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FEMA

JUN 26 2013

NRC Headquarters' Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

To Whom It May Concern:

Enclosed is the After Action Report for the Beaver Valley Power Station (BVPS) Washington Hospital MS-1 Drill that was evaluated on March 21, 2013.

There were no "Deficiencies" or "Areas Requiring Corrective Action (ARCA)" identified during the drill.

Based on the review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate and there is reasonable assurance they can be implemented, as demonstrated during the Beaver Valley Power Station (BVPS) Washington Hospital 2013 MS-1 Drill.

If you have any questions, please contact John Price at (215) 931-5570.

Sincerely,

MaryAnn Tierney
Regional Administrator

Enclosure

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NRR

Beaver Valley Power Station

After Action Report/ Improvement Plan

Drill Date - March 21, 2013

Radiological Emergency Preparedness (REP) Program

FEMA

Published June 10, 2013

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Beaver Valley Power Station
After Action Report/Improvement Plan

Published June 10, 2013

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EXECUTIVE SUMMARY

On March 21, 2013, the Federal Emergency Management Agency (FEMA), Region III, conducted a Medical Services (MS-1) Drill in relation to the Beaver Valley Power Station (BVPS). The purpose of the drill was to assess the level of State and local preparedness in responding to a radiological medical emergency. This drill was held in accordance with FEMA's policies and guidance concerning the exercise of State and local Radiological Emergency Preparedness Response Plans (RERP).

The most recent evaluated Medical Services Drill at this site was conducted on November 2, 2011.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania, the risk jurisdiction of Beaver County, the support jurisdiction of Washington County, as well as the Washington Hospital and the Washington Ambulance and Chair, who participated in this drill.

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

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies, Areas Requiring Corrective Action (ARCAs), or Planning Issues identified as a result of this drill. Furthermore, there were no Prior Issues to be resolved as a result of previous drills.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Beaver Valley Power Station

Type of Exercise
Drill

Exercise Date
March 21, 2013

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 Beaver Valley Power Station drill:

State Jurisdictions
- Pennsylvania Emergency Management Agency

Risk Jurisdictions
- Beaver County Emergency Management Agency

Support Jurisdictions

Washington County Haz Mat
Washington Hospital
Washington Ambulance and Chair

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On March 21, 2013 a Medical Services Drill was facilitated in relation to the Beaver Valley Power Station (BVPS) by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Region III, Radiological Emergency Preparedness Program (REPP). The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. The drill was held in accordance with DHS's policies and guidance concerning the exercise of State and local Radiological Emergency Response Plans (RERPs) and procedures. The most recent previous FEMA evaluated Medical Services Drill for this site in Pennsylvania was conducted on November 2, 2011.

FEMA Region III wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania, the risk jurisdiction of Beaver County, the support jurisdiction of Washington County, Washington Hospital, Washington Ambulance and Chair and Washington County Haz Mat Team who participated in this drill.

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

EMERGENCY PLANNING ZONE DESCRIPTION:

BVPS is located in western Pennsylvania on the southern bank of the Ohio River in Beaver County, Pennsylvania. The site is located near Shippingport Borough, about 1.5 miles from Midland, Pennsylvania, on 501 acres of fairly level terrain owned by the First Energy Nuclear Operating Company (FENOC). The latitude for the site is 40°37'18" north; the longitude is 80°26'02" west. Two pressurized water reactors are located on the 17 acres of the parcel occupied by the power station. The operating licenses for the facility were granted in July 1976 (Unit 1) and August 1987 (Unit 2); commercial operations began at the site during October 1976 (Unit 1) and November 1987 (Unit 2). Unit 1 generates an output of 954 megawatts (MW); the Unit 2 output is 978 MW. One hundred and twenty sirens cover the plume EPZ; eighty five of the sirens are in Pennsylvania and twelve sirens are in West Virginia.

Steep slopes that contributed to the development of river mill towns, where most of the industry and residences are located, characterize the general topography of the region. The region is part of the large industrial complex centered around Pittsburgh, Pennsylvania. The terrain rises from the Ohio River to a maximum elevation of 1,160 feet above mean sea level (MSL). Drainage is predominantly toward the river. The soils in the area are made up of alluvial sands and gravel. The bedrock geology consists of sedimentary formations composed of shale and sandstone. No faults are located under or near the facility. The Ohio River is about 664 feet above MSL, and the plant grade is 735 feet above MSL.

The climate is a humid continental type. The average annual temperature for the area is about 50°F. Annual precipitation is approximately 36 inches. The area around the plant is mostly agricultural or undeveloped. The nearest community is Shippingport Borough, Pennsylvania, which is the parent borough for the site and has a population of 237. The nearest major population center of more than 25,000 people is Pittsburgh, which has a population of 305,704 and lies 22 miles to the southeast. The maximum population distribution, including residents and transients, is 114,514 in the 10-mile EPZ.

Four major industries employ a total of 8,000 persons within 10 miles of the plant. Two small airfields (Beaver County and Herron Airport) are also in the 10 mile EPZ. Runways at both airports are oriented so that the extensions do not pass over the plant. No major thoroughfares exist in the immediate vicinity. The main line of the Conrail Railroad runs parallel to the plant along the north bank of the Ohio River.

2.2 Exercise Objectives, Capabilities and Activities

The objective of the Beaver Valley Power Station/Washington Hospital Medical Services (MS-1) Drill was to demonstrate that the response organizations have the personnel, equipment, training, and knowledge to effectively assess the condition of a potentially radioactively contaminated patient, protect against cross contamination, transport, and transfer the patient to a hospital where the patient can then be decontaminated and treated. The hospital personnel are responsible for preparing a receiving and treatment area, operating radiological detection equipment, and implementing proper emergency worker protective procedures.

All activities were evaluated in accordance with current FEMA directives and guidance and were performed in accordance with current hospital plans and procedures.

2.3 Scenario Summary

The exercise scenario for this Medical Services Drill consisted of simulated notifications of escalating emergency classification levels at Beaver Valley Power Station from Site Area Emergency to General Emergency. Subsequent to being notified of the General Emergency, the 911 Center informed the Hospital that an incident had occurred at a vehicle decontamination center, resulting in the injury and possible radiological contamination of an emergency worker. The Hospital implemented its plan to prepare a Radiation Emergency Area to receive and treat the patient and activated its radiation emergency medical team.

The patient was injured in a fall that resulted in a possible right wrist fracture. The patient's right hand area was also abraded, bruised and swollen. Detectable radioactive contamination was found on the right palm and right and left knee.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Drill Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the March 21, 2013, Medical Services Radiological Emergency Preparedness (REP) Exercise. The exercise was conducted to demonstrate the ability of the Offsite Response Organizations to respond to a potentially radiologically contaminated injured person associated with the Beaver Valley Power Station.

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

3.2 Summary Results of Drill Evaluation

The Beaver Valley Power Station 2013 Medical Services Drill evaluation included two (2) participating locations. Two evaluators provided analyses of six (6) Exercise Criteria. These analyses resulted in a determination that all criteria were successfully demonstrated and there were no Deficiencies, Areas Requiring Corrective Action, or Planning Issues.

Table 3.1 - Summary of Drill Evaluation

DATE: 2013-03-21 SITE: Beaver Valley Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		WaCo WH	WaCo WAC
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
Equipment and Supplies to Support Operations	1e1	M	M
Protective Action Decision Making			
Emergency Worker Exposure Control	2a1		
Dose Assessment & PARs & PADs for the Emergency Event	2b1		
Dose Assessment & PARs & PADs for the Emergency Event	2b2		
PADs for disabilities & access/functional needs people	2c1		
Radiological Assessment & Decision-making for Ingestion Pathway	2d1		
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1		
Protective Action Implementation			
Implementation of Emergency Worker Exposure Control	3a1	M	M
Implementation of KI PAD for Institutionalized Individuals/Public	3b1		
Implementation of PADs for disabilities & access/functional needs people	3c1		
Implementation of PADs for Schools	3c2		
Implementation of Traffic & Access Control	3d1		
Impediments to Evacuation	3d2		
Availability & use of Commodity & Resource Information	3e1		
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2		
Implementation of Relocation/Reentry/Return Decisions	3f1		
Field Measurement and Analysis			
RESERVED	4a1		
Field Team Management	4a2		
Plume Phase Field Measurement, Handling, & Analyses	4a3		
Post Plume Phase Field Measurements & Sampling	4b1		
Laboratory Operations	4c1		
Emergency Notification and Public Info			
Activation of the Prompt Alert & Notification System	5a1		
RESERVED	5a2		
Activation of the Back-up ANS	5a3		
Activation of the Exception Area ANS	5a4		
Emergency Information & Instructions for the Public/Media	5b1		
Support Operations/Facilities			
Monitoring, Decontamination, & Registration of Evacuees	6a1		
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1		
Temporary Care of Evacuees	6c1		
Transportation/Treatment of Contaminated Injured Individuals	6d1	M	M

3.3 Criteria Evaluation Summaries

3.3.1 Support Jurisdictions

3.3.1.1 Washington County, Washington Hospital

Criterion 1.e.1:
Washington Hospital successfully demonstrated that they have necessary equipment and supplies required to support treatment and decontamination of radiological contaminated patients during the Washington Hospital Medical Services (MS-1) Drill for Beaver Valley Power Station conducted on March 21, 2013.

The entrance area was covered with paper sheets. The ambulance arrived at the Emergency Room at 0900. The Hospital Emergency Room Doctor, paramedic, nurses, and the Nuclear Medicine technician met the ambulance. They were dressed in plastic aprons, shoe covers, head covers, face shields, and gloves.

There were two (2) survey instruments, Ludlum, Model 14Cs with an expiration date of October 12, 2013, equipped with 44-9 pancake probes. The Nuclear Medicine Department technician demonstrated the use of the check source to check the operability of the instruments. He also demonstrated the charging and zeroing via a CDV-750 of the DRDs. The Permanent Record Dosimeters (Landauer, LUXEL models) were simulated by issuance of the card marked as a PRD. The Direct Reading Dosimeters (Arrow Tech, model 730s) were hung in locations in the emergency receiving area on either side of the room (leak rate tested within spec) and read as directed by a nurse following the procedure from an adjacent station.

Since the Hospital is located well beyond the 10-mile EPZ, the use of Potassium Iodide tablets was neither required nor demonstrated. Paper sheeting was used to cover the floor of the emergency receiving area and the entrance leading to this area. The area was set-up to keep decontamination strictly controlled with adequate coverings for all medical equipment. The facility took about 15 minutes to set up. The Radiation Emergency Area (REA) had appropriate excerpts of procedures posted on the walls of the facility. Lockers contained all of the necessary supplies, including meters, plastic suits, gloves, masks, and swabs. This facility was adequate for the treatment of an injured and contaminated patient.

All activities were based on the plans and procedures and completed as they would have been in an actual emergency, except as noted in the Extent of Play agreement.

Criterion 3.a.1:

Washington Hospital successfully demonstrated the implementation of emergency worker exposure control during the Washington Hospital Medical Services (MS-1) Drill for Beaver Valley Power Station on March 21, 2013.

The Washington Hospital is located outside the 10-mile Emergency Planning Zone. The Hospital provides medical services for evacuees from the Emergency Worker Decontamination Station, Reception Centers and Congregate Care Centers. The Nuclear Medicine Department at the Hospital is responsible for providing personnel dosimetry to the emergency workers at the Hospital and for the radiological monitoring of injured and/or contaminated patients.

There were two (2) survey instruments, Ludlum, Model 14Cs with an expiration date of 10-12-2013, equipped with 44-9 pancake probes. The Nuclear Medicine Department technician demonstrated the use of the check source to check the operability of the instruments. He also demonstrated the charging and zeroing via a CDV-750 of the DRDs. The Permanent Record Dosimeters (Landauer, LUXEL models) were simulated by issuance of the card marked as a PRD. The Direct Reading Dosimeters (Arrow Tech, model 730s) were hung in locations in the emergency receiving area on either side of the room (leak rate tested within spec) and read as directed by a nurse following the procedure from an adjacent station.

Since the Hospital is located well beyond the 10-mile EPZ, the use of Potassium Iodide tablets was neither required nor demonstrated. Paper sheeting was used to cover the floor of the emergency receiving area and the entrance leading to this area. The area was set-up to keep decontamination strictly controlled with adequate coverings for all medical equipment. The facility took about 15 minutes to set up. The REA had appropriate excerpts of procedures posted on the walls of the facility. Lockers contained all of the necessary supplies, including meters, plastic suits, gloves, masks, and swabs. This facility was adequate for the treatment of an injured and contaminated patient.

All activities were based on the plans and procedures and completed as they would have been in an actual emergency, except as noted in the Extent of Play agreement.

Criterion 6.d.1:

Washington Hospital successfully demonstrated having the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals during the Washington Hospital Medical Services (MS-1) Drill for Beaver Valley Power Station on March 21, 2013.

At 0800, the Washington Hospital Emergency Room was notified that the Beaver Valley Power Station had declared a Site Area Emergency. The Emergency Room Charge Nurse notified the Emergency Room Doctor on duty, who in turn notified the Hospital Administrator. The Administrator ordered the switch board to notify the Hospital Emergency Incident Command and response members about an emergency at the Beaver Valley Power Station. The Emergency Room staff was sufficient to handle an emergency situation. However, all committee members were placed on the stand-by.

At 0811, the Washington Hospital was notified about a General Emergency Declaration. At 0829, the Hospital was notified about the injured and potentially contaminated patient, and ambulance responding to the same. Subsequently, the Nuclear Medicine Department was requested to send the technicians to the Emergency Room. At about 0835, the Maintenance Department assembled about a half dozen staff that began the set up of the area in the front of the Emergency Room as the patient receiving and decontamination area. The Security Department set up a security point at the entrance to the emergency entry driveway of the Hospital. The entrance area was covered with paper sheets. The ambulance arrived at the Emergency Room at 0900.

The Hospital Emergency Room Doctor, paramedic, nurses, and the Nuclear Medicine technician met the ambulance. They were dressed in plastic aprons, shoe covers, head covers, face shields, and gloves. They each had a permanent record dosimeter (PRD). The ambulance delivered the patient wrapped in blankets, lying on a backboard and on a stretcher. The patient's vital data was provided. The Hospital staff wheeled the stretcher into the first decontamination area in the front of the Emergency Room. The ER doctor assessed the patient's medical condition, as not life threatening. The
patient was then moved to the ER treatment area. The Nuclear Medicine technician performed a thorough radiological survey of the patient.

Contamination readings of 1400 cpm were noted on the patient's left and right knee. A possible fracture of the right wrist with the right hand being bruised and abraded were also identified. 1200 cpm was found on the hand and wrist. Two (2) cleansings of the contaminated wounds, readings showed less than 100cpm.

The first changing of gloves was demonstrated and subsequent changing of gloves was simulated. The swabs and gloves were discarded into a contamination waste barrel. After successful decontamination of the patient, the Doctor determined that the patient could be transferred to a clean stretcher and sent to the Emergency Room for X-ray of her right elbow and further medical care. The transfer was done using appropriate contamination control precautions with paper sheeting on the floorway. The disrobing procedure was demonstrated by one of the nurses. She was surveyed to determine if she was clean before being released. The paramedic described through an interview process, how the area would be surveyed and the procedure to be used if contamination was discovered. All contaminated materials would be bagged. The utility would be responsible for the disposal of the contaminated materials. The Emergency Room staff and the Nuclear Medicine technician were well trained and demonstrated a good knowledge of contamination control procedures.

All activities associated with this criterion were based on the plans and procedures and completed, as they would have been in an actual emergency except as noted in the Extent of Play agreement.

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

a. MET: 1.e.1, 3.a.1, 6.d.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 Washington County, Washington Ambulance and Chair

Criterion 1.e.1:
Washington Ambulance and Chair Emergency Medical Services successfully demonstrated that they have necessary equipment and supplies required to support treatment and transfer of radiological contaminated patients during the Beaver Valley Power Station Medical Services (MS-1) Drill on March 21, 2013.

The rescue squad personnel correctly used Personal Protective Equipment (PPE), such as gloves and booties. The actions taken to prevent the spread of contamination from the area and patient were done correctly. This was accomplished through the use of PPE and the "cocooning" of the patient prior to transport. The rescue squad was issued Permanent Record Dosimeters (PRDs) by the Washington County HAZMAT Team in accordance with County and Commonwealth plans.

All activities were based on the plans and procedures and completed as they would have been in an actual emergency except as noted in the Extent of Play agreement.

Criterion 3.a.1:
The Washington Ambulance and Chair Emergency Medical Services successfully demonstrated during the Beaver Valley Power Station Medical Services (MS-1) Drill held on March 21, 2013, that they can issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with plans and procedures.

The Washington County Hazardous Materials Unit (HAZMAT) also participated in this exercise. The team, consisting of three technicians and a supervisor, provided "Hotzone" control, record keeping, personnel radiological monitoring, and contamination control oversight. The HAZMAT Unit is equipped with Permanent Record Dosimeters, Direct Reading Dosimeters, and Ludlum 2241-3 radiological monitors (calibrated May 9, 2012). A technician properly demonstrated the operational check procedures for the Ludlum 2241-3. Direct Reading Dosimeters were not employed during this exercise because it occurred outside the Emergency Planning Zone and in an area surveyed to ensure no contamination. The HAZMAT Unit supervisor explained that if this incident had occurred in a more contaminated location, he would have been cognizant of exposure limits and taken appropriate actions.

The exercise began at 0802 with a simulated declaration of a Site Area Emergency (SAE) at

Beaver Valley Power Station. Notification of a General Emergency (GE) was received at 0810. For the purposes of this demonstration, the participants simulated that the incident occurred at the vehicle decontamination area. The patient was injured inside a previously established "Hot Zone". The patient's TYVEK outer garment was cut away and left in the Hot Zone. A sheet was spread out adjacent to the patient to provide a clean area for the rescue personnel to work. The patient's wounds were dressed, and the patient was prepared for transportation to the hospital.

All activities were based on the plans and procedures and completed as they would have been in an actual emergency except as noted in the Extent of Play agreement.

Criterion 6.d.1:

The Washington Ambulance and Chair Emergency Medical Service successfully demonstrated during the Beaver Valley Power Station Medical Services (MS-1) Drill held on March 21, 2013, that trained personnel can provide transport and medical services to contaminated injured individuals.

The exercise commenced at 0802 with notification of a Site Area Emergency (SAE) (simulated) at Beaver Valley Power Station. The notification of a General Emergency (GE) was received at 0810. An Emergency Worker assigned to vehicle decontamination had been injured with potential contamination. The Washington Ambulance and Chair crew immediately prepared to respond. The crew prepared a backboard covered in two sheets, as well as a covered gurney. Both crew members dressed in booties and gloves.

The Emergency Medical Technicians (EMTs) are not issued Direct Reading Dosimeters or radiological monitoring equipment; however they are provided Permanent Record Dosimeters (PRDs).

Washington County Hazardous Materials Unit personnel also participated in the exercise. They were equipped with Permanent Record Dosimeters (PRDs), Direct Reading Dosimeters, and Ludlum 2241-3 survey meters (calibrated May 9, 2012). The Hazardous Materials Team provided radiological monitoring and survey services for the patient and EMTs while also providing "Hot Zone" control, record keeping, and contamination control.

A HAZMAT Technician conducted a radiological survey of the patient while an EMT

assessed the patient's injuries. The patient, with simulated injuries and contamination to the right wrist, was appropriately assessed and the wounds dressed at the scene. The EMT applied sterile dressings to protect the wounds and contain contamination. The patient was then cocooned and secured to a backboard.

The HAZMAT Technician and EMT inside the "Hotzone" were monitored and cleared to exit. The ambulance departed for Washington Hospital at approximately 0850.

After the patient was transferred to the Radiation Emergency Area (REA)at the hospital, the ambulance crew, and equipment were monitored for contamination.

All activities associated with this criterion were based on the plans and procedures and completed as they would have been in an actual emergency except as noted in the Extent of Play agreement

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

a. MET: 1.e.1, 3.a.1, 6.d.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

SECTION 4: CONCLUSION

Based on the review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate and there is reasonable assurance they can be implemented, as demonstrated during the Beaver Valley Power Station/Washington Hospital 2013 MS-1 Drill.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2013-03-21, SITE: Beaver Valley Power Station, PA

LOCATION	EVALUATOR	AGENCY
Washington County, Washington Hospital	*Daniel Lerch	FEMA RIII
Washington County, Washington Ambulance and Chair	*Lee Torres	FEMA RIII

*Team Leader

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
BVPS	Beaver Valley Power Station
DRD	Direct Reading Dosimeter
EMT	Emergency Medical Technician
FEMA	Federal Emergency Management Agency
FENOC	First Energy Nuclear Operating Company
GE	General Emergency
MS	Medical Services
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimeter
REA	Radiation Emergency Area
REP	Radiological Emergency Preparedness
RO	Radiological Officer
SAE	Site Area Emergency

APPENDIX C: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the Beaver Valley Power Station 2013 Medical Services Drill and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program (HSEEP) with the Radiological Emergency Preparedness Program Manual (April 2012). The Exercise Plan was originally drafted and published by the Pennsylvania Emergency Management Agency (PEMA) as an independent document and is annexed here.

The "Beaver Valley Power Station's Medical Services Drill Extent-of-Play 2013" was negotiated and agreed upon by FEMA Region III, PEMA, and the offices of emergency management of the Risk and Support Jurisdictions. It is included as an Appendix of the Exercise Plan.

Exercise Plan

NATIONAL EXERCISE PROGRAM

BEAVER VALLEY POWER STATION

U.S. DEPARTMENT OF HOMELAND SECURITY

FEMA

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PREFACE

The 2013 Beaver Valley Power Station Evaluated Medical Services Drill (MS-1) is sponsored by Pennsylvania Emergency Management Agency (PEMA) and the Federal Emergency Management Agency (FEMA). This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency (FEMA), Homeland Security Exercise and Evaluation Program (HSEEP).

The ExPlan gives officials, observers, media personnel, and players from participating organizations the information necessary to observe or participate in a nuclear power plant accident response exercise focusing on participants' emergency response plans, policies, and procedures as they pertain to this type of event. The information in this document is current as of the date of publication and is subject to change as dictated by the EPT.

The 2013 Beaver Valley Power Station MS-1 Drill is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, Controllers, and Evaluators, but Players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook is a restricted document intended for Controllers and Evaluators only.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and to protect this material in accordance with current jurisdictional directives. Public release of exercise materials to third parties is at the discretion of DHS and the EPT.

HANDLING INSTRUCTIONS

1. The title of this document is 2013 Beaver Valley Power Station MS-1 *Exercise Plan (ExPlan).*
2. The information gathered in this ExPlan is *For Official Use Only (FOUO)* and should be handled as sensitive information not to be disclosed. This document should be safeguarded, handled, transmitted, and stored in accordance with appropriate security directives.
3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
4. For more information, please consult the following points of contact (POCs):

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CHAPTER 1: GENERAL INFORMATION

Introduction

The 2013 Beaver Valley Power Station Medical Services Drill is a Functional Exercise (FE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. A Functional Exercise is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the Federal Emergency Management Agency with the input, advice, and assistance of the Commonwealth of Pennsylvania. The 2013 Beaver Valley Power Station Medical Services Drill is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

Confidentiality

The 2013 Beaver Valley Power Station Medical Services Drill is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. This Exercise Plan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook is a restricted document intended for controllers and evaluators only.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and protect this material in accordance with current Federal, State and Local directives.

Public release of exercise materials to third parties is at the discretion of the Federal Emergency Management Agency (FEMA) and the Exercise Planning Team.

Purpose

The purpose of this exercise is to evaluate player actions against current response plans and capabilities for a nuclear power plant-related incident, and to comply with the requirements of 44 CFR 350 and the guidelines of NUREG 0654/FEMA-REP-1. Exercise planners utilized the Radiological Emergency Preparedness (REP) Program Manual (April 2012) to develop this exercise.

The objective of The Federal Emergency Management Agency and, The Pennsylvania Emergency Management Agency, and local jurisdictions is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

Target Capabilities

The establishment of the National Preparedness Priorities have steered the focus of homeland security toward a capabilities-based planning approach. Capabilities-based planning focuses on planning under uncertainty, since the next danger or disaster can never be forecast with complete accuracy. Therefore, capabilities-based planning takes an all-hazards approach to planning and preparation which builds capabilities that can be applied to a wide variety of incidents. States and Urban Areas use capabilities-based planning to identify a baseline assessment of their homeland security efforts by comparing their current capabilities against the Target Capabilities List (TCL) and the critical tasks of the Universal Task List (UTL). This approach identifies gaps in current capabilities and focuses efforts on identifying and developing priority capabilities and tasks for the jurisdiction. These priority capabilities are articulated in the jurisdiction's homeland security strategy and Multi-Year Training and Exercise Plan (TEP), of which this exercise is a component of.

The capabilities listed below have been selected by the Exercise Planning Team from the priority capabilities identified in Commonwealth of Pennsylvania Multi-Year TEP and the Radiological Emergency Preparedness (REP) Program Manual (April 2012), Exercise Evaluation Criteria. These capabilities provide the foundation for development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate performance of these capabilities and their associated critical tasks.

- Planning
- Communications
- Community Preparedness and Participation
- WMD/HazMat Response ad Decontamination
- Emergency Triage and Pre-Hospital Treatment
- Medical Supplies Management and Distribution

Exercise Objectives

The Emergency Preparedness Evaluation Areas – the elements and sub elements – for this drill are those that are required to be demonstrated in every MS-1 Drill, per the Radiological Exercise Preparedness (REP) Program Manual (April 2012). **Appendix B, Extent of Play**, Shows the emergency preparedness elements that are required to be demonstrated in the 2013 Beaver Valley Power Station Medical Services Drill, along with the level of demonstration that will be displayed in the exercise (i.e, fully demonstrated, limited demonstration, simulated, Out Of Sequence interviews, not demonstrated).

The objective of this exercise is to demonstrate reasonable assurance that the health and safety of the public can be protected, through successful demonstration of tasks identified in **Appendix B.**

Outstanding Issues

There are no deficiencies, Areas Requiring Corrective Action (ARCAs), or planning issues as a result of the FEMA-evaluated MS-1 Drill at Washington Hospital conducted March 25, 2009.

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The 2013 Beaver Valley Power Station Medical Services Drill is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a Nuclear Power Plant. The 2013 Beaver Valley Power Station Medical Services Drill will be conducted on March 21, 2013. Exercise play is scheduled for four (4) hours or until the Lead Controller, after consulting with the FEMA Site Specialist, determine that the exercise objectives have been met at each venue.

Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the 2013 Beaver Valley Power Station Medical Services Drill:

- The exercise will be graded against the REP criteria. Elements outside the scope of the REP criteria will not be graded.
- This exercise will be conducted in a no-fault learning environment wherein systems and processes, not individuals, will be evaluated.
- Exercise simulation will be realistic and plausible, containing sufficient detail from which to respond.
- Exercise players will react to the information and situations as they are presented, in the same manner as if this had been a real event.

Constructs and Constraints

Constructs are exercise devices designed to enhance or improve exercise realism. Alternatively, constraints are exercise limitations that may detract from exercise realism. Constraints may be the inadvertent result of a faulty construct or may pertain to financial and staffing issues. Although there are a number of constructs and constraints (also known as exercise artificialities) for any exercise, the EPT recognizes and accepts the following as necessary:

- Exercise communication and coordination will be limited to the participating exercise venues.
- Communication methods may include Telephone, Mobile Telephone, radio, and other method made available for players to use during the exercise.
- Out-of-Sequence play is allowed.
- Certain simulations are allowed.

The participating agencies may need to balance exercise play with real-world emergencies. It is understood that real-world emergencies will take priority.

Exercise Participants

The following are the categories of participants involved in this exercise; note that the term "participant" refers to all categories listed below, not just those playing in the exercise:

- *Players.* Players are agency personnel who have an active role in responding to the simulated emergency and perform their regular roles and responsibilities during the exercise. Players initiate actions that will respond to and mitigate the simulated emergency.
- *Controllers.* Controllers set up and operate the exercise site; plan and manage exercise play; act in the roles of response individuals and agencies not playing in the exercise. Controllers direct the pace of exercise play and routinely include members from the exercise planning team. They provide key data to players and may prompt or initiate certain player actions to ensure exercise continuity.
- *Evaluators.* Evaluators are chosen to evaluate and provide feedback on a designated functional area of the exercise. They are chosen based on their expertise in the functional area(s) they have been assigned to review during the exercise and their familiarity with local emergency response procedures. Evaluators assess and document participants' performance against established emergency plans and exercise evaluation criteria, in accordance with HSEEP standards and within the bounds of REP Program guidance and regulations. They are typically chosen from amongst planning committee members or the agencies/organizations that are participating in the exercise. FEMA Evaluators will not serve as Controllers.
- *Actors.* Actors are exercise participants who act or simulate specific roles during exercise play. They are typically volunteers who have been recruited to play the role of victims or other bystanders.
- *Observers.* Observers visit or view selected segments of the exercise. Local Observers do not play in the exercise, and do not perform any control or evaluation functions. Local Observers will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. PEMA observers may be present at selected locations as assigned by the Lead Controller. VIPs or other visitors will be handled by each agency or location (Municipal EOC, County EOC, etc.) according to those agencies' policies and procedures.
- *Media Personnel.* Some media personnel may be present as observers pending approval by the Pennsylvania Emergency Management Agency (PEMA).
- *Support Staff.* Exercise support staff includes individuals who are assigned administrative and logistical support tasks during the exercise (i.e. registration, catering, etc.

Exercise Tools

Controller and Evaluator Handbook

The 2013 Beaver Valley Power Station Medical Services Drill C/E Handbook is designed to help exercise Controllers and evaluators conduct and evaluate an effective exercise. This Handbook also enables Controllers and Evaluators to understand their roles and responsibilities in exercise execution and evaluation.

Master Scenario Events List

The MSEL outlines benchmarks, as well as injects that drive exercise play. It also details realistic input to the exercise players as well as information expected to emanate from simulated organizations (i.e., those nonparticipating organizations, agencies, and individuals who would usually respond to the situation). An inject will include several items of information, such as inject time, intended recipient, responsible controller, inject type, a short description of the event, and the expected player action.

For the 2013 Beaver Valley Power Station Medical Services Drill the MSEL will not be used.

Exercise Implementation

Exercise Play

Exercise play will begin at approximately 0800 with a situation update going to each participating venue. Play will proceed according to the events outlined in the scenario, in accordance with established plans and procedures. The exercise will conclude upon the completion of operations and attainment of the exercise objectives, as determined by the Lead Controller after consultation with Lead FEMA Evaluator.

Exercise Rules

The following are the general rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by control staff.
- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, *"This is a drill."*

Exercise participants placing telephone calls or initiating radio communication must identify the organization, agency, office, and/or individual with whom they wish to speak.

Safety Requirements

General

Exercise participant safety takes priority over exercise events. Although the organizations involved in the 2013 Beaver Valley Power Station Medical Services Drill come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

- An exercise Safety Controller will be identified and be responsible for participant safety.
- All exercise controllers, evaluators, and staff will serve as safety observers while the exercise activities are underway. Any safety concerns must be immediately reported to the Safety Controller.

- Participants will be responsible for their own and each other's safety during the exercise. It is the responsibility of all persons associated with the exercise to stop play if, in their opinion, a real safety problem exists. Once the problem is corrected, exercise play can be restarted.
- All organizations will comply with their respective environmental, health, and safety plans and procedures, as well as the appropriate Federal, State, and local environmental health and safety regulations.

Exercise Setup

Exercise setup involves the pre-staging and dispersal of exercise materials; including registration materials, documentation, signage, and other equipment as appropriate.

Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will first advise the nearest controller to call 911,and state "***This is not a Drill***" prior to explaining the injury or illness then if possible, renders aid, provided the aid does not exceed his or her training.
- The controller who is made aware of a real emergency will initiate the broadcast "***This Is Not A Drill***" on the controller radio network or telephone, providing the following information to the Lead Controller and Exercise Director:
    - Venue/function
    - Location within the venue/function
    - Condition
    - Requirements
- If the nature of the emergency requires a suspension of the exercise at the venue/function, all exercise activities at that facility will immediately cease. Exercise play may resume at that venue/function once the "Real-World Emergency" situation has been addressed.
- Exercise play at other venue/functions should not cease if one venue/function has declared a "Real-World Emergency" unless they are reliant on the affected venue.
- If a real emergency occurs that affects the entire exercise, the exercise may be suspended or terminated at the discretion of the Exercise Director and Lead Controller.

Site Access

Security

The Lead Controller or Exercise Director will control entry to the exercise venues. To prevent confusion and interruption of the exercise, access to the exercise sites will be limited to exercise participants only. Players should advise their venue's controller or evaluator if an unauthorized person is present. Each organization should follow its internal security procedures, augmented as necessary to comply with exercise requirements.

Observer Coordination

Each organization with observers will coordinate with the Lead Controller or Exercise Director for access to the exercise site. Observers will be escorted to an observation area for orientation and conduct of the exercise. All observers will be asked to remain within the designated observation area during the exercise. Exercise Director and/or the Observer Controller will be present to explain the exercise program and answer questions for the observers during the exercise.

Parking and Directions

Parking information and directions to each venue area are available from the Lead Controller.

Restroom Facilities

Restroom facilities will be available at each venue.

Exercise Identification

Players, Controllers and Evaluators will display the agency issued Identification badges while the exercise is in play.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The exercise is scheduled to run for four (4) hours or until the Lead Controller after consultation with the Lead Evaluator determines that the exercise objectives have been met. The Lead Controller will announce the exercise suspension or termination.

All spoken and written communication will start and end with the statement, "THIS IS AN EXERCISE."

Player Communication

Players will use routine, in-place agency communication systems. Additional communication assets may be made available as the exercise progresses. The need to maintain capability for a real-world response may preclude the use of certain communication channels or systems that would usually be available for an actual emergency incident. In no instance will exercise communication interfere with real-world emergency communications. Each venue will coordinate its own internal communication networks and channels.

The primary means of communication among, Controllers, and the venues will be telephone.

Player Briefing

Controllers/Evaluators may be required to read specific scenario details to the participants to begin exercise play. They may also have technical handouts or other materials to give to players in order to better orient them to the exercise environment.

External Affairs

Any participation by actual media shall be coordinated through the FEMA Office of External Affairs.

CHAPTER 3: PLAYER GUIDELINES

Exercise Staff

Exercise Director

The Exercise Director has the overall responsibility for planning, coordinating, and overseeing all exercise functions. The Exercise Director for the 2013 Beaver Valley Power Station Medical Services Drill is the Lead Controller who will manage the exercise activities and maintain a close dialogue with the Controllers regarding the status of play and the achievement of the exercise design objectives.

Trusted Agents

Trusted agents are exercise planners and participants who are responsible for developing the Scenario and the Master Scenario Events List (MSEL). These documents are restricted and are not available to other members of the Exercise Planning Team, Players, or other Participants. The trusted agents for the 2013 Beaver Valley Power Station MS-1 Drill include the Exercise Director, Lead Controller, First Energy Nuclear, Beaver County Office of Emergency Management, and the FEMA Site Specialist.

Lead Controller

The Lead Controller is responsible for the overall organization of the 2013 Beaver Valley Power Station MS-1 Drill. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller debriefs the Controllers after the exercise and oversees the setup and takedown of the exercise.

Controllers

At least one controller will be onsite with every facility participating in the drill. The Lead Facility Controller at each location will coordinate any changes that impact the scenario or affect other areas of play through the Lead Controller. The individual controllers issue exercise materials to players as required and monitor the exercise timeline. Controllers also provide injects to the players as described in the scenario.

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the 2013 Beaver Valley Power Station MS-1 Drill. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Overview of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After Action process. The Lead Evaluator will be the FEMA Region III Site Specialist for Beaver Valley Power Station.

Evaluators

Evaluators work under the direction of the Lead Evaluator, and as a team with Controllers. Evaluators are SMEs who record events that take place during the exercise and assess/submit documentation for review and inclusion in the After Action Report (AAR). Evaluators should refrain from any direct interaction with the players during exercise play except with the facilitation of a Controller for clarification of issues or during scheduled interviews.

Player Instructions

Before the Exercise

- Review the appropriate emergency plans, procedures, and exercise support documents.
- Be at the appropriate site at least 30 minutes before the start of the exercise. Wear appropriate uniform/identification badge.
- If you gain knowledge of the scenario before the exercise, notify a controller so that appropriate actions can be taken to ensure a valid evaluation.
- Read your Player Information Handout, which includes information on exercise safety.
- Please sign in.

During the Exercise

- Respond to the exercise events and information as if the emergency were real, unless otherwise directed by an exercise controller.
- Controllers will only give you information they are specifically directed to disseminate. You are expected to obtain other necessary information through existing emergency information channels.
- Do not engage in personal conversations with controllers, evaluators, observers, or media personnel while the exercise is in progress. If you are asked an exercise-related question, give a short, concise answer. If you are busy and cannot immediately respond, indicate so, but report back with an answer at the earliest time possible.
- If you do not understand the scope of the exercise or if you are uncertain about an organization's or agency's participation in an exercise, ask a controller.
- Parts of the scenario may seem implausible. Recognize that the exercise has objectives to satisfy and may require the incorporation of unrealistic aspects. Note that every effort has been made by the trusted agents to balance realism with safety and the creation of an effective learning and evaluation environment.
- All exercise communication will begin and end with the phrase "This is an exercise." This is a precaution taken so anyone overhearing the conversation will not mistake the exercise play for a real-world emergency.
- When communicating with any venue, identify the organization, agency, office, and/or individual with which you want to speak.

- Verbalize out loud when taking an action. This will ensure that evaluators are made aware of critical actions as they occur.
- Maintain a log of your activities. Many times, this log may include documentation of activities missed by a controller or evaluator.

Following the Exercise

- At the end of the exercise at your facility, participate in the Hotwash with the controllers and evaluators.
- Complete the Participant Feedback Form as required. This form allows you to comment candidly on emergency response activities and effectiveness of the exercise. Please provide the completed form to a controller or evaluator.
- Provide all rosters, sign in sheets, logs, messages, notes or materials generated from the exercise to your controller or evaluator for review and inclusion in the After Action Report (AAR).

Simulation Guidelines

Because the 2013 Beaver Valley Power Station MS-1 Drill is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

If a real emergency occurs during the exercise, the exercise at your respective venue may be suspended or terminated at the discretion of the controller(s) at each venue. If a real emergency occurs, say "Real-World Emergency" and notify the nearest Controller and Evaluator.

CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

The goal of the 2013 Beaver Valley Power Station MS-1 Drill is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

Debriefing

Immediately following the completion of exercise play, Controllers will facilitate a debrief with Players from their assigned location. The debrief is an opportunity for Players to voice their opinions on the exercise and their own performance. At this time, Evaluators can also seek clarification on certain actions and what prompted Players to take them. The debrief should not last more than 30 minutes. Evaluators should take notes during the debrief and include these observations in their analysis.

After Action Report

The AAR is the culmination of the exercise. It is a written report outlining the strengths and areas for improvement identified during the exercise. The AAR will include the timeline, executive summary, scenario description, mission outcomes, and capability analysis. The AAR will be drafted by a core group of individuals from the exercise planning team.

After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the 2013 Beaver Valley Power Station MS-1 Drill is a part. The lessons learned and recommendations from the AAR will be incorporated into the Improvement Plan (IP).

After Action Conference

The After Action Conference (AAC), scheduled within 60 days of the drill to allow jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP.

Improvement Plan

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion. It is created by key stakeholders from the 2013 Beaver Valley Power Station MS-1 Drill participating agency officials during the AAC scheduled with 60 days of the drill.

APPENDIX A: EXERCISE SCHEDULE

Table A.1

2013 Beaver Valley Power Station MS-1 Drill *Schedule*

Time (Tentative)	Personnel	Activity
March 21, 2013		
0800	Washington Ambulance & Chair and Washington Hospital	Exercise Begins
1200	Washington Hospital	Exercise Ends
1215	All Drill Participants	Critique and Debrief

APPENDIX B: EXTENT OF PLAY INFORMATION

BEAVER VALLEY POWER STATION
WASHINGTON HOSPITAL MEDICAL SERVICES DRILL
March 21, 2013

Method of Operation

1. The power station and its personnel will not play as active role in the facilitation of this drill. The plant's simulated events, radiation releases, and emergency classifications will be injected by off-site controllers. A pre-approved scenario will be used.

2. The Pennsylvania Emergency Management Agency (PEMA), Area Offices (Harrisburg Central Area and Indiana Western Area) will not be activated as part of this drill. The Exercise Coordinator will provide pre-drill coordination and observe drill activities.

3. First Energy Nuclear will participate as a Controller in this drill.

4. Washington County Emergency Management Agency will participate in this drill

5. Controllers will be supplied by PEMA. Controllers are not players and will provide injects and information to initiate and stimulate drill play by providing radiological readings during the monitoring of personnel. Live radioactive sources will only be used to perform operational checks of radiological monitoring instruments.

6. PEMA staff and qualified county emergency management personnel will be assigned to key locations for the purpose of observing, noting response actions and conditions, and recording observations for future use. Observers will not take an active part in the proceedings, but will interact with staff members to the extent necessary to fulfill their observer responsibilities. Coaching of players is not permitted, except as appropriate to provide training to participants awaiting a re-demonstration.

7. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Radiological Emergency Preparedness Program (REPP) Evaluators: FEMA Evaluators will be present at designated demonstration locations.

8. Drill activities are scheduled to commence on or about 0800, March 21, 2013 and continue until the participants have completed the drill objectives and demonstrated the Exercise Evaluation Criteria.

9. Participants and agencies will Stand Down when the Controllers have confirmed with the evaluators that all evaluation criteria have been demonstrated and when the State and County Observers are satisfied that the Objectives have been met.

10. An emergency plan is drafted to address the generally expected conditions of an emergency. Not everything in the emergency plan may be applicable for a given scenario. The main purpose of an emergency plan is to assemble sufficient expertise and officials so as to properly react to the events as they occur. The responders should not be so tied to a plan that they cannot take actions that are more protective of the public. Therefore, if, by not following the plan, the responders protect the public equally as well as provided in the plan, it should be noted for possible modification of the plan, but not classified as a negative incident. Furthermore, if, by following the plan there is a failure to protect the public health and safety, it should be noted so that the plan can be modified and the appropriate negative assessment corrected.

11. During the drill any activity that is not satisfactorily demonstrated may be redemonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training may be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Redemonstrations will be negotiated between the players, observers, controllers, and evaluators. DEMA may advise the RAC Chair prior to initiating any re-demonstrations. It is permissible to extend the demonstration window, within reason, to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

Objectives

A. Demonstrate the ability to respond to a radiation medical emergency following the procedures of Washington County Division of Emergency Management, Washington Ambulance & Chair/EMS and Washington Hospital.

B. Demonstrate timely and accurate communications between the hospital and offsite response agencies. (Telephones will be used in lieu of radios whenever possible to limit the potential misinterpretation of the drill as an actual event.)

C. Demonstrate correct priorities and appropriate techniques in EMS, transportation of patients and pre-hospital and hospital emergency care of radioactively contaminated patients.

D. Demonstrate inter-agency cooperation between the Ambulance Company/ EMS and the Hospital.

Extent of Play

Evaluation Area 1—Emergency Operations Management

Sub-Element 1.e—Equipment and Supplies to Support Operations

Intent

This sub-element derives from NUREG–0654, which provides that Offsite Response Organizations (ORO) have emergency equipment and supplies adequate to support the emergency response.

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG–0654, H.7,10; J.10.a, b, e, J.11; K.3.a).

Extent of Play

Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged. All instruments should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV–700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV–700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument, or calibrated frequency can be verified by other means. Additionally, instruments being used to measure activity should have a range of readings sticker affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment); reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimetry should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. CDV–138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/ or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce a letter from a certified private or State laboratory indicating that the KI supply remains potent, in accordance with U.S. Pharmacopoeia standards.

At locations where traffic and access control personnel are deployed, appropriate equipment (for example, vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State Negotiated Extent of Play:

Ambulance crews are not trained or equipped to operate or carry radiological monitoring equipment. In accordance with PEMA standard operating procedures ambulance crews operating outside the 10 mile Emergency Planning Zone are considered 'Category C" emergency workers; therefore, they are only required to implement protective measures consistent with protection against blood-borne pathogens; i.e., long sleeved garments, trousers, impermeable gloves, and surgical masks. "Category C" emergency worker dosimetry issue consists of one permanent reading dosimeter per worker.

Hospital personnel are also considered "Category C" emergency workers and will conform to PEMA SOP protective measures at minimum. Direct Reading Dosimeters may be issued individually; however, an Area Kit will be established in the Radiation Emergency Area (REA). Individual PRDs will be issued by the hospital. Radiological Survey Instruments are calibrated per manufactures recommendations.

Outstanding Issues:

None

Evaluation Area 3—Protective Action Implementation

Sub-Element 3.a—Implementation of Emergency Worker Exposure Control

Intent

This sub-element derives from NUREG–0654, which provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimetry and permanent record dosimetry; the reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; and establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

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 exposure record or chart. (NUREG– 0654, K.3.a, b).

Extent of Play

OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the ORO's plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (for example, written procedures and/or co-workers) in providing responses.

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be affected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, for example, at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State Negotiated Extent of Play:

- *Demonstrate appropriate procedures and equipment to manage radiological exposure to staff.*
- *Demonstrate the ability to transport contaminated/injured individuals while using ALARA principles.*
- *Demonstrate the ability to utilize dosimetry, equipment and procedures to manage radiological exposure to emergency workers as required by plans*

Radiological briefings will be provided to address exposure limits and procedures to replace personnel approaching limits and how permission to exceed limits is obtained. At any time, players may ask other players or supervisors to clarify radiological information. In Pennsylvania, emergency workers outside the EPZ do not have turn-back values. Standard issue of dosimetry and potassium iodide for each category of emergency worker is as follows:

Category A: 1 PRD, 1 DRD, and 1 unit of KI
Category B: 1 PRD and 1 unit of KI
Category C: 1 PRD

All locations that have dosimetry equipment indicated within their Radiological Emergency Response Plan (RERP) will make the dosimetry equipment (and KI, as appropriate) available for inspection by the Federal Evaluator. Simulation PRDs with mock serial numbers may be used.

Outstanding Issues:

None

Evaluation Area 6—Support Operation/ Facilities
Sub-Element 6.d—Transportation and Treatment of Contaminated Injured Individuals

Intent

This sub-element derives from NUREG–0654, which provides that Offsite Response Organizations (ORO) should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

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. (NUREG–0654, F.2; H.10; K.5.a, b; L.1, 4).

Extent of Play

Monitoring, decontamination, and contamination control efforts will not delay urgent medical care for the victim.

Offsite Response Organizations (ORO) should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service for an extended time, any vehicle (for example, car, truck, or van) may be used to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the victim may be performed before transport, done en route, or deferred to the medical facility. Before using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated before and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.
All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State Negotiated Extent of Play:

Demonstrate that the facility has the appropriate space, adequate resources and trained personnel to provide monitoring, decontamination and medical services to contaminated/injured individuals.

Demonstrate the ability to transport contaminated/injured individuals while using ALARA principles.

The Washington Ambulance & Chair will pick-up a pre-staged simulated contaminated/injured victim.

Outstanding Issues:

None

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