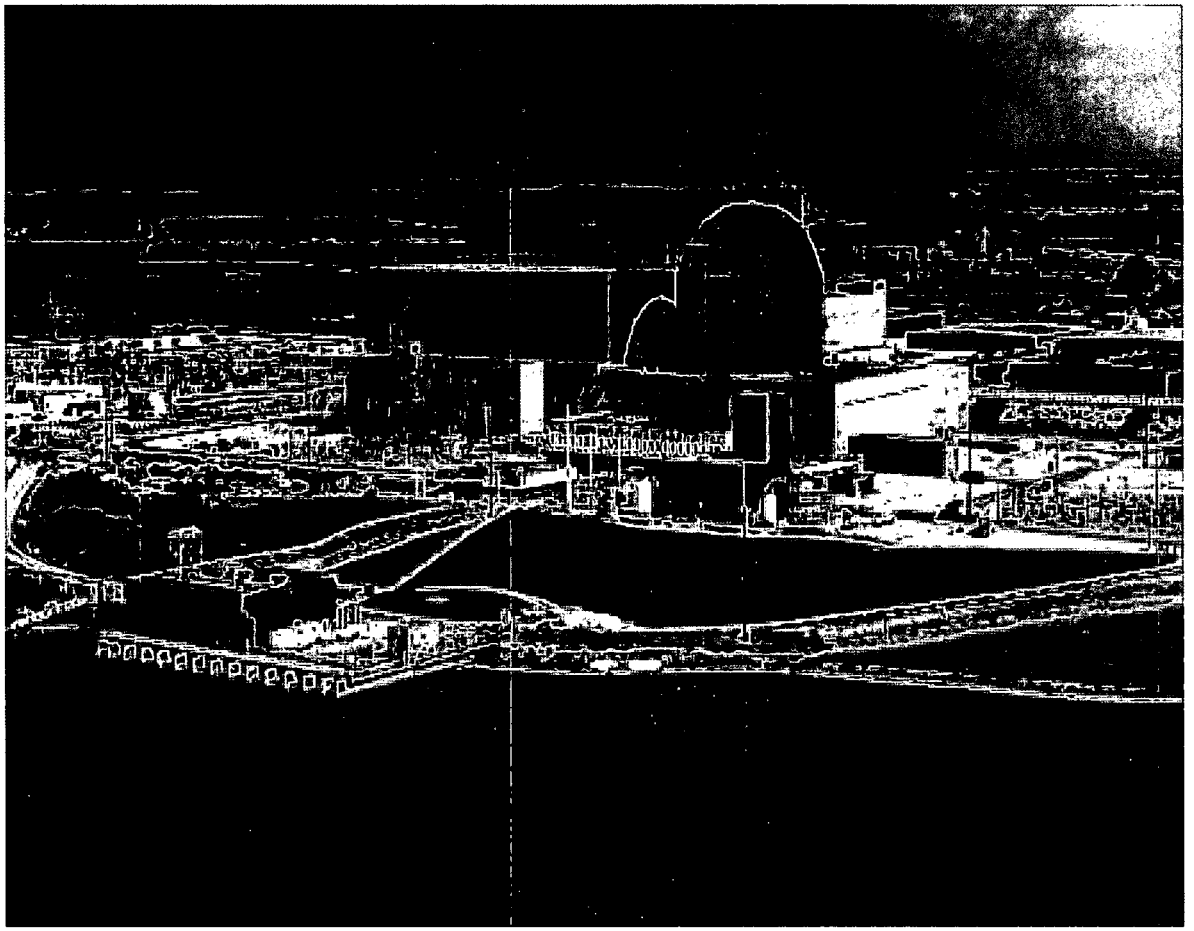

Clinton Power Station

After Action Report/ Improvement Plan

Drill Date - October 19, 2010

Radiological Emergency Preparedness (REP) Program

FEMA

Published November 23, 2010

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Clinton Power Station

After Action Report/Improvement Plan

Published November 23, 2010

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EXECUTIVE SUMMARY

On October 19, 2010, 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 Clinton Power Station. 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.

DHS/FEMA wishes to acknowledge the efforts of the personnel from the Illinois Emergency Management Agency, Bloomington Fire Department, and Order of St. Francis St. Joseph Medical Center, who participated in the 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 the 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 - The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring,contaminated injured individuals.

The County 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 planning and response. DHS/FEMA's activities are conducted pursuant to 44 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." 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.

The FEMA Rule 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 Clinton Power Station 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.

A Medical Services (MS-1) Drill was conducted on October 19, 2010, and evaluated by DHS/FEMA to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Clinton Power Station. The purpose of this exercise report is to present the exercise results and findings on the performance of the Offsite Response Organizations (ORO) during a simulated radiological emergency.

The findings presented in this report 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 3 of this report, entitled "Analysis of Capabilities", presented detailed information on the demonstration of applicable drill 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 assessed during the drill, recommended corrective actions, and (2) descriptions of resolved ARCAs assessed during the previous drills and the status of the OROs efforts to resolve them.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Clinton Power Station

Type of Exercise
Drill

Exercise Date
October 19, 2010

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

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

State Jurisdictions

Illinois Emergency Management Agency
Order of St. Francis St. Joseph Medical Center
Bloomington Fire Department

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On October 19, 2010, the DHS/FEMA Region V Office evaluated a Medical Services (MS-1) Drill for 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's policies and guidance concerning the exercise of State and local radiological emergency response plans.

2.2 Exercise Objectives, Capabilities and Activities

Exercise objectives and indentified 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 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 October 19, 2010, Medical Services (MS-1) Drill conducted to test the offsite emergency response capabilities of State and local governments in the EPZ surrounding the Clinton Power Station.

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

DATE: 2010-10-19 SITE: Clinton Power Station, IL M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		IL-OSF-St.Joseph MC--MS1F-	IL--Bloomington FD-MS1T-
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		
Temporary care of evacuees	6c1		
Transportation and treatment of contaminated injured individuals	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-Facility

Criterion 1.d.1:
Successfully demonstrated – this criterion narrative is contained in the Criterion 6.d.1 section.

Criterion 1.e.1:
Successfully demonstrated – this criterion narrative is contained in the Criterion 6.d.1 section.

Criterion 3.a.1:
Successfully demonstrated – this criterion narrative is contained in the Criterion 6.d.1 section.

Criterion 6.d.1:
As part of the Clinton Power Station Radiological Emergency Preparedness exercise, the Order of St. Francis (OSF) St. Joseph Medical Center demonstrated the treatment of a contaminated injured individual and had appropriate space, adequate resources and trained personnel to provide for monitoring, decontamination and medical services. The demonstration was conducted during an out-of-sequence activity on October 19, 2010 at approximately 1300 hours at the OSF St. Joseph Medical Center on 2200 East Washington Street, Bloomington, Illinois.

At approximately 1320 hours, an Emergency Department nurse received a telephone call from a Bloomington Fire Department ambulance on the Medical Emergency Radio Communications of Illinois (MERCI), dedicated for use by ambulance services, indicating that they were responding to an incident at the Reception Center potentially involving a radiologically contaminated injured individual. The MERCI system incorporates all radio and telephone communications into a single console. There were two commercial telephone lines on the system. One line was a dedicated telephone number for emergency response that was referred to as the "Bat Line." The other was an unlisted private telephone number that could also be used as needed. The radio system included capability for the Statewide radio system with four channels for various local responses. The OSF St. Joseph Medical Center immediately contacted the Emergency Room Charge Nurse to let her know about the incident. At 1321 hours, the OSF St. Joseph Medical Center received a second call on the private number indicating that the ambulance was

transporting a contaminated injured individual to the hospital with an estimated arrival time of fifteen minutes at the Emergency Room. The Charge Nurse was immediately contacted by the nurse taking the call. The Charge Nurse initiated the Hospital's Radiation Decontamination Plan and activated the Emergency Response Organization.

The Charge Nurse contacted the medical center switchboard operator after the notification and requested that a "Code Orange Hazmat" announcement be made. At 1324 hours, a hospital wide announcement was made stating that there was a "Code Orange Hazmat Drill in the Emergency Department." The Charge Nurse and staff initiated a call out for the Nuclear Medicine, Emergency Preparedness Coordinator, Emergency Department Manager, Emergency Department staff, Radiation Safety Officer, the Bloomington Fire Department, and Security, in accordance with the Medical Center procedures.

Medical Center staff immediately began arriving in the Emergency Room. Some of the responders were already within the Emergency Department and others came from within the Medical Center. Several Bloomington Fire Department personnel were already present. The Fire Department had a training session just prior to the start of the drill. The Illinois Emergency Management Agency (IEMA) were also pre-staged at the Emergency Department.

Security was present and through interview, would have secured the ambulance bay and redirected any traffic. However, actual barricades were not used and there was no traffic redirected during the drill. The Emergency Department had cones and barricade tape stored within the Decontamination Shower Room and would have been used if needed.

Key members of the Emergency Department staff and personnel manning the Medical Center's Incident Command Center were issued Motorola, Model CP200, 16 channel portable two way radios. Channel Two was assigned as the common channel for this incident. The radios were used to relay information between the Incident Command Center, the Emergency Department personnel, and personnel tending to the patient. No problems were noted with the operation of the radios during the exercise.

Maintained on a wheeled cart kept in the Decontamination Shower Room were supplies consisting of barricade tape, cones, step off pads, tape, decontamination supplies, sterile water, wipes, plastic bags for radioactive waste, labels, markers, and protective clothing.

The cart was wheeled out of the Decontamination Room and was placed in an easily accessible location in the foyer of the ambulance receiving bay in to the Emergency Department. The Emergency Department personnel set up the Radiological Emergency Area using barricade tape and cones in accordance with procedures. A Hot Zone was established within the ambulance bay for receiving the patient and extended into the Decontamination Shower Room. A Warm Zone was set up within the Decontamination Shower Room adjacent to the Hot Zone and extended into the Emergency Department ambulance receiving entrance foyer. A Cold Zone was defined as any area outside of the established Hot and Warm Zones. A step off pad was located at the edge of the Warm Zone leading into the Cold Zone and a second step off pad was situated in the Cold Zone across the Warm/Cold Zone boundary adjacent to the step off pad in the Warm Zone. These were used as the exit point from the Hot and Warm Zones.

The Hospital Nuclear Medicine Technologist (NMT) had brought a Ludlum Model 14C survey meter with a Ludlum model 44-9 pancake probe. This was calibrated on December 21, 2009. The instrument was checked for operability using a one micro-Curie Cesium 137 check source which was attached to the instrument. An operability check range of readings (0.9 – 1.2 mR/hr) was listed on the calibration sticker. The instrument correctly responded (1.1 mR/hr) to the check source when checked and functioned properly throughout the drill.

The NMT also had his personal occupational permanent record dosimeter (PRD) when he arrived at the Emergency Department. The PRD was a Landauer Luxel Optically Stimulated Dosimeter dated September 1 – October 31, 2010. These are exchanged every two months. No other hospital staff had any dosimetry. This location is well outside of the Emergency Planning Zone and dosimetry is not required or demonstrated per the extent-of-play.

Instruments were brought to the medical center by the Illinois Emergency Management Agency (IEMA) Medical Radiation Technician (MRT) were in a Storm Case marked Hosp1. The survey instrument used by the IEMA MRT was a Ludlum 2241-3 digital scaler/rate meter with a Model 44-9 Pancake probe calibrated on December 7, 2009, with the next calibration due in December 2010. Headphones and two additional probes for the Ludlum 2241-3 included a Model 43-65 Alpha (frisker) and Model 4410 2x2 NaI (scintillator). The IEMA MRT checked the meter to ensure that batteries were installed. In addition, a Bicron Micro-R meter was included, which was calibrated on May 19, 2010, and due for calibration in May 2011.

Both instruments passed an operational battery test and a source response check. A source was

imbedded in the side of the carrying case used to transport the equipment. The source used was a 10uCi CS-137 Source. The operability check exposure rate and count rate were recorded on a label affixed on a side of the instrument (Ludlum 2241-3 was 20.2-33.8 kcpm and the Bicron Micro-R meter was .9-1.5mR/hr).

The IEMA MRT carried a red duffel bag that contained additional equipment such as personal dosimetry, and other support supplies which included disposable gloves, scrubs, hair covers, booties, plastic bags, scissors, face masks, masking tape, clipboards, lint roller, "swifter" mop, yellow "Caution" tape, pens, writing paper and IEMA forms (Reception Center Monitoring/Action Log Form [IEMA 267 (8/05)].

Also included in the red duffel bag was a personal dosimetry kit. The kit included a Dosimeter Corporation of America Model 622 Direct-Reading Dosimeter (DRD) with a range of 0-20 R, a permanent reading Landauer InLight Optically Stimulated Luminescent Dosimeter with an effective date of June 2010 – June 2012, a Radiation Exposure Record card with space to record user information, an instruction sheet describing use and precautions for ingesting potassium iodide (KI), and 14 doses of iOSAT KI by Ambex in 130 mg tablets individually sealed with an expiration date of June 2007. A printed card inside the kit advised the user that the KI was tested and the drug was found to be viable so the expiration date was extended until June 2011. A copy of the extension letter would have be kept in the command vehicle located at the reception center from which the IEMA MRT would be dispatched. A copy of the letter, which extended the expiration date to June 2011, was received by DHS/FEMA Region V. Hospital staff did not have any KI because this location is well outside of the Emergency Planning Zone.

During the setup of the patient receiving area, the NMT and the IEMA MRT measured the background readings. The measured background was 0.02 mR/hr or about 50 counts per minute. Both the NMT and the IEMA MRT knew the level to determine if contamination was present as was twice background.

All personnel tending to the patient were dressed in protective clothing. All personnel donned booties, lab coat, double gloves, hats, masks and face shields. These were all stored in containers on the cart maintained in the Decontamination Shower Room. The ambulance contacted the Charge Nurse to provide an update of the patient's medical condition, contamination readings and location of contamination. The Charge Nurse recorded the information and provided a briefing to the hospital staff prior to the arrival of the ambulance. The ambulance arrived in the

ambulance bay at 1345 hours.

At 1348 hours, the patient was transferred by gurney from the back of the ambulance to the area marked at the Hot Zone in the Ambulance Bay. Inside the Hot Zone, the Medical Center staff wheeled another gurney to Hot Zone boundary adjacent to the ambulance gurney. The ambulance staff provided an update of the patient's condition to the Medical Center staff. One of the ambulance crew members passed a "Reception Center Monitoring/Action Log Form" (which contained a body map showing the areas contaminated and the levels of contamination) to one of the Emergency Department nurses. The IEMA Representative monitored the form prior to the nurse taking possession to ensure it was not contaminated.

The Emergency Department doctor made an analysis of the patient to determine the extent of injuries. The injuries were determined not to be life threatening, so the patient was wheeled into the Decontamination Shower Room for monitoring and decontamination. The Emergency Department Doctor, in the Decontamination Shower Room continued monitoring the patient's conditions while the NMT began a radiological survey of the patient. The nurse that had obtained the Reception Center Monitoring/Action Log Form who was in the Cold Zone called out the areas in which contamination was previously detected. The Nuclear Medicine Technician verified the location and quantity of contamination. As areas of contamination were identified, other Emergency Department personnel began decontamination.

The initial survey by the NMT and IEMA MRT found two areas contaminated. There was 150 cpm on the back of the right hand, 3000 cpm on the right palm. The nurses cut off the patient's clothing taking care to roll the cut clothing inward to contain any contamination. The clothing was temporarily left in a rolled position tucked under the sides of the patient. The Physician examined the wounds on the patient and made a determination that decontamination could be performed prior to treatment. The patient was stable and the wounds were not life threatening. The medical team decontaminated the patient's right arm. The arm was decontaminated in two attempts (the right hand area measured 1700 cpm after the first decon, after the second decon, no detectable contamination). An absorbent pad was placed under the contaminated arm to absorb water to prevent water from spreading contamination when the wounds were cleaned. Sterile water was used to irrigate the abrasions and open wound. During decontamination, water drained from the decontamination gurney into a large contaminated waste holding container. The wounds were gently padded with 4x4 bandages to remove excess water and any contamination. Three absorbent pads were used during decontamination along with several 4x4

bandages. The small abrasion and the contamination on the hand were cleaned using 4x4 bandages as wipes. These were all disposed of as radioactive waste in the designated container.

Gloves were monitored for contamination after each activity and changed repeatedly during the entire demonstration. The gloves were removed carefully by rolling inside out to prevent spreading contamination and the gloves were placed in a container specified for radioactive waste.

At 1401 hours, a nasal swab was then taken to ensure there was no internal contamination. A sterile swab was removed from its protective wrapping. A nostril was swabbed. The swab was placed back into the tube it came from and sealed. A label was made and attached to the tube and the tube was placed into a plastic bag. The bag was monitored to determine if there was any activity on the sample. The readings were background. The bag was brought over to the edge of the RCA boundary and was placed into a bag being held open by a nurse on the clean side for later lab analysis. The transfer was performed to eliminate any chance of contamination. Gloves were monitored for contamination after each activity and changed repeatedly during the entire demonstration. The gloves were removed carefully by rolling inside out to prevent spreading contamination and the gloves were placed in a container specified for radioactive waste.

A second survey by the NMT and IEMA MRT was performed after the clothing was removed. Contamination of 1200 cpm was found on the wounds on the left palm and 300 cpm on the top of the left hand. The medical team decontaminated the patient's left arm. The arm was decontaminated in two attempts (the right hand area measured 800 cpm after the first decon, after the second decon, no detectable contamination). An absorbent pad was placed under the contaminated arm to absorb water to prevent water from spreading contamination when the wounds were cleaned. Sterile water was used to irrigate the abrasions and open wound. During decontamination, water drained from the decontamination gurney into a large contaminated waste holding container. The wounds were gently padded with 4x4 bandages to remove excess water and any contamination. Three absorbent pads were used during decontamination along with several 4x4 bandages. The small abrasion and the contamination on the hand were cleaned using 4x4 bandages as wipes. These were all disposed of as radioactive waste in the designated container.

A full body survey indicated that there was no detectable contamination found greater than the twice background on the front side of the patients body.

The patient was rolled over onto one side and the cut clothing and one of the sheets covering the gurney were rolled under the patient. The patient was rolled over the rolled material and the clothing and sheet were completely removed and disposed of in the radioactive waste container. The patient was again monitored and no contamination was detected.

As the patient was considered clean and medically stable, he was given instructions to get off the gurney. He received a clean gown to cover him and was told to move towards the buffer zone doorway and to get on a wheelchair. The patient stepped from the buffer zone floor covering holding his foot up while having it monitored, once cleared placed his foot down on the clean side. The patient then lifted the other foot and once cleared set the foot down on the clean side. The patient sat down in a wheel chair and was taken to an adjacent emergency room for a CT Scan.

Throughout the Hospital portion of the drill, monitoring of the patient was conducted in a low radiation background area. The patient was examined using a Ludlum 2241-3 survey instrument equipped with a pancake probe, speaker and set-able alarm. The monitoring techniques used were slow and methodical, with proper positioning of the probe for personnel monitoring. As monitoring occurred, contamination readings found on the patient were verbally given to the NMT, who then gave the information to the Buffer Zone Nurse, who recorded the information on a hospital form. The medical team was aware that contamination could be spread from the patient to them and the hospital. They were diligent about changing their gloves frequently and having the NMT monitor hands and equipment brought in contact with the patient. All clothing, sheets blankets and supplies used during treatment were properly disposed of in a container marked with a hazardous waste sign.

For demonstration purposes, the NMT, IEMA MRT, and nurse discussed doffing of clothing and walked through a survey of the nurse as she exited the REA. The nurse started out by removing the outer gloves on both hands, rolling the outside of the glove to the inside during removal and then putting the gloves into a hazmat waste container. The nurse removed her gown rolling the inside to the outside and put the gown in the radiation waste container. She removed her mask and hair cover and also disposed of them.

The NMT performed a slow and methodical full body survey with the probe held about one-half to one inch away from the survey area. This was the same technique used for all survey attempts

conducted during the drill. The probe was moved along the right shoulder, down the outside of the arm, around the hand, back up the inside of the arm, and then down the right side of the torso and along the right leg to the foot. Continuing on, the probe was moved along the inside contour of the legs, and then followed the left body contour from the foot to the head, and around the head to the starting point on the right shoulder. The head and body, front and back, were surveyed. All surveyed areas were determined to be clean.

The NMT surveyed the nurse's gloved hands and they were found clean. The nurse moved to the buffer zone doorway. While holding on to the doorframe, she removed one bootie, had the foot surveyed, and when it was determined to be clean, she stepped back into the clean side of the hospital onto the clean floor chuck. This same process was followed in removing the other bootie. The nurse removed her final pair of gloves and had her hands surveyed one last time. Once determined to be free from contamination she was released from the REA. The NMT followed the same procedures to clear and release the rest of the medical team from the REA.

The NMT stated that after medical personnel were cleared, they would survey the REA for contamination, paying attention to the door jam and used equipment (gurney, backboard, scissors, stethoscope, etc). A sweep of the floor, following a grid pattern would clear the REA. If contamination was found at any spot, a surface wipe would be done at the location and the area would be resurveyed. If an area could not be decontaminated, the REA would be closed off until more thorough decontamination efforts could be done. Radioactive waste would be double bagged and sealed. Bags would be labeled with information identifying the contents of the bag and level of contamination, if known.

All activities described in the demonstration criterion were conducted in accordance with the plan, procedures and extent-of-play agreement.

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

3.3.1.2 State of Illinois - Bloomington Fire Department - Medical Service-Transportation

Criterion 1.d.1:
Successfully demonstrated - this criterion narrative in contained in the Criterion 6.d.1 section.

Criterion 1.e.1:
Successfully demonstrated - this criterion narrative is contained in the Criterion 6.d.1 section.

Criterion 3.a.1:
Successfully demonstrated - this criterion narrative is contained in the Criterion 6.d.1 section.

Criterion 6.d.1:
As part of the Clinton Power Plant Radiological Emergency Preparedness Exercise, the State of Illinois demonstrated that the facility and offsite response organizations have the appropriate space, adequate resources, and trained personnel to provide transport, monitoring decontamination, and medical services to contaminated injured individuals. The Medical Services (MS-1) Drill was conducted on Tuesday, October 19, 2010 at the Order of St. Francis (OSF) St. Joseph Medical Center located at 2200 East Washington Street in Bloomington, Illinois.

In accordance with the extent-of-play agreement, personnel and an ambulance from the Bloomington Fire Department from Bloomington, Illinois, and two Illinois Emergency Management Agency (IEMA) Medical Radiation Technicians (MRT), participated in the MS-1 Drill.

The scenario for the MS-1 Drill was the Clinton Power Station had declared an Emergency Classification Level of a General Emergency. The emergency alert sirens sounded, the public was directed to evacuate the affected areas and to report to reception center (Horton Field House) in Bloomington, Illinois. The scenario is based on a Sheriff's Deputy who was assigned to a Traffic and Access Control Post on an evacuation route to maintain security and control traffic. While at the assigned location, the Deputy was struck by a vehicle. The vehicle was being driven by a distraught citizen who was evacuating from the Clinton Emergency Planning Zone and reporting to the Horton Field House. Radiation monitoring and if necessary, decontamination of evacuees is provided for at these facilities by staff from IEMA under the Illinois Plan for

Radiological Accidents (IPRA).

The IEMA MRT readied the monitoring/survey equipment that would be used during the drill. These actions occurred in an area adjacent to the Emergency Department at the OSF St. Joseph Medical Center and prior to the arrival of the victim.

Instruments were brought to the medical center by the IEMA MRT were in a Storm Case marked Hosp1. The survey instrument used by the IEMA MRT was a Ludlum 2241-3 digital scaler/rate meter with a Model 44-9 Pancake probe calibrated on December 7, 2009, with the next calibration due on December 2010. Headphones and two additional probes for the Ludlum 2241-3 included a Model 43-65 Alpha (frisker) and Model 44-10 2x2 NaI (scintillator). The IEMA MRT checked the meter to ensure that batteries were installed. In addition, a Bicron Micro-R meter was included, which was calibrated on August 24, 2010, and due for calibration on August 2011.

Both instruments passed an operational battery test and a source response check. A source was imbedded in the side of the carrying case used to transport the equipment. The source used was a 10 uCi CS-137 Source. The operability check exposure rate and count rate were recorded on a label affixed on a side of the instrument (Ludlum 2241-3 was 20.2-33.8 cpm and the Bicron Micro-R meter was .9-1.5mR/hr).

The IEMA MRT carried a red duffel bag that contained additional equipment such as personal dosimetry, and other support supplies which included disposable gloves, scrubs, hair covers, booties, plastic bags, scissors, face masks, masking tape, clipboards, lint roller, "swifter" mop, yellow "Caution" tape, pens, writing paper and IEMA forms (Reception Center Monitoring/Action Log Form [IEMA 267 (8/05)].

Also included in the red duffel bag was a personal dosimetry kit. The kit included a Dosimeter Corporation of America Model 622 Direct-Reading Dosimeter (DRD) with a range of 0-20 R, a permanent reading Landauer InLight Optically Stimulated Luminescent Dosimeter with an effective date of June 2010 – June 2012, a Radiation Exposure Record card with space to record user information, an instruction sheet describing use and precautions for ingesting potassium iodide (KI), and 14 doses of iOSAT KI by Ambex in 130 mg tablets individually sealed. The extension of the shelf life of the KI was effective through June 2011 per a Memorandum from IEMA dated July 8, 2010. A copy of the extension letter would be kept in the command vehicle

located at the reception center from which the IEMA MRT would be dispatched.

The IEMA MRT explained that the IEMA protocol for the establishment of a reception center included taking background readings in areas used for monitoring and decontaminating evacuees prior to the set up of these areas. Reception center readings would be used for to determine patient treatment. For drill purposes, controller inject messages were used to determine these readings.

The drill commenced at 1312 hours, when the Sheriff's Deputy entered the reception center (simulated) went through a portal monitor (simulated) and set off the alarms on the monitor. The Deputy was holding his left arm, complaining of left arm and left hip area pain. The Deputy was interviewed by the IEMA MRT and determined to have been struck by a vehicle which was leaving from the EPZ.

The IEMA MRT determined that an ambulance was needed to transport the Deputy to the medical center for treatment. A controller inject simulated a call to the Bloomington Fire Department Central Dispatch. An ambulance was requested to the reception center to transport the Deputy to the medical center.

While waiting for the arrival of the ambulance, the IEMA MRT monitored the Deputy using the Ludlum 2241-3 digital scaler/rate meter with pancake probe. The monitoring techniques used were slow and methodical, with proper positioning of the probe for personnel monitoring. The IEMA MRT wore booties, two pairs of gloves and personal dosimetry.

Contamination was noted at various locations on the Deputy and were reported by controller injects as the IEMA MRT performed a radiological survey. Reading were as follows: right palm 3000 counts per minute (cpm), right knee 1500 cpm, right pants cuff 2000 cpm, right foot 3000 cpm, left palm 2000 cpm, left knee 1500 cpm, left hip 800 cpm, and left pants cuff 2000 cpm.

Contamination information was documented on a Reception Center Monitoring/Action Log Form.

At 1321 hours, the ambulance crew from the Bloomington Fire Department Ambulance arrived at the reception center. The ambulance was equipped with a Motorola two-way radio system, which connected the ambulance crew to the 911 center and the medical center. A radio system of

16 talk groups was available for use on the two-way radios that operated on the Medical Emergency Radio Communications of Illinois (MERCI) network. The ambulance crew had a regional medical channel for communication and cellular telephones that could be used as back-up communication.

The IEMA MRT gave the Paramedics the patient status and information gathered prior to the ambulance arrival. The Paramedics were again informed that they would be treating and transporting a contaminated injured patient. The Paramedics put on two pairs of disposable gloves and took caution in their approach to the victim.

The Paramedic assessed the patient's (Deputy) level of consciousness, level of pain and vital signs. The patient was in a seated position and advised that he was unable to stand up unassisted without increased pain. The vital signs obtained indicated the patient was alert and oriented, pulse 110, , respirations 16, Blood Pressure (BP) 140/100, Pupils Equal and Reactive to Light (PERL), and the skin normal. The patient stated he was allergic to vicodin and pencillin.

During the assessment and initial treatment of the patient, the Paramedics and IEMA MRT were aware of the areas where they came in contact with the patient. The blood pressure cuff was disposed of in a plastic bag identified for contaminated materials along with the gloves that were changed. Frequent checks for contamination on the gloves and areas in close proximity to the patient were done by the IEMA MRT.

The patient was able to remove his shoes upon being assisted to a standing position. The IEMA MRT put booties on the patient's feet and gloves on both hands. The Paramedics readied a gurney by draping it with two sheets. The patient was assisted to the gurney, laid down, and was secured with the gurney straps.

At 1332 hours, the Paramedics prepared to transport the patient to the medical center. The Paramedic in the back of the ambulance provided medical care and gathered personal information from the patient, which was communicated to the medical center. At 1340 hours, the Paramedic communicated the patient's condition with the OSF St. Joseph's Medical Center Emergency Department staff via cellular telephone. The vital signs were the patient was alert and oriented, pulse 110, respirations 14, BP 130/100, PERL, and the skin normal. The Paramedic informed the medical center that the patient was allergic to vicodin and penicillin. This was done to keep the medical channels open due to real time events occurring at the medical center.

Patient medical treatment was the priority. The ambulance crew departed the scene at approximately 1340 hours with an estimated arrival time of five minutes.

At 1345 hours, the Bloomington Fire Department Ambulance Service arrived at the OSF St. Joseph Medical Center. The medical center Emergency Department Staff and the IEMA MRT assigned to the medical center was standing by to meet the ambulance in the receiving area. The ambulance pulled into the receiving area and the patient was removed from the ambulance. Medical center personnel were briefed on the patient's condition by the Paramedics. The patient was transferred from the ambulance gurney to the medical center gurney using proper lifting and communication techniques. The ambulance IEMA MRT provided the patient's contamination information, which was recorded earlier on a Reception Center Monitoring/Action Log Form, to the OSF St. Joseph Medical Center and IEMA MRT assigned to the medical center.

After the patient was transferred to medical center personnel, the Paramedics, equipment, and the ambulance were surveyed for contamination by the IEMA MRT.

The Paramedics and IEMA MRT displayed a good awareness for the location of potential contamination. Also surveyed were locations touched by the EMTs during treatment and monitoring of the patient during transport to the medical center.

While being monitored, one of the Paramedics put his foot back down on the ground where possible contamination was. The Paramedic was re-surveyed, took his boots off, one at a time, monitored clean, and the boots put into a contaminated materials bag. Discussion indicated the bag would be left with hospital personnel for disposal with other generated contaminated waste.

The IEMA MRT discussed vehicle monitoring to include all door handles, steps leading into the vehicle, steering wheel, wheels and wheel wells, engine intake, radio, etc. A swipe would be taken from any area found to be contaminated. Areas that could be decontaminated with simple cleaning would be cleaned at the medical center which would allow the ambulance and crew to be released back into service.

The EMTs were advised by the IEMA MRT to go to the Emergency Worker Decontamination facility or to the Horton Field House Reception Center for a final monitoring after their mission ended. An IEMA MRT would monitor the ambulance receiving area to ensure that the area was clean. Through interview, the Paramedics stated that they knew what locations are designated as

monitoring and decontamination facilities in the local area. They would report to one of these locations, or they would call their dispatch center and be told where to go for decontamination in the event they needed this service. They were familiar with the hazards of radiation contamination and the precautions to take to avoid the spread of contamination. Through interview, the ambulance crew demonstrated that they were aware of the primary route to the OSF St. Joseph Medical Center and other medical centers in the area that could treat radiological exposed patients.

All activities described in the demonstration criterion were carried out in accordance with the plan, procedures and extent-of-play agreement.

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 Illinois.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2010-10-19, SITE: Clinton Power Station, IL

LOCATION	EVALUATOR	AGENCY
State of Illinois - OSF-St. Joseph Medical Center - Medical Service-Facility	Edward Diaz	DHS/FEMA
State of Illinois - Bloomington Fire Department - Medical Service-Transportation	*Deborah Fulk	DHS/FEMA
* Team Leader		

APPENDIX B: EXERCISE PLAN

OFFSITE MEDICAL DRILL
EXTENT of PLAY
OSF ST. JOSEPH'S MEDICAL CENTER
Bloomington, Illinois

October 19, 2010
Start Time 1:00 p.m.

EXTENT OF PLAY AGREEMENT FOR THE MEDICAL SERVICES EXERCISE October 19, 2010

Location: OSF St. Joseph's Medical Center
Transportation Provider: Bloomington Fire Department
2200 East Washington
Bloomington, IL 61701-4323

Participants:
Victim (volunteer)
Lead Controller: (IEMA)
IEMA ER Monitor: Don Eastep
IEMA Ambulance Monitor: Rick Zuffa
IEMA Hospital Controller: Joni Estabrook
IEMA Ambulance Controller: Kathy Allen

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

EVALUATION AREA 1 - EMERGENCY OPERATIONS MANAGEMENT

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.

The Bloomington Fire Department will use 2-way radios to communicate with OSF St. Joseph's Medical Center. Other communication systems that can 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's Medical Center will adequately demonstrate the ability to support operations, with adequate resources. The availability of dosimetry and KI for hospital personnel will **not** be demonstrated during this exercise, however IEMA staff will be issued dosimetry and KI as field team members.

EVALUATION AREA 3 - PROTECTIVE ACTION IMPLEMENTATION

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and 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.

The use of dosimetry and KI will not be demonstrated by hospital staff. IEMA staff will demonstrate appropriate use of dosimetry and KI.

For purposes of this exercise, if there is no medical need to bring equipment into and out of the treatment room, nasal swabs will be taken (swabs to be taken outside the nose to simulate taking swabs inside the nose) and passed out of the room to demonstrate movement of equipment and supplies into and out of the controlled area.

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.

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 Department will demonstrate the capability to transport contaminated, injured individuals to OSF St. Joseph's Medical Center in Bloomington. The ambulance crew will pick up a contaminated injured patient near the grounds of OSF St. Joseph's Medical Center (simulating pick-up of a patient from Horton Field House, a designated Reception Center). The ambulance crew will be met by IEMA staff that will perform initial radiation monitoring, and will provide information regarding contamination levels on the patient. Bloomington Fire Department will utilize universal precautions and good housekeeping practices to minimize the spread of contamination, and will focus on treating the patient's medical condition.

Bloomington Fire Department will call in the information regarding the patient to OSF St. Joseph's Medical Center in Bloomington so they can prepare for receipt of a contaminated patient. IEMA personnel will accompany the patient to the hospital along with the ambulance, bringing instrumentation to provide radiation readings and guidance to the hospital.

OSF St. Joseph's Medical Center 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. IEMA personnel will discuss the need to take additional samples for further radiological analysis. Hospital personnel will demonstrate their knowledge of who to call beyond IEMA for assistance in Radiological Accidents, e.g., REAC/TS.

For purposes of this exercise, another IEMA staff member will be dispatched to OSF St. Joseph's Medical Center with radiation detection and measurement equipment in advance of the ambulance arriving. The purpose of having two separate individuals for this exercise is to facilitate monitoring the ambulance and ambulance personnel so they are not kept out of service for an extended period of time.

OSF St. Joseph's Medical Center also has a Nuclear Medicine Department, and Nuclear Medicine personnel are available to assist with radiation surveys and monitoring.

The drill will conclude with the hospital representative and IEMA personnel 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.

Following the conclusion of the drill, a short critique will be held.

APPENDIX C: SUMMARY AND INJECTS

OFFSITE MEDICAL DRILL
(Summary and Injects)
OSF ST. JOSEPH'S MEDICAL CENTER
BLOOMINGTON, IL

October 19, 2010
Start time: 1:00 p.m.

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 IEMA staff.
6. Demonstrate proper use of radiation detectors.

IEMA PLAYERS AND CONTROLLERS

Injured Victim	TBD
IEMA Rad Monitor (Amb.)	Rick Zuffa
IEMA Rad Monitor (Hosp.)	Don Eastep
IEMA Ambulance Controller	Kathy Allen
IEMA Hospital Controller	Joni Estabrook
Lead Controller	IEMA

EXTENT OF PLAY FOR OSF ST. JOSEPH'S MEDICAL CENTER MEDICAL DRILL

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

NOTE: Evaluators should be aware that while hospital personnel are encouraged to assume responsibility for monitoring, decontamination, and contamination control activities within their facility to the extent they are able to do so, they are advised to take direction from Illinois Emergency Management Agency (IEMA) personnel regarding these issues. The purpose of providing IEMA support is to ensure appropriate radiation protection protocols are observed.

Extent of Play:
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 County Deputy who was assigned to the Illinois Valley Community College for traffic control and security. The deputy was at his assigned work location when he was grazed by a vehicle. The vehicle was being driven by a distraught citizen who was evacuating from the Clinton EPZ and reporting to the Horton Field House. [Radiation monitoring and if necessary, decontamination of evacuees is provided for at these facilities by staff from IEMA under the Illinois Plan for Radiological Accidents (IPRA).]

NOTE: Evaluators should be aware that the dosimetry worn by the county deputy is issued in accordance with IPRA procedures and will not be an evaluated portion of this drill. Dosimetry evaluation will occur independent from the MS1 evaluation. In addition, traffic control and access will not be demonstrated during this exercise and this example was given to support exercise intent.

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. IEMA 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 IEMA medical radiation technician will be available to conduct and/or supervise radiation monitoring and contamination control at the simulated reception center and during patient transport.

4. An IEMA medical radiation technician and representative from the hospital 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 IEMA medical radiation technician 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 used by hospital personnel will be identical to that used for a chemical or biological agent in accordance with hospital protocol.

7. Upon arriving at the hospital, the supervision of contamination control and medical radiation technician and activities remain the responsibility of IEMA. Hospital nuclear medicine personnel that are trained and properly equipped to address monitoring functions will assist to the extent necessary with monitoring and contamination control activities.

8. 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. IEMA/Nuclear medicine personnel will survey the hospital 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.

9. The hospital may contact REAC/TS to determine the appropriate samples needed to assess internal contamination.

10. 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.

11. 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.

12. 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.

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

NARRATIVE SUMMARY FOR OSF ST. JOSEPH'S MEDICAL CENTER MEDICAL DRILL

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. reception center located in Oglesby, Illinois. Radiation monitoring and, if necessary, decontamination, of evacuees is provided for at these facilities by staff from IEMA under the Illinois Plant for Radiological Accidents (IPRA). A county deputy is maintaining security and controlling traffic at the Horton Field House when he is struck by a vehicle driven by an evacuee. The deputy is **not** severely injured, however but is in quite a bit of pain and can no longer work. He calls for back up to replace him and self dispatches to the reception center for monitoring and medical assistance. As the IEMA staff monitor the emergency responder they discover that he is injured as well as contaminated having been in the EPZ. IEMA monitors the deputy for contamination and the Reception Center Supervisor calls 911.

The deputy is kept comfortable while waiting for the ambulance to arrive. Decontamination is determinant on ambulance protocols and injury the patient presents. The reception center and portal monitor for the purpose of the scenario will be simulated. For purposes of the drill, a location close to the hospital will be used to represent the actual reception center. Bloomington Fire Department personnel will demonstrate patient loading and transport. Bloomington Fire Department personnel will communicate with the receiving hospital. An IEMA medical radiation technician will assist EMS personnel in patient transport. Patient contact dose rates are less than 2 mR/hr. Contamination levels will be less than 5,000 cpm, which means EMS personnel are exempt from direct read dosimeters and LDs in accordance with IEMA procedures for personnel monitoring.

At the hospital the IEMA monitor will assist hospital or EMS staff in monitoring and decontamination efforts. In addition, a member of the hospital staff will assist in monitoring EMS and ambulance personnel. For purposes of the evaluated exercise, IEMA will provide two individuals to perform monitoring: one will monitor the ambulance, and the other will perform monitoring in the hospital. As noted above, hospital personnel and hospital staff will not be issued personnel monitoring devices as radiation levels are below those requiring dosimetry.

At the hospital, medical personnel will utilize universal precautions and good housekeeping practices to ensure contamination from the patient is controlled and not spread. Simple decontamination efforts will be demonstrated after the patient has been medically stabilized. IEMA personnel will discuss the need to take additional samples for further radiological analysis. Hospital personnel will demonstrate their knowledge of who to call beyond IEMA for assistance in Radiological Accidents, e.g., REAC/TS.

For purposes of the exercise, if there is no medical need to bring equipment into and out of the treatment room, nasal swabs will be taken (swabs to be taken outside the nose to simulate taking swabs inside the nose) and passed out of the room to demonstrate movement of equipment and supplies into and out of the controlled area.

The drill will conclude with the hospital representative and IEMA personnel supervising the removal of protective clothing and survey of the emergency room and hospital personnel. IEMA will also advise on the proper procedure for release or disposal of contaminated material. Following the conclusion of the drill, a short critique will be held.

TIME: Pre t = 0

Victim Instructions

MESSAGE FORM

() Controller (X) Player ( ) Contingency

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

Message for: Victim

MESSAGE

While directing and controlling traffic in the EPZ during the Clinton evacuation you are struck by a motorist attempting to evacuate. You are **not** severely injured, however you can no longer perform you duty and call for replacement because you are in need of medical attention.

Your superior officer tells you to report to the Horton Field House for monitoring if you are able drive. You are able to report to the reception center and are found to be contaminated. However, IEMA staff insists that you seek medical attention right away and dispatch an ambulance. Your clothing has been removed to try to prevent exposure and contamination of ambulance and the hospital.

You tell ambulance staff that your hip and hand are in pain but can still move your hand and walk, but not without pain. The vehicle did not knock you down, nor did you hit your head.

You are in pain – 7 out of 10, but are having difficulty moving your hand and your hip is sore.

You are allergic to Penicillin and vicodin

If asked you have no previous medical history.

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's Medical Center Medical Drill

Message for: IEMA and Hospital Personnel

MESSAGE

Initial Conditions:
At the reception center, the IEMA Staff performed a radiological survey of the deputy and discovered contamination. The preliminary survey identified general contamination on right palm, left palm, left injured hand, right pant knee, the left pant knee, both pant cuffs and bottom and toes of shoes. The deputy began to feel pain and stiffness in the hand and hip where he was struck by the vehicle.

Contamination Levels:	First Decon	Second Decon
Right palm 3000 cpm		
Right pant knee 1500 cpm	*	
Left palm 2000 cpm		
Left pant knee 1500 cpm	*	
Left injured hand 800 cpm		
Pant cuffs 2000 cpm	*	
Shoe bottoms/toes 3000 cpm	*	
Hip 800 cpm		

*Pant/shoes should be removed and bagged.
**Contamination would likely be spread from hand to injured arm either on patient's skin or clothing.

Current Medical Conditions:
There is bruising and slight swelling of the left arm and hip area.

Medical Stats (for Controller inject)
On next page.
Note: See last page for contamination locations and levels.

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

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:

Patient pain is 7 of 10 and seems to be worsening.

	EMS Arrival on Scene	*Enroute to Hospital*	*In REA*	*After Treatment*
Level of consciousness:	Alert & Oriented X3	Alert & Oriented X3	Alert & Oriented X3	Alert & Oriented X3
Respirations:	16non labored	14	14	13
Pulse:	110	110	75	65
Skin:	Normal	Normal	Normal	Normal
Pupils:	PERL	PERL	PERL	PERL
Blood Pressure:	140/100	130/100	130/85	120/75
Visual:	Slight swelling and bruising of right are and hip	Slight swelling and bruising of right are and hip.	Slight swelling and bruising of right are and hip.	Slight swelling and bruising of right are and hip

Note:
ECG Monitor – Sinus tachycardia corresponding to pulse.
Pulse Oximeter 97% on room air.

- Patient allergic to Penicillin and Vicodin

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's Medical Center Drill

Message for: IEMA 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.

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

FOR CONTROLLERS USE ONLY

Issue the message only if ambulance departure from reception center was to occur after 0120. Realistically it would take 20 minutes after the initial call for the ambulance to respond and depart with the patient.

TIME: After patient arrival at hospital

MESSAGE: Decontamination Activities

MESSAGE FORM

(X) Controller () Player ( ) Contingency

Drill/Exercise Type: OSF St. Joseph's 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, forehead at hairline, right knee, left knee and on both pant cuffs and bottom and toes of shoes.

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

TIME: After patient arrival at hospital

MESSAGE: Decontamination Activities

MESSAGE FORM

(X) Controller () Player ( ) Contingency

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

Message for: IEMA RAD Controller From: _____

MESSAGE

Decontamination efforts are as follows:

Once clothing is carefully removed, all outer contamination is removed. **Bagged clothing reads 1300 cpm.**

The first attempt will not remove all contamination from the right and left palm. After decon the hands will show readings but not twice background. The injured arm will also require multiple decon attempts, reading 800 cpm after the first attempt and slightly above background on the second decon attempt. The contamination levels and locations may be adjusted accordingly.

The bruise and pain in the arm should be treated by hospital personnel.

Contamination Levels:	**First Decon**	**Second Decon**
Right palm 3000 cpm	1700 cpm	20 cpm
Right pant knee 1500 cpm	*	
Left palm 1200 cpm	1000 cpm	40 cpm
Left pant knee 1500 cpm	*	
Left injured hand 800 cpm	600 cpm	20 cpm
Pant cuffs 2000 cpm	*	
Shoe bottoms/toes 3000 cpm	*	
Hip Pants 800 cpm	*	

*Pants and shoes should be removed and bagged.
**Contamination would likely be spread from hand to injured arm either on patient's skin or clothing.

Note: Controllers may adjust levels based on player actions.

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