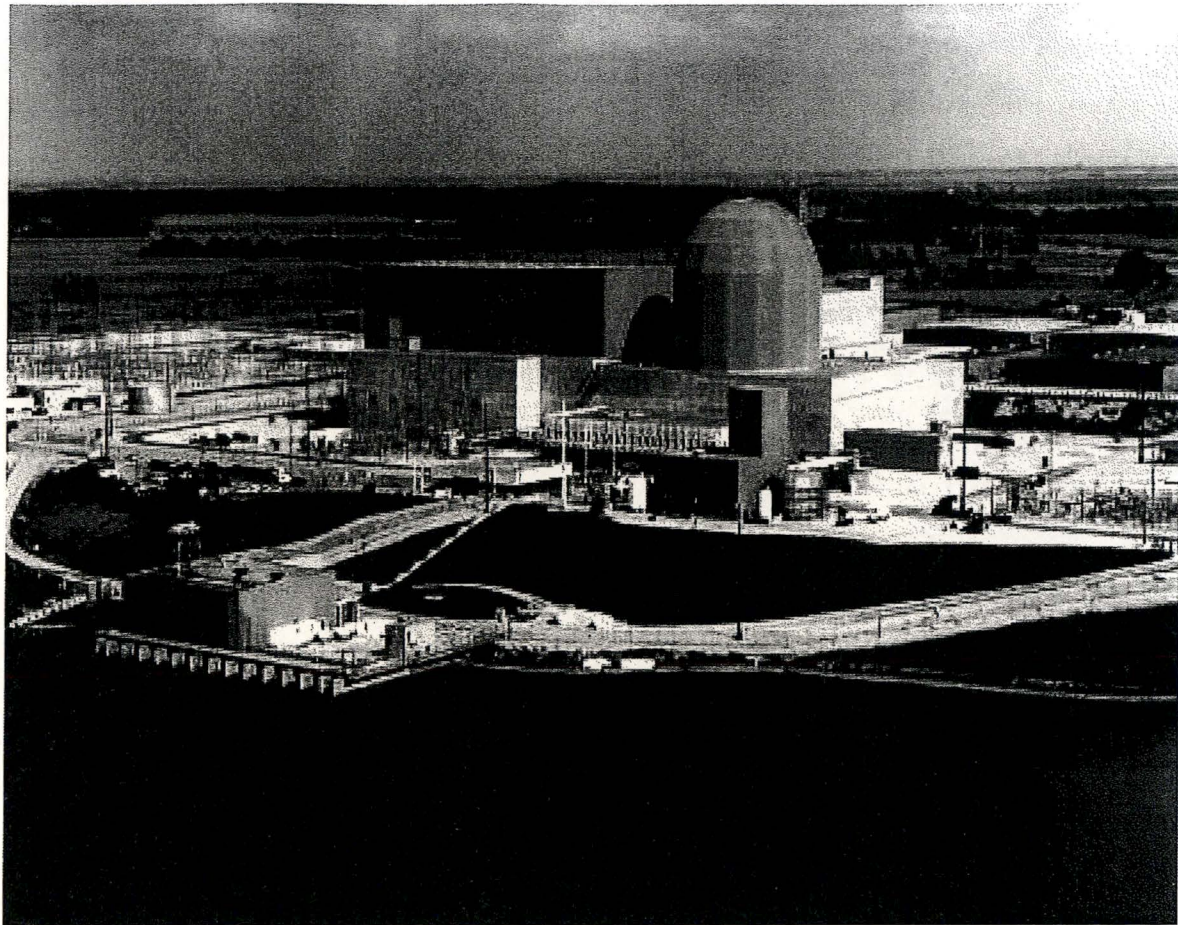
Sincerely,

  
Andrew Velasquez III  
Regional Administrator

Enclosure (1)

cc: Illinois Emergency Management Agency  
DHS/FEMA Headquarters  
NRC Region III  
NRC Headquarters Document Control Desk

IX49  
NRR



Clinton Power Station

# After Action Report/ Improvement Plan

Drill Date – June 17, 2016

Radiological Emergency Preparedness Program



**FEMA**

*Published July 28, 2016*

This page is intentionally blank.

---

# Clinton Power Station After Action Report/Improvement Plan

*Published July 28, 2016*

## Contents

Executive Summary	3
Section 1: Exercise Overview	8
1.1 Exercise Details	8
1.2 Exercise Planning Team Leadership	8
1.3 Participating Organizations	10
Section 2: Exercise Design Summary	11
2.1 Exercise Purpose and Design	11
2.2 Exercise Objectives, Capabilities and Activities	11
2.3 Scenario Summary	12
Section 3: Analysis of Capabilities	13
3.1 Drill Evaluation and Results	13
3.2 Summary Results of Drill Evaluation	14
3.3 Criteria Evaluation Summaries	17
3.3.1 Illinois Jurisdictions	17
3.3.1.1 State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Transportation	17
3.3.1.2 State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Facility	17
Section 4: Conclusion	18
Appendix A: Drill Evaluators and Team Leaders	19
Appendix B: Exercise Plan	20

This page is intentionally blank.

---

## EXECUTIVE SUMMARY

On June 17, 2016, the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), Region V, evaluated a Medical Services (MS-1) Drill at the Order of Saint Francis (OSF) St. Joseph Medical Center associated with the Clinton Power Station. The purpose of the MS-1 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 MS-1 Drill was held in accordance with DHS/FEMA policies and guidance concerning the exercise of State and local radiological emergency response plans (RERPs) and procedures.

The DHS/FEMA wishes to acknowledge the efforts of the personnel from the Illinois Emergency Management Agency, Bloomington Fire Department, and the OSF St. Joseph Medical Center who participated in the MS-1 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.

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

There were no Level 1 Findings, Level 2 Findings or Plan Issues identified as a result of this drill and there were no previous Level 1 Findings, Level 2 Finding or Plan Issues 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 planning and response. The 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.

The 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 October 1, 2015, 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 CPS to FEMA Region V by the State of Illinois and involved local jurisdictions occurred on November 25, 1986. Formal approval of these RERPs was granted by FEMA on August 5, 1987, under 44 CFR 350.

The purpose of this After Action Report (AAR)/Improvement Plan (IP) is to present the exercise results and findings based on the performance of the Offsite Response Organizations (OROs) during a medical emergency involving a potentially radiologically contaminated member of the public.

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 Chair, 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 Radiological Emergency Preparedness: Exercise Evaluation Methodology, as published in the FEMA Radiological Emergency Preparedness Program Manual, dated January 2016.

Section 1 of this report, entitled "Exercise Overview," presents information pertaining to the team that planned and coordinated the exercise. This section also provides a 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 exercise objectives 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



---

Level 1 Findings, Level 2 Findings and Plan Issues 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 Level 2 Findings 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 CPS is located approximately seven miles northeast of the City of Clinton in Harp Township, within DeWitt County, Illinois. DeWitt County is located near the geographical center of the State of Illinois. The topography of the area is predominantly rolling prairies.

The EPZ for the CPS is an area approximately the area of a ten-mile radius with the CPS as the center point. The EPZ extends approximately ten miles outward in all directions from the CPS for the plume exposure pathway planning zone and fifty miles outward for the ingestion exposure pathway planning zone. In the event of a serious accident at the CPS, the plume exposure EPZ will be the area in which intensive efforts will be made to notify and protect residents and transient population from exposure to radiation. The 10-mile EPZ contains a total population of 12,702 (2010 census) within the risk county of DeWitt, and the support counties of Macon, McLean and Piatt. Nearly two-thirds of the total 10-mile EPZ population (8,422) resides in the communities of Clinton, Weldon, Wapella, and DeWitt. The land use within the 10-mile EPZ is predominantly agricultural, with cash grain crops of corn and soybeans. The closest industries are located in the community of Clinton.

Recreational facilities outside the municipalities include the Clinton Lake State Recreation Area and the Weldon Springs State Park. The park encompasses approximately 370 acres and contains a 28-acre lake with camping, fishing, and picnicking facilities. Weldon Springs is one of the two sizable lakes within 10 miles of the site. Clinton Lake is a 4,895 acre man-made cooling lake within the CPS property lines. Recreational facilities accommodate camping, boating, hunting, fishing and hiking.

The nearest major highways are State Highways 54, 10, and 48, all of which intersect the plant location. Other major thoroughfares are U.S. Highway 51, located about six miles west of the

---

plant and Interstate Highway 74, located about 11 miles northeast of the plant. The nearest railroad is the Canadian National Railway (CN), which crosses the site east to west and comes within about three-fourths of a mile to the north of the reactor centerline. Another CN track is located approximately three and a half miles south of the CPS.

## **SECTION 1: EXERCISE OVERVIEW**

### **1.1 Exercise Details**

**Exercise Name**

Clinton Power Station

**Type of Exercise**

Drill

**Exercise Date**

June 17, 2016

**Program**

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

**Scenario Type**

Radiological Emergency

### **1.2 Exercise Planning Team Leadership**

Sean O'Leary  
Regional Assistance Committee, Chair  
Chief, Technological Hazards Branch  
DHS/FEMA Region V  
536 South Clark Street  
Chicago, IL, 60605  
(312) 408-5389  
[sean.oleary@fema.dhs.gov](mailto:sean.oleary@fema.dhs.gov)

Stephen Tulley  
Exercise Director  
Supervisory REP Team Leader  
DHS/FEMA Region V  
536 South Clark Street  
Chicago, IL, 60605  
(312) 408-4425  
[stephen.tulley@fema.dhs.gov](mailto:stephen.tulley@fema.dhs.gov)

David Ortman  
Site Specialist  
Emergency Management Specialist  
DHS/FEMA Region V  
536 South Clark Street  
Chicago, IL, 60605  
(312) 408-4429  
[david.ortman@fema.dhs.gov](mailto:david.ortman@fema.dhs.gov)

Joni Estabrook  
State Controller  
Illinois Emergency Management Agency  
Nuclear Safety Sr. Emergency Response Coordinator 1035 Outer Park Drive  
Springfield, Illinois, 62704  
217-524-0888  
[joni.estabrook@illinois.gov](mailto:joni.estabrook@illinois.gov)

Ed Ingram  
Offsite Planner Exelon  
Offsite Programs 4300 Winfield Road  
Warrenville, Illinois, 60555  
630-470-7859  
[edward.ingram@exeloncorp.com](mailto:edward.ingram@exeloncorp.com)

## 1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Clinton Power Station drill:

State Jurisdictions

Illinois Emergency Management Agency

Order of Saint Francis St. Joseph Medical Center

Bloomington Fire Department

---

## **SECTION 2: EXERCISE DESIGN SUMMARY**

### **2.1 Exercise Purpose and Design**

On June 17, 2016, the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), Region V, evaluated a Medical Services (MS-1) Drill at the Order of Saint Francis St. Joseph Medical Center associated with the Clinton Power Station. The purpose of the MS-1 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 MS-1 Drill was held in accordance with the DHS/FEMA policies and guidance concerning the exercise of State and local radiological emergency response plans and procedures.

### **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."

The Exercise Planning Team (EPT) selected objectives that focus on evaluating emergency response procedures, identifying areas for improvement, and fostering collaboration between the various Offsite Response Organizations (OROs) and stakeholders. The following criteria, which are part of the six Exercise Evaluation Areas described in the DHS/FEMA Radiological Emergency Preparedness (REP) Program Manual, dated January 2016, were evaluated during the MS-1 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 Offsite Response Organizations (ORO) issue appropriate dosimetry, KI 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. The ORO's maintain appropriate record-keeping of the administration of KI to emergency workers.

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

## 2.3 Scenario Summary

Appendix B “Exercise Plan,” contains a summary of the Exercise Scenario, a simulated sequence of events that was used as the basis for invoking emergency response actions by Offsite Response Organizations (OROs) in the Clinton Power Station MS-1 Drill.

During the exercise, controllers from the State of Illinois 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 June 17, 2016, Medical Services (MS-1) Drill conducted to assess the ability of offsite agencies to respond to a medical emergency involving a potentially radiologically contaminated member of the public.

Each jurisdiction and functional entity was evaluated based on its demonstration of exercise criteria delineated in DHS/FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology; as published in the FEMA Radiological Emergency Preparedness Program Manual, dated January 2016. 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.

Presented below are definitions of the terms used in this report relative to the criteria demonstration status:

- **M – Met:** The status of a REP exercise Evaluation Area Criterion indicating that the participating Offsite Response Organization (ORO) demonstrated all demonstration criteria for the Evaluation Area Criterion to the level required in the extent-of-play agreement with no Deficiencies or Level 2 Finding assessed in the current exercise and no unresolved prior Level 2 Finding.
- **L1 – Level 1 Finding:** An observed or identified inadequacy of 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 the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.
- **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 in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance.

---

## 3.2 Summary Results of Drill Evaluation

The matrix presented in Table 3.1, on the following pages, presents the status of all exercise criteria from the DHS/FEMA REP: Exercise Evaluation Methodology, as published in the DHS/FEMA REP Program Manual, dated January 2016, which were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. The criterion status box is blank if it was not scheduled for demonstration.

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdiction-based, issues-only format.

The DHS has developed a standardized system for numbering exercise issues. This system is used to achieve consistency in numbering exercise issues among DHS Regions and site-specific exercise reports within each Region. It also is used to expedite tracking of exercise issues on a nationwide basis.

The identifying number of Level 1 Findings, Level 2 Finding, and Plan Issues includes the following elements, with each element separated by a hyphen (-).

- Plant Site Identifier – A two-digit number, corresponding to the Utility Billable Plant Site Code (06 for Clinton Power Station).
- Exercise Year – The last two digits of the year the exercise was conducted.
- Criterion Number – An alpha and two-digit number corresponding to the criteria numbers in the six Exercise Evaluation Areas described in Part III.C of the DHS/FEMA REP Program Manual, January 2016.
- Issue Classification Identifier – (L1 = Level 1 Finding, L2 = Level 2 Finding, P = Plan Issue).
- Exercise Identification Number – A separate two or three-digit indexing number assigned to each issue identified in the exercise.

Table 3.1 - Summary of Drill Evaluation

<p style="text-align: center;">DATE: 2016-06-17 SITE: Clinton Power Station, IL M: Met, L2: Level 2 Finding, L1: Level 1 Finding, P: Plan Issue, N: Not Demonstrated</p>			
		IL-OSF-SL Joseph MC-MSIT	IL-SIMC-MSIF
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1	M	M
Equipment and Supplies to Support Operations	1e1	M	M
Protective Action Decision Making			
EW Exposure Control Decisions	2a1		
PARs	2b1		
PADs	2b2		
PADs for Disabled/Functional Needs	2c1		
Ingestion PADs	2d1		
RRR Decisions	2e1		
Protective Action Implementation			
EW Exposure Control Implementation	3a1	M	M
KI Public/Institutionalized	3b1		
PAD Implementation Disabled/Functional Needs	3c1		
PAD Implementation Schools	3c2		
TACP Establishment	3d1		
Impediments	3d2		
Implement Ingestion PADs	3e1		
Ingestion Pathway Decisions	3e2		
Implementation of RRR Decisions	3f1		
Field Measurement and Analysis			
RESERVED	4a1		
Field Team Management	4a2		
Field Team Operations	4a3		
Field Team Sampling	4b1		
Laboratory Operations	4c1		
Emergency Notification and Public Info			
Initial Alert & Notification	5a1		
RESERVED	5a2		
Backup Alert & Notification	5a3		
Exception Area Alerting	5a4		
Subsequent Information & Instructions	5b1		
Support Operations/Facilities			
Reception Center Operations	6a1		
EW Monitoring & Decontamination	6b1		
Congregate Care	6c1		
Contaminated Injured Transport & Care	6d1	M	M

### **3.3 Criteria Evaluation Summaries**

#### **3.3.1 Illinois Jurisdictions**

##### **3.3.1.1 State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Transportation**

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. LEVEL 2 FINDINGS: None
- c. LEVEL 1 FINDINGS: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

##### **3.3.1.2 State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Facility**

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. LEVEL 2 FINDINGS: None
- c. LEVEL 1 FINDINGS: 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 Level 1 Findings, Level 2 Findings or Plan Issues identified as a result of this drill and there were no previous Level 1 Findings, Level 2 Finding or Plan Issues to be corrected during this drill.

Based on the results of the June 17, 2016 drill, the offsite radiological emergency response plans and preparedness for the State of Illinois and affected local jurisdictions, site-specific to the Clinton Power Station, can be implemented and are adequate to provide reasonable assurance that appropriate measure can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

---

## APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2016-06-17, SITE: Clinton Power Station, IL

LOCATION	EVALUATOR	AGENCY
State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Transportation	Clint Crackel	FEMA RV
State of Illinois - OSF - St. Joseph Medical Center - Medical Service - Facility	*David Ortman	FEMA RV
* Team Leader		

---

## APPENDIX B: EXERCISE PLAN

This appendix lists the exercise criteria, which were scheduled for demonstration in the Medical Services (MS-1) Drill associated with the Clinton Power Station on June 17, 2016 and the offsite extent-of-play agreement accepted by DHS/FEMA Region V. The exercise criteria, contained in the DHS/FEMA Radiological Emergency Preparedness (REP) Program Manual, dated January 2016, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980. Because the exercise criteria are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and accepted by the DHS/FEMA to provide evaluators with guidance on expected actual demonstration of the criteria.



**Offsite Medical Drill**  
**Extent of Play and Injects for Clinton**  
**Medical Services Drill**  
OSF St. Joseph Medical Center  
Bloomington, Illinois

June 17th, 2016  
Start time 10:00 a.m.

---

Extent of Play Agreement  
Medical Services Exercise  
June 17, 2016

Location: OSF St. Joseph Medical Center  
2200 East Washington  
Bloomington, IL 61071

Transportation Provider: Bloomington Fire Ambulance

Participant Roster:

Contaminated Patient: Hospital Staff  
Lead Controller: Joni Easterbrook (IEMA)  
Ambulance Controller: Joni Estabrook (IEMA)  
Hospital Controller: Tolly Knezevich (IEMA)  
Float Controller: Tarver Haven (IEMA)  
Ambulance MRT: Don Eastep (IEMA)

Criteria that can be re-demonstrated immediately for credit at the discretion of the evaluator, include the following: For Transportation: 1.d1, 1.e.1, 3.a.1 and 6.d.1; for the Hospital 1.d1, 1.e.1, 3.a.1 and 6.d.1. Criteria may be re-demonstrated, as agreed by the Lead Controller and FEMA.

EVALUATION AREA 1 – EMERGENCY OPERATIONS MANAGEMENT

Criterion 1.d.1: At least two communication systems are available, at least one operated properly, and communication links are established and maintained with appropriate locations.

The Ambulance will use 2-way radios to communicate with OSF St. Joseph Medical Center. Other communication systems that may be used include commercial telephone or cell phones.

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

OSF St. Joseph Medical Center will adequately demonstrate the ability to support operations, with adequate resources. OSF St. Joseph Medical Center will also issue dosimetry and perform a dosimetry control briefing to staff prior to drill start.

EVALUATION AREA 3 – PROTECTIVE ACTION IMPLEMENTATION

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

---

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

Criterion 6.d.1: 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 for OSF St. Joseph Medical Center Medical Drill

#### **Introduction:**

An offsite medical drill will be conducted to demonstrate the State of Illinois' concept of operations of handling contaminated injured individuals. The drill is structured to address MS-1 Hospital and Transportation Criteria.

#### **Extent of Play:**

The Clinton Nuclear Power Station has declared a general emergency. The emergency alert sirens have sounded, the public has been directed to evacuate affected areas and to report to reception centers set up in the local area. The scenario is based on a local resident and her two daughters who has reported to the reception center from a rural area and spent an extended time in the Clinton EPZ. The drill will begin at the pickup of the patient and parent by the ambulance. Any reception center activities will be demonstrated at the reception center demonstration.

#### **Hospital and Transportation:**

The hospital will demonstrate procedures for limiting exposure to hospital staff, decontaminating a patient, and restricting access to the area where the patient is being treated and monitored.

Bloomington Fire will demonstrate the capability to transport a contaminated, injured individual to St. Joseph's. The ambulance crew will pick up a contaminated injured patient near the hospital at a simulated reception center. IEMA MRT staff will accompany the ambulance staff during the transportation portion of the drill. The mother will simulate driving to the facility so that exercise evaluators and controllers can observe the transportation and treatment of the child.

Bloomington Fire will call in the information regarding the patient to hospital so they can prepare the receipt of a contaminated injured patient. St. Joseph's will implement their plan for receipt, isolation and treatment of an injured contaminated patient. Medical personnel will utilize universal precautions and good housekeeping practices to minimize the spread of contamination, and will focus on treating the patient's medical condition. Simple decontamination efforts will be demonstrated after the patient has been medically stabilized. The hospital will demonstrate procedures for limiting exposure to hospital staff, decontaminating a patient, and restricting access to the area where the patient is being treated and monitored. Hospital personnel will demonstrate their knowledge of who to call beyond IEMA for assistance in Radiological Accidents, e.g., REAC/TS.

One IEMA MRT will be participating in this drill. One IEMA MRT is to facilitate monitoring the parent of the patient, ambulance staff and ambulance itself so it can be put back into service as

---

soon as possible. However, if the IEMA MRT requests assistance from the reception center supervisor the float controller will be available to assist. The ambulance MRT will be available to assist Hospital Staff in the REA if needed.

The drill will conclude with hospital nuclear medicine staff supervising the removal of protective clothing and surveying of the emergency room and hospital personnel.

IEMA will also advise on the proper procedure for release or disposal of contaminated material.

**Objectives:**

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

**IEMA Players and Controllers**

Contaminated Patient  
IEMA Ambulance MRT  
IEMA Ambulance Controller  
IEMA Hospital Controller  
IEMA Float Controller

---

## Extent of Play for OSF St. Joseph Medical Center

Clinton Power Station has declared a general emergency. The emergency alert sirens have sounded, the public has been directed to evacuate affected areas and to report to reception centers set up in the local area. The scenario is based on a local resident who had stayed in the EPZ when the release occurred.

This drill will originate near the hospital at a simulated reception center.

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 close to the hospital. The patient will be pre-staged for the ambulance arrival. IEMA staff will be present for the transportation portion of the drill.
2. The ambulance crew will communicate with the receiving hospital regarding the medical status of the patient and any additional precautions taken to prevent spread of contamination.
3. IEMA MRT and hospital nuclear medicine staff will be providing radiological exposure control and monitoring of EMS and hospital personnel.
4. Decontamination is determinant on ambulance protocols and injury that the patient presents.
5. Hospital nuclear medicine personnel will be responsible for any patient and staff radiological monitoring and contamination control activities until an IEMA MRT arrives on scene.
6. The IEMA MRT will supervise the ingress and egress of radiological control areas. Monitoring will be performed prior to personnel leaving the potentially contaminated patient treatment area. Protective clothing used by hospital personnel will be similar to that used for a chemical or biological agent in accordance with hospital protocol. Multiple methods of decontamination, including dry, damp or wet, may be utilized for the removal of contamination.
7. The medical facility will demonstrate 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. IEMA/hospital nuclear medicine personnel will survey the hospital REA and medical personnel to maintain contamination control. These methods will include taking swipes of floors and surfaces so that the hospital and ambulance can be cleared for normal operations.
8. The hospital may need to contact REAC/TS to determine appropriate samples needed to assess internal contamination. Any samples collected will be sent to REAC/TS for analyzing, IEMA does not process biological samples.
9. Emergency medical personnel will be able to maintain their exposure below the limits specified in 10 CFR Part 20 because for the exercise, the dose rate from the patient is below 2 mr/hr.
10. 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. IEMA 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 used to provide isolation in the treatment of a chemical or biological agent.

11. Regardless of specific written hospital procedures for addressing radiation contamination, the supervision and advice provided by IEMA personnel should be the governing guidance for determining whether the patient's contamination situation is appropriately addressed.
12. The contaminated injured patient will be accompanied by a parent and infant that needs to be monitored. The pediatric and infant decon will be an objective to be performed and evaluated by the hospital, per hospital request.
13. After monitoring and decon has occurred the patient will utilize the decon room for final shower purpose.

The drill terminate when the controller verifies that the criteria under Evaluation Area 6, Sub-element 6.d.1 and Evaluation Area 3, Sub-element 3.a.1, have been satisfied.

---

TIME: Pre t = 0

**Contaminated Patient**

**MESSAGE FORM**

☐ Controller

☒ Player

☐ Contingency

Drill/Exercise Type: OSF St. Joseph Medical Center

Message for: Victim and EMS staff

**MESSAGE**

The Clinton Power Station has issued a public broadcast that a radioactive release has occurred and that the residents and those working in the Clinton EPZ area are being evacuated.

Before evacuating you spend extended time in the EPZ during the release, which delays you and your daughters reporting to the reception center. You have been exposed and contaminated with low levels of radioactive materials. Upon arrival at the reception center your daughter falls and starts bleeding in one arm. Your daughter has glass embedded in her hand limiting the mobility of your fingers. The reception center staff notifies 911.

---

**FOR CONTROLLERS USE ONLY**

The information would be available to the hospital as they received preliminary notification information from outbound ambulance calls.



TIME: Time 0  
MESSAGE: Initial Conditions

**MESSAGE FORM**

(X) Controller

(X) Player

( ) Contingency

Drill/Exercise Type: OSF St. Joseph Medical Center Medical Drill

Message for: Hospital Personnel

**MESSAGE**

**Initial Conditions:**

<b><u>Contamination Levels:</u></b>	<b><u>Initial survey Reading</u></b>	<b><u>First Decon</u></b>	<b><u>Second Decon</u></b>	<b><u>Third Decon</u></b>
Right palm	700 cpm	500 cpm	300 cpm	75 cpm
Left palm	600 cpm	300 cpm	60 cpm	
Pant legs at knee	500 cpm	Should be removed		
Shoes (should be removed)	900 cpm	0 should be removed		

\*Pant/shoes should be removed and bagged.

\*\*Contamination would likely be spread from hand to other parts of the patient's skin or clothing.

**Current Medical Conditions:**

Complaining of pain in palm of hand, 5 out of 10 scale, conscious, alert pulse present, bleeding or other obvious signs of injury.

---

FOR CONTROLLERS USE ONLY

---

TO: First Responders/EMS

FROM: EMS Controller

NOTE: Do not provide the data to players unless the means to obtain it are demonstrated.

---

**THIS IS A DRILL**  
**DO NOT** initiate actions affecting safe operations

---

**Message:** 8 yr old female patient complaining of hand pain, bleeding and numbness. Patient has allergy to penicillin.

	<i>EMS Arrival on Scene</i>	<i>Enroute to Hospital</i>	<i>In REA</i>
<b>Level of consciousness:</b>	ResponsiveX3	*	*
<b>Respirations:</b>	24	*	*
<b>Pulse:</b>	65	*	*
<b>Skin:</b>		*	*
<b>Blood Pressure:</b>	140/74	110/70	100/68
<b>Visual:</b>		*	*

**Note:**

\*Patient condition en route and in REA are dependent on EMT actions and level of training.

\*Allergy to penicillin

**Expected Action:**

Follow local protocols or standing orders.

---

**THIS IS A DRILL**  
**DO NOT** initiate actions affecting safe operations

---

---

TIME: 0 + 5 min.

MESSAGE: \_\_\_\_\_

MESSAGE FORM

(X) Controller

(X) Player

() Contingency

Drill/Exercise Type: OSF St. Joseph Medical Center Medical Drill

Message for: Hospital Personnel

MESSAGE

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

---

FOR CONTROLLERS USE ONLY

ED controller may inject, with permission of Evaluator, a time jump to expedite REA preparedness.

TIME: After patient arrival at hospital

**MESSAGE: Decontamination Activities**

MESSAGE FORM

(X) Controller

() Player

( ) Contingency

Drill/Exercise Type: OSF St. Joseph Medical Center Drill

Message for: IEMA RAD Controllers

MESSAGE

If proper radiological controls are in place no contamination is found in 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.

The patient has contamination on right palm, left palm, pant knees and shoes. The parent has contaminated shoes and one contaminated hand that was held by pediatric patient. Contamination levels and locations on parent and infant will be adjusted at the discretion of the controller.

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

---

FOR CONTROLLERS USE ONLY

This page is intentionally blank.