Beaver Valley Power Station

After Action Report/ Improvement Plan

Drill Date - May 17, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

Published July 26, 2011

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After Action Report/Improvement Plan

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EXECUTIVE SUMMARY

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351, and 352. These regulations are a key element in the Radiological Emergency Preparedness Program (REPP) that was established following the Three Mile Island Nuclear Station accident in March 1979. In October 2005, the REP Program was moved to the Department of Homeland Security/Federal Emergency Management Agency/Radiological Emergency Preparedness Program (DHS/FEMA/REPP).

FEMA Rule 44 CFR 350 establishes the policies and procedures for FEMA's (now DHS/FEMA/REP's) initial and continued approval of tribal, State, and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees.

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

• The review and evaluation of Radiological Emergency Response Plans (RERPs) developed by State and local governments;

• The evaluation of exercises conducted by State and local governments to determine whether such plans can be implemented;

• 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 (44 CFR Part 354,
Appendix A, September 14, 1993), now under revision to reflect DHS responsibilities;

• Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:

• U.S. Department of Agriculture
• U.S. Department of Commerce

- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- Food and Drug Administration
- Center for Disease Control
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior
- U.S. Department of Justice
- U.S. Department of State
- U.S. Department of Transportation
- U.S. Department of Veterans Affairs
- U.S. Environmental Protection Agency
- General Services Administration
- National Aeronautics and Space Administration
- Nuclear Regulatory Commission

- Providing regulatory oversight, rule-making and guidance, as necessary.

A REP Medical Services Drill was evaluated on May 17, 2011, by FEMA, Region III REPP to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the BVPS. The purpose of this report is to present the drill results and findings on the performance of the offsite response organizations (OROs) during a simulated radiological emergency involving a radiologically contaminated, injured individual. Please note that throughout this report the terms Drill and Exercise may be used synonymously. The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the Regional Assistance Committee Chairperson from FEMA, Region III, and approved by DHS/FEMA/REPP Headquarters. There were no Deficiencies, Areas Requiring Corrective Action, or Planning Issues identified as a result of this exercise/drill.

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

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

• FEMA Guidance Memoranda MS-1, "Medical Services," November 1986;

• FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and

• 67 FR 20580, "FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002.

Section 1 of this report, entitled "Exercise Overview," contains basic details of the exercise/drill,the exercise planning team, and participating agencies.

Section 2 is titled "Exericse Design Summary" and includes the Purpose and Design, a description of the Objectives, Capabilities and Activities, and the Scenario Summary.

Section 3 is the "Analysis of Capabilities. It describes the overall Evaluation and Results and the Summary Results of Evaluation. It identifies the specific participants, the criteria that were evaluated, and indicates if the criteria were or were not met.

Section 4 expresses the "Conclusion" resulting from the exercise.

Appendix A identifies the Drill Evaluators and Team Leaders.

Appendix B catalogs the Acronyms and Abbreviations used in this report.

Appendix C is the Exercise Plan and contains the Exercise Plan, Extent of Play, and Controllers Handbook.

Appendix D is titled Improvement Plan. However, because there were no "Deficiencies," "Areas Requiring Corrective Action," or "Planning Issues" assessed in this drill, the Impovement Plan is not applicable.

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 mile from Midland, Pennsylvania, on 501 acres of fairly level terrace owned by the FirstEnergy 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 810 megawatts (MW); the Unit 2 output is 833 MW. 110 sirens cover the plume EPZ; 85 of the sirens are in Pennsylvania.

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 334,563 and lies 22 miles to the southeast. The maximum population distribution, including residents and transients, is 94,023 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.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Beaver Valley Power Station

Type of Exercise
Drill

Exercise Date
May 17, 2011

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

West Virginia Division of Homeland Security and Emergency Management

Risk Jurisdictions

Hancock County Office of Emergency Management

New Cumberland Ambulance Services

Weirton Medical Center

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On May 17, 2011, 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 drill at this site was conducted on March 25, 2009.

FEMA, Region III, wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania and the State of West Virginia, the support county of Washington County, PA, and the risk county of Hancock County, WV, as well as the New Cumberland Ambulance Company and Weirton Medical Center, 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.

2.2 Exercise Objectives, Capabilities and Activities

The objective of the WV BVPS 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 BVPS from Site Area Emergency to General Emergency. Subsequent to being notified of the General Emergency, the Weirton Hospital is notified that an incident had occurred 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 fractured ankle and abrasions on the right elbow. Detectable radioactive contamination was found on the right outer pants leg and the right elbow.

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 May 17, 2011, Medical Services (MS-1) Drill.

Each jurisdiction and functional entitiy was evaluated on the basis of its demonstration of the Exercise Evaluation Area Criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the Exercise Evaluation Area Criteria and the Extent-of-Play Agreement used in this exercise are found in the Exercise Plan, Appendix C.

3.2 Summary Results of Drill Evaluation

The West Virginia Beaver Valley 2011 Medical Services Drill evaluation included two participating locations. Two evaluators provided analyses of three exercise criteria each. 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: 2011-05-17 SITE: Beaver Valley Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		HC NCAS	HC WMC
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
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 the Ingestion Exposure Pathway	2d1		
Rad Assessment and 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 prompt alert and notification system-Excptn Areas/Bkup RA	5a3		
Emergency information and instructions for the public and the media	5b1		
Support Operations/Facilities			
Mon/decon of evacuees and emergency workers, and registration of evacuees	6a1		
Mon/decon of emergency 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 Risk Jurisdictions

3.3.1.1 Hancock County, New Cumberland Ambulance Services

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 Hancock County, Weirton Medical Center

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 a reasonable assurance they can be implemented, as demonstrated during the West Virginia BVPS 2011 MS-1 Drill.

APPENDIX A: DRILL EVALUATORS AND TEAM LEADERS

DATE: 2011-05-17, SITE: Beaver Valley Power Station, PA

LOCATION	EVALUATOR	AGENCY
Hancock County, New Cumberland Ambulance Services	Richard Kinard	FEMA RIII
Hancock County, Weirton Medical Center	*Daniel Lerch	FEMA RIII
* Team Leader		

APPENDIX B: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
AAC	After Action Conference
AAR	After Action Report
ALARA	As Low As Reasonably Achievable
ARCA	Area Requiring Corrective Action
BVPS	Beaver Valley Power Station
CFR	Code of Federal Regulations
cps	Counts Per Minute
DHS	Department of Homeland Security
DRD	Direct Reading Dosimeter
EEG	Exercise Evaluation Guides
EOC	Emergency Operations Center
EPT	Exercise Planning Team
EPZ	Emergency Planning Zone
ExPlan	Exercise Plan
FEMA	Federal Emergency Management Agency
HSEEP	Homeland Security Exercise Evaluation Program
IP	Improvement Plan
KI	Potassium Iodide
MS-1	Medical Services
MSEL	Master Senario Events List
NRC	Nuclear Regulatory Commission
ORO	Offsite Response Orgainzation
PRD	Permanent Record Dosimeter
RAC	Radiological Assistance Committee
REA	Radiation Emergency Area
REPP	Radiological Emergency Preparedness Program
RERP	Radiological Emergency Response Plan
RPCC	Radiological Preparedness Coordinating Committee
TCL	Target Capabilities List
TEP	Training and Exercise Plan
UTL	Universal Task List

APPENDIX C: EXERCISE PLAN

NATIONAL EXERCISE PROGRAM

Exercise Plan

2011 West Virginia / Beaver Valley Power Station
FEMA Evaluated MS-1 Drill

FEMA

Exercise Date: May17, 2011

PREFACE

The 2011 West Virginia Beaver Valley Power Station MS-1 Drill 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, 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 2011 West Virginia 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.

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 the *2011 West Virginia Beaver Valley Power Station MS-1 Drill 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. Reproduction of this document, in whole or in part, without prior approval from the Exercise Planning Director is prohibited.
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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West Virginia Beaver Valley Power Station FEMA Evaluated MS-1 Drill

U.S. DEPARTMENT OF HOMELAND SECURITY

CHAPTER 1: GENERAL INFORMATION

Introduction

The 2011 Beaver Valley Power Station MS-1 Drill is a full-scale exercise (FSE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. An FSE 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 Exercise Planning Team. The 2011 West Virginia Beaver Valley Power Station MS-1 Drill is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

Confidentiality

The 2011 West Virginia 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. This ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbooks are restricted documents 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 Emergency Management Agency 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 elements described in the 67 FR 20580 (April 25, 2002) and Interim Radiological Emergency Preparedness (REP) Program Manual (August 2002) to develop this exercise.

The objective of the Federal Emergency Management Agency and the Pennsylvania Emergency Management Agency 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 (EPT) from the priority capabilities identified in Pennsylvania Multi-Year TEP and the FEMA Interim Radiological Emergency Preparedness Program Manual (August 2002), 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 and 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 exercise are those that are required to be demonstrated in every MS-1 Drill, as required by 67 FR 20580 (April 25, 2002) and the *Interim REP Program Manual (August 2002).* Appendix B Extent of Play shows the emergency preparedness elements that are required to be demonstrated in the 2011 West Virginia Beaver Valley Power Station MS-1 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 were no Areas Requiring Corrective Action (ARCAs) as a result of the previous FEMA-evaluated MS-1 Drill.

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The 2011 West Virginia Beaver Valley Power Station MS-1 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 2011 West Virginia Beaver Valley Power Station MS-1 Drill will be conducted on May 17, 2011.

Exercise play on May 17th is scheduled to begin at 0800. The exercise may conclude when the Lead Controller in consultation with FEMA and the Utility 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 West Virginia Beaver Valley Power Station MS-1 Drill:

- The exercise will be graded against the REPP 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:

- Players will utilize normal, everyday communications methods, channels, and equipment.
- 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 players' 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 are members of the Region III REP Program staff, representatives of the Radiological Assistance Committee, and contractors. 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. Observers do not play in the exercise, and do not perform any control or evaluation functions. Observers will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. County observers will be present at selected locations as assigned by the Lead Controller. Any V.I.P.s or other visitors will be handled by each agency or location (Municipal EOC, County EOC, etc.) according to that agencies policies and procedures.

- *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 Handbooks

Due to the brevity of this drill, the controller handbook is and integral part of the Extent of Play and is designed to help exercise Controllers conduct an effective exercise. The Handbooks also enable 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.

Notifications will go out from Controllers in the same manner as they would in a real event with all communications being preceded and terminated by the phrase "This is a Drill".

Exercise Implementation

Exercise Play

Exercise play will begin at approximately 0800, May 17, 2011 with a situation update going to each participating venue. Play will proceed according to the events outlined in the MSEL, 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 FEMA and the Utility.

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 2011 West Virginia Beaver Valley Power Station MS-1 Drill come from different 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 provide aid within their training, call the County 911 Center for additional aid or enlist the aid of another

person to call, and advise the nearest controller. Anyone calling County 911 will use the phrase "this is not a drill" prior to explaining the injury or illness.

- The controller who is made aware of a real emergency will contact the County 911 center (if this call has not already been made) and request the appropriate aid. The controller will use the phrase "this is not a drill" prior to explaining the injury or illness.
- The controller will then contact the Lead Controller and Exercise Director with the following information:
    - Venue/function
    - Location within the venue/function
    - Condition of injured parties
    - Requirements for medical aid, fire suppression, rescue, or security resources.

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 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

Exercise play for the 2011 West Virginia Beaver Valley Power Station MS-1 Drill will be conducted at two sites with varying degrees of security requirements. Individual Site Controllers will be in charge of entry into their respective exercise sites. To prevent confusion and interruption of the exercise, access to the exercise sites will be limited to exercise participants and approved Observers 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.

Parking and Directions

Directions to each venue area are available from the Lead Controller. Parking will be controlled according to existing policy at each individual location.

Restroom Facilities

Restroom facilities will be available at each venue.

Exercise Identification

Exercise participants will display their existing organizational identification badges.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The exercise is scheduled to run for 4 hours or until the Lead Controller after consultation with FEMA and the Utility determine that the exercise objectives have been met. The exercise is scheduled to end by 1200. The Lead Controller will announce the exercise suspension or termination.

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

Player Communication

Players will use routine, in-place agency communication systems. All exercise communication over primary dispatch channels will cease immediately if a real world emergency is announced. Communications concerning a real world emergency will be preceded by the phrase "This is not drill". In no instance will exercise communication interfere with real-world emergency communications. Exercise communication over these channels will recommence when authorized by the Exercise Director after he is advised by County 911 that it is safe to do so. 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 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.

Public Affairs

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

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 2011 Beaver Valley Power Station (BVPS) MS-1 Drill is the FEMA Region III REP Site Specialist.

Trusted Agents

Trusted agents are exercise planners who are responsible for developing the Scenario and the Master Scenario Events List (MSEL). These documents are restricted and are not available to Players, or other Participants.

Lead Controller

The Lead Controller also functions as a Trusted Agent. As such he is involved in developing the Master Scenario Events List and is privy to the scenario used to generate exercise play. 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.

Controllers

At least one controller will be onsite with every facility participating in the exercise. The 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 MSEL.

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the 2011 West Virginia 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 REP Site Specialist.

Evaluators

Evaluators work under the direction of the Lead Evaluator, and as a team with Controllers. Evaluators are Subject Matter Experts 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.
- Arrive at the exercise location as instructed. 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 a drill". This is a precaution taken so anyone overhearing the conversation will not mistake the exercise play for a real-world emergency.
- When communicating with the SimCell, 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 a debriefing with the controllers and evaluators.
- 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 AAR.

Simulation Guidelines

Because the 2011 West Virginia Beaver Valley Power Station MS-1 Drill 1 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, provide assistance up to the level of your training, call 911 and use the phrase "This is not drill" and ask for the appropriate assistance, and notify the nearest Controller and Evaluator.

CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

The goal of the 2011 West Virginia 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.

Exercise Evaluation Guides

DHS has developed Exercise Evaluation Guides (EEGs) that identify expected activities for evaluation, provide consistency across exercises, and link individual tasks to disciplines and expected outcomes.

The EEGs selected by the Exercise Planning Team are contained in the evaluator materials packet along with the Evaluator Handbook. These EEGs have been selected because the activities they describe can be expected to be observed during the exercise and will guide evaluation to match the exercise design objectives. Supplemental REP evaluation material designed for the exercise may also be used.

Debriefing/Hotwash

Immediately following the completion of exercise play, Controllers will facilitate a debriefing/Hotwash with Players from their assigned location. This 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 debriefing/Hotwash should not last more than 30 minutes. Evaluators should take notes at this time and include these observations in their analysis.

Participants and Public/Media Briefings

Participants and Public/Media Briefings are not routinely facilitated subsequent to MS-1 Drills. Questions about drill activities and results will be referred to the FEMA External Affairs Office.

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 the lead Federal Evaluator.

After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the 2011 West Virginia 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), if required.

After Action Conference

The After Action Conference (AAC) is a forum for 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. The After Action Conference will be conducted via conference call.

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 2011 West Virginia Beaver Valley Power Station MS-1 Drill participating agency officials during the AAC.

APPENDIX A: EXERCISE SCHEDULE

Table A.1 *MS-1 Drill Schedule*

Time (Tentative)	Personnel	Activity
May 17, 2011		
0700	Exercise Staff Assembly	Exercise Briefing
0730	Hospital Maintenance Staff	Setup REA
0800	Exercise Participants	Begin Exercise
1130	Exercise Staff Assembly	Exercise Debriefing/Hotwash

APPENDIX B: EXTENT OF PLAY INFORMATION

BEAVER VALLEY POWER STATION
WEIRTON HOSPITAL MEDICAL SERVICES DRILL
May 17, 2011

Method of Operation

1. The Beaver Valley Power Station (BVPS):
   The power station and its personnel will not play an 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 preapproved scenario will be used.

2. West Virginia Division of Homeland Security and Emergency Management (WVDHSEM) Emergency Operations Center (EOC) will not participate in this drill.

3. Counties Designated to Participate:
   Hancock County will provide pre-drill coordination and observe drill activities.

4. Controllers:
   Controllers will be supplied by BVPS. 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.

5. Brooke County Observers:
   Brooke County 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.

6. 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.

7. Drill Activities Schedule:
Drill activities are scheduled to commence on or about 0800, May 17, 2011 and continue until the participants have completed the drill objectives and demonstrated the Exercise Evaluation Criteria.

8. Stand Down:
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.

9. General concepts
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.

10. Re-demonstration
During the drill any activity that is not satisfactorily demonstrated may be re-demonstrated 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. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. 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.

BEAVER VALLEY POWER STATION
WEIRTON MEDICAL CENTER MS-1 DRILL
May 17, 2011

Extent of Play Agreement

Evaluation Area 1

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, including air sampling flow meters (field teams only), 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 the calibration frequency may be verified by other means. Additionally, instruments being used to measure activity should have a range of reading 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 dosimeters 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 *(Direct Reading Dosimeters)* 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 and distribute 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.

Negotiated Extent of Play:

Ambulance crews are not trained or equipped to operate or carry radiological monitoring equipment. In accordance with 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 SOP protective measures at minimum. Direct Reading Dosimeters (DRDs) 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

Evaluation Area 3

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.

B)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.

Negotiated Extent of Play:

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.

The hospital and emergency workers are outside the EPZ.

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. In order to demonstrate an understanding of the use of the dosimetry equipment, KI and associated forms; the location need only remove and distribute / issue a maximum of six (6) units of dosimetry from their inventory. Simulation PRDs with mock serial numbers may be used.

Evaluation Area 6

Sub-element 6.d.1 – Transportation and Treatment of Contaminated Injured Individuals

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) provide that arrangements ae made for medical services for contaminated injured individuals.

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

EXTENT OF PLAY

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

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for response to the victim. However, to avoid taking an ambulance out of service for an extended time, OROs may use any vehicle (e.g., car, truck, or van) 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 should occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. In addition, 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 or en route, or may be 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 treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, follow appropriate decontamination procedures, and maintain records of all survey measurements and samples taken. All procedures for collection and analysis of samples and decontamination of the individual should be demonstrated or described to the evaluator. Waste water from decontamination operations does not need to be collected.

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

ARTICLE I. WEIRTON MEDICAL CENTER

Section 1.01 MEDICAL SERVICES EXERCISE

May 17, 2011

EXERCISE SUMMARY

The purpose of this exercise is to demonstrate the capabilities of the emergency response organizations in handling a contaminated, injured person.

The exercise is designed to satisfy Weirton Medical Center's requirement for an emergency drill and the Federal Emergency Management Agency's Guidance Memorandum MS-1, "Medical Services ".

The scenario will be driven by the lead controller at the hospital. Controllers will also play in the field.

PARTICIPANTS

Weirton Medical Center
New Cumberland Ambulance

CONTROLLERS

FirstEnergy Nuclear Operating Company

OBSERVERS

West Virginia Division of Homeland Security and Emergency Management

West Virginia Department of Health and Human Resources

Hancock County Office of Emergency Management

Brooke County Emergency Management Agency

EVALUATORS

Federal Emergency Management Agency

SCHEDULE OF EVENTS

NEW CUMBERLAND AMBULANCE COMPANY

8:00 AM Exercise begins.

8:00 AM Ambulance Company is notified that Beaver Valley Power Station has declared a Site Area Emergency.

8:20 AM Ambulance Company is notified that Beaver Valley Power Station has escalated to a General Emergency.

8:25 AM An ambulance is requested to report to the accident staging area to pick up an injured and potentially contaminated individual.

* 8:50 AM Ambulance leaves for Weirton Medical Center.

AMBULANCE WILL RESPOND WITHOUT SIRENS AND LIGHTS.

* 9:10 AM Ambulance arrives at the hospital and the patient is removed from the ambulance. The ambulance is sent (simulated) to the Emergency Worker Decontamination Center.

WEIRTON MEDICAL CENTER

8:00 AM Exercise begins.

8:00 AM The hospital is notified that Beaver Valley Power Station has declared a Site Area Emergency.

8:20 AM The hospital is notified that the emergency at the Beaver Valley Power Station has escalated to a General Emergency.

8:55 AM The hospital is notified that a person has been injured who is potentially contaminated.

* 8:50 AM The hospital is notified that the ambulance is enroute with the ETA of 20 minutes.

* 9:10 AM The patient arrives at the hospital.
* 9:55 AM Exercise Ends.
* 10:00 AM Critique.
* Times may vary. Starting time is subject to change.

OBJECTIVES

WEIRTON MEDICAL CENTER

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

2. Demonstrate appropriate procedures and equipment to manage radiological exposure to staff.

3. Demonstrate the ability utilize dosimetry, equipment and procedures to manage radiological exposure to emergency workers.

4. Complete appropriate paperwork to document and record readings and assigned dosimetry.

NEW CUMBERLAND AMBULANCE

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

NOTE: The Weirton Medical Center Radiological Emergency Response Plan assigns radiological monitoring of the patient to the Hospital.

NOTE: Monitoring of ambulance personnel and vehicle is the responsibility of the Emergency Worker Decontamination Center.

NOTE: Players will be pre-staged for the start of the exercise.

SCENARIO

8:00 AM The Emergency Room Charge Nurse at Weirton Medical Center is notified that Beaver Valley Power Station has declared a Site Area Emergency and begins preparations for handling potentially contaminated individuals.

8:00 AM New Cumberland Ambulance is notified that Beaver Valley Power Station has declared a Site Area Emergency and begins preparations for handling potentially contaminated individuals.

8:20 AM Weirton Medical Center is notified that the emergency at Beaver Valley Power Station has escalated to a General Emergency.

8:20 AM New Cumberland Ambulance is notified that the emergency at Beaver Valley Power Station has escalated to a General Emergency.

8:25 AM New Cumberland Ambulance is requested to report to the accident staging area (Squad parking lot or garage) to pick up an injured patient. The patient is conscious and has potentially contaminated wounds.

8:25 AM Weirton Medical Center is notified that a person has been injured who is potentially contaminated.

8:50 AM Ambulance leaves for the hospital.

8:50 AM Weirton Medical Center is notified that the ambulance is enroute.

9:10 AM Ambulance arrives at the hospital and the patient is removed from the ambulance. The ambulance is sent (simulated) to the Emergency Worker Decontamination Center.

9:50 AM After the patient is stabilized and decontaminated, clean-up of the Emergency Room area begins (clean-up may be explained rather than demonstrated).

9:55 AM Exercise ends.

10:00 AM Critique.

Time listed is variable and subject to change

CONTROLLER PROMPTS

8:00 AM **Ambulance Company Controller** provides notification that the plant has declared a Site Area Emergency.

8:20 AM **Ambulance Company Controller** provides notification that the plant has declared a General Emergency.

8:25 AM **Ambulance Company Controller** provides notification to the Ambulance Company that a person has been injured; the extent of injuries is not known at this time, but it is known the patient is possibly contaminated. The injured is at the accident staging area (parking lot or garage of the Ambulance Squad).

* During assessment of the patient at the Accident Staging Area, inform the EMT of the injuries as indicated by Attachments 1 and 2 (Page A-1 and A-2).

8:50 AM **Ambulance Company Controller** releases the ambulance to leave for Weirton Medical Center at this time. Caution the driver not to use his emergency lights or siren. Ambulance should obey all traffic regulations in transit.

9:10 AM Release the patient from the ambulance at this time.

8:00 AM **Weirton Medical Center Controller** notifies the ER Charge Nurse that the plant has declared a Site Area Emergency.

8:20 AM **Weirton Medical Center Controller** notifies the Hospital that the plant has declared a General Emergency.

8:25 AM **Weirton Medical Center Controller** provides notification to the Hospital that a person has been injured; the extent of injuries is not known at this time, but it is known the patient is possibly contaminated. The injured is at the accident staging area (parking lot or garage of the New Cumberland Ambulance Service).

8:50 AM **Weirton Medical Center Controller** provides notification that the ambulance is enroute.

9:10 AM Patient arrives at the Hospital.

(a) CONTROLLER ASSIGNMENTS

New Cumberland Ambulance	Bill Mahan	724-624-1344
Weirton Medical Center	Sam Paletta	724-495-9945

(b) TELEPHONE NUMBERS/ADDRESSES

Weirton Medical Center

New Cumberland Ambulance

Please begin and end all telephone conversations with

"THIS IS A DRILL".

ATTACHMENT 1

INJURED PERSON DATA

Situation: Emergency Worker assigned to vehicle decontamination trips over a fire hose and lands against a curb.

Injuries: The victim has a broken right ankle (not immediately known without X-rays) and is complaining of great pain in the area. The victim's right elbow/forearm area is also abraded and bruised. The right knee is bruised and abraded.

Blood Pressure:	100/60
Pulse:	90
Breathing:	22
Temperature:	Normal
Skin:	Pale
No Nausea	
Vision:	Clear, eyes equal and reactive

Patient may give own answer on all other queries.

Contamination:

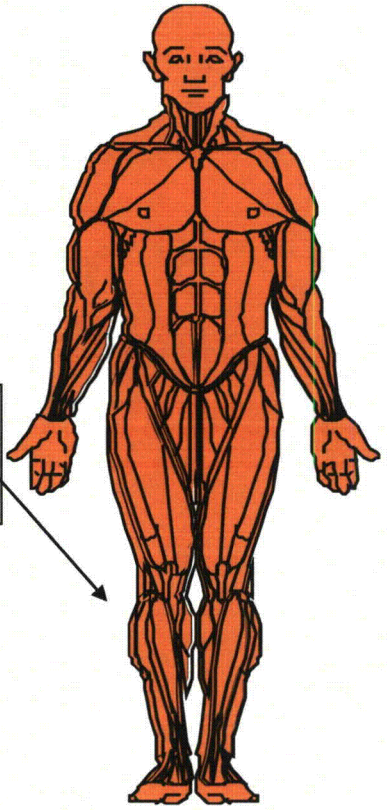
A. Contamination readings of 1600 cpm on right knee. Removal of pant legs eliminates reading.

B. Broken right ankle.

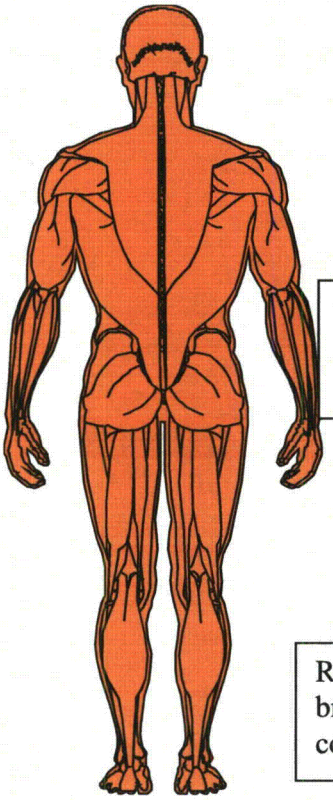
C. Right elbow bruised and abraded. Contamination of 1800 cpm. First decon attempt decreases readings to 800 cpm. Second attempt results in less than 100 cpm.

ATTACHMENT 2

INDICATES AREAS OF CONTAMINATION/INJURY



1600 CPMs on outer pants leg



Right elbow is bruised and abraded. 1800 CPMs

Right ankle is broken. NO contamination

Removal of outer garments eliminates contamination on right leg.

Right elbow is reading 1800 cpms on initial reading. First decon attempt decreases reading to 800 cpm. Second decon attempt results in reading of less than 100 cpm.

Right ankle is broken. No contamination identified.

APPENDIX D: IMPROVEMENT PLAN

Because there were no "Deficiencies, Areas Requiring Corrective Action, or Planning Issues," an Improvement Plan is not applicable to this report.

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