Susquehanna Steam Electric Station
Geisinger Wyoming Valley Medical Center
After Action Report/Improvement Plan

May 22, 2023

FEMA

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Executive Summary

On April 20, 2023, a Medical Services Drill was conducted for the 10-mile Plume Exposure Pathway, Emergency Planning Zone (EPZ) around the Susquehanna Steam Electric Station (SSES) by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region 3. The most recent prior Medical Services Drill for this site was conducted on April 22, 2021.

The purpose of this SSES Medical Services Drill was to assess the State and local offsite response organizations' preparedness in responding to a radiological medical emergency. The Drill was held in accordance with FEMA's policies and guidance concerning the evaluation of State and local Radiological Emergency Response Plans (RERP) and procedures. The core capability demonstrated during this drill was: Public Health, Healthcare, and Emergency Medical Services: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania, Luzerne County, the Geisinger Wyoming Valley Medical Center, and the Plains Volunteer Ambulance Association who were evaluated during 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 as volunteers providing vital emergency services twenty-four (24) hours a day to the communities in which they live. Cooperation and teamwork of all the participants was observed during this Drill.

This report contains the final evaluation of the Medical Services Drill. The Commonwealth of Pennsylvania, Luzerne County, the Geisinger Wyoming Valley Medical Center, and the Plains Volunteer Ambulance Association demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There was no Level 1 Findings, one Level 2 Finding, and no Plan Issues as a result of this Drill. The Level 2 Finding was successfully re-demonstrated later during the exercise and is now closed.

Section 1 of this report, entitled Overview, presents the Exercise Planning Team and the Participating Organizations.

Section 2 of this report, entitled Design Summary, and includes the Purpose and Design, Objectives, Capabilities, and Activities, and the Scenario Summary.

Section 3 of this report, entitled Analysis of Capabilities contains detailed Exercise Evaluation and Results; a Summary Results of Evaluation; and Capability Target Demonstration and Evaluation Guidance Summary. Information on the demonstration for each jurisdiction or functional entity evaluated is presented in a jurisdiction-based, issue-only format.

Section 4 of this report, entitled Conclusion, is a description of FEMA's overall assessment of the capabilities of the participating organizations.

Section 1: Exercise Overview

1.1. Drill Details

Drill Name
Geisinger Wyoming Valley Medical Center 2023 Medical Services Drill

Type of Drill
Medical Services

Drill Date
April 20, 2023

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radioactive Contaminated/Injured Person

1.2. Planning Team Leadership

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1.3. Participating Organizations

Agencies and organizations of the following jurisdictions participated in the SSES 2023 Medical Services Drill:

State Jurisdiction

- Commonwealth of Pennsylvania
- Pennsylvania Emergency Management Agency

Risk Jurisdiction

- Luzerne County Emergency Management Agency

Private Organizations

- Geisinger Wyoming Valley Medical Center
- Plains Volunteer Ambulance Association

Section 2: Design Summary

2.1. Purpose and Design

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site radiological planning and response. FEMA's activities were 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 (REP) Program that was established following the Three Mile Island accident in March 1979.

44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees. FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

A. Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans and procedures developed by State and local governments,
B. Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments,
C. Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated December 7, 2015 (Federal Register, Vol. 81, No. 57, March 24, 2016) and,
D. Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:
    - U.S. Department of Commerce
    - U.S. Nuclear Regulatory Commission
    - U.S. Environmental Protection Agency
    - U.S. Department of Energy
    - U.S. Department of Health and Human Services
    - U.S. Department of Transportation
    - U.S. Department of Agriculture
    - U.S. Department of the Interior
    - U.S. Food and Drug Administration

Representatives of these agencies serve on the Region 3 Regional Assistance Committee (RAC), which is chaired by FEMA. A Radiological Emergency Preparedness Medical Services Drill was conducted on April 20, 2023, to assess the capabilities of State and local emergency preparedness organizations in implementing their Radiological Emergency Response Plans (RERP) and procedures to protect the public health and safety during a radiological emergency involving the Susquehanna Steam Electric Station.

The purpose of this exercise report is to present the drill results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency involving a contaminated injured individual.

The drill was designed to demonstrate and evaluate the responder's knowledge of patient and responder personal protective measures, equipment preparation and employment, and decontamination procedures. All activities were demonstrated in accordance with the

participants' plans and procedures as they would be performed in an actual emergency, except as agreed to in the Exercise Plan and Extent-of-Play (EOP) Agreement.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region 3 Regional Assistance Committee (RAC) Chairperson and approved by FEMA Headquarters. These reports are provided to the Nuclear Regulatory Commission (NRC) and participating States. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency response capabilities.
The criteria utilized in the FEMA evaluation process are contained in the following:

- NUREG-0654/FEMA-REP-1, Rev. 2, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," December 2019; and
- Radiological Emergency Preparedness Program Manual, December 2019

2.2. Core Capabilities and Objectives

The Susquehanna Steam Electric Station Medical Services Drill evaluated by FEMA was designed to demonstrate that the ORO can transport, transfer, monitor, decontaminate and treat a contaminated/injured person while minimizing any cross contamination during a radiological emergency. Core capabilities-based planning allowed the exercise planning team to develop the objective and observe associated outcomes through a framework of specific action items. Additionally, the objective and capability target assessed met Radiological Emergency Preparedness Program Manual guidance. The core capability demonstrated during this drill was:

- Public Health, Healthcare, and Emergency Medical Services: Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

This core capability, when successfully demonstrated, met the drill objective. The objectives for this drill were:

- Objective 1: Mobilization
- Objective 2: Exposure Control
- Objective 5: Operate

The capability targets for this drill were:

- Capability Target 1.2: Direction and Control
- Capability Target 2.2: Emergency Worker Exposure Control Management
- Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals

2.3. Scenario Summary

The scenario began at 0902 with a notification to the Geisinger Wyoming Valley Medical Center (GWVMC), and the Plains Volunteer Ambulance Association via an exercise controller, that a Site Area Emergency (SAE) Emergency Classification Level (ECL) was declared at the Susquehanna Steam Electric Station (SSES).

At 0912 the GWVMC was notified that a General Emergency ECL was declared at SSES, and that an evacuation was ordered. A citizen trying to evacuate fell on the ground near the power

plant landing on her left wrist and the right side of her face causing abrasions and bleeding from her face and nose. Not wanting to leave her private vehicle behind she drove herself to the nearest reception center and reported that she fell near the plant.

At 0921 the Plains Volunteer Ambulance Association Emergency Medical Services (EMS) personnel were directed to pick-up the patient at the reception center for transport to the hospital. At 0935 the hospital was notified that the EMS were enroute with a potentially contaminated patient and provided an estimated arrival time of fifteen (15) minutes.
At 0946 the ambulance arrived at the hospital. In preparation for receiving the patient, the hospital Medical Health Physicist mobilized the Radiation Emergency Area (REA) staff and conducted a radiological safety briefing to the hospital staff along with a set-up of the hospital REA prior to the patient's arrival.

The patient was appropriately treated for injuries and was decontaminated prior to release from the hospital. The exercise was terminated at 1030.

Section 3: Analysis of Capabilities

3.1. Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the April 20, 2023, Susquehanna Steam Electric Station Medical Services Drill. The Drill was conducted to demonstrate the ability of the OROs to respond to a potentially contaminated injured person.

Each jurisdiction and functional entity were evaluated on the basis of their demonstration of the appropriate Demonstration and Evaluation Guidance contained in the REP Program Manual. Detailed information on the Demonstration and Evaluation Guidance, and the Extent-of-Play Agreement is found in Appendix C.

The Drill was conducted and evaluated in accordance with the Radiological Emergency Preparedness Program Manual (December 2019) and NUREG-0654/FEMA-REP-1, Rev. 2. These Capability Targets included:

- Capability Target 1.2 - Direction and Control, equipment, maps, displays, monitoring instruments, dosimetry, Potassium Iodide (KI) and other supplies are sufficient to support emergency operations.
- Capability Target 2.2 - Emergency Worker Exposure Control Management
- Capability Target 5.3 - Transportation and Treatment of Contaminated, Injured Individuals

3.2. Summary Results of Evaluation

The matrix presented in Table 3.1, on the following pages, presents the status of the Capability Targets from the REP Program Manual that were scheduled for demonstration during this Drill by all participating jurisdictions and functional entities. Drill Demonstration and Evaluation Guidance are listed by number and the demonstration status of the criteria is indicated by the use of the following letters:

- (L1) Level 1 Finding: An observed or identified inadequacy of organizational performance in an assessment activity that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant.
- (L2) Level 2 Finding: An observed or identified inadequacy of organizational performance in an assessment activity that is not considered, by itself, to adversely impact public health and safety.
- (P) Plan Issue: An observed or identified inadequacy in the off-site response organizations' emergency plan/implementing procedures, rather than that of the ORO's performance.
- (N) Not Demonstrated: The term applied to the status of a REP Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the Extent-of-Play Agreement or at the two-year or eight-year interval required in the FEMA REP Program Manual.
- (M) Met: The status of a REP Evaluation Area Criterion indicating that the participating ORO demonstrated all demonstration criteria for the Evaluation Area Criterion to the level required in the Extent-of-Play Agreement with no findings assessed in the current exercise and no unresolved prior findings.

Table 3.1: Summary of Drill Evaluation

Date: April 20, 2023 Site: Susquehanna Steam Electric Station (M) Met, (1) Level 1 Finding, (2) Level 2 Finding, (P) Planning Issue	Capability Targets	Geisinger Wyoming Valley Medical Center	Plains Volunteer Ambulance
Objective 1: Emergency Operations Management Direction and Control, Facilities, Equipment, Supplies to Support Operations	1.2	M	M
Objective 2: Exposure Control Emergency Worker Exposure Control Management	2.2	L2	M
Objective 5: Operate Transportation/Treatment of Contaminated, Injured Individuals	5.3	M	M

3.3. Criteria Evaluation Summaries

In summary, the status of DHS/FEMA criteria for the Private Sector Organizations are as follows:

3.3.1 Private Organizations

3.3.1.1 Geisinger Wyoming Valley Medical Center

a. Met: 1.2, 5.3
b. Level 1 Findings: NONE
c. Level 2 Findings: ONE (closed)

ISSUE NO: 63-23-2.2-L2-001

CAPABILITY TARGET: 2.2 Exposure Control

CONDITIONS: Hospital staff at the Geisinger Wyoming Valley Medical Center (GWVMC) did not take measures to prevent the potential for cross-contamination while transferring the patient from the ambulance. Specifically, medical staff exited the clean area to assist in removing a potentially contaminated patient from the step off pad behind the ambulance and were not monitored by the health physicists upon exiting a potentially contaminated area. The health physicists were not wearing protective clothing during the movement of the patient, nor did they scan themselves for contamination, creating an additional cross contamination concern.

POSSIBLE CAUSE: The health physicists did not reference their procedures during the exercise, nor did they provide proper donning guidance and oversight to staff to avoid cross contamination.

REFERENCES:

- NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1)
- Draft GWVMC Hospital Plan for Decontamination and Treatment of the Radiologically Contaminated Patient, dated February 9, 2023.

EFFECTS: By not adhering to sound contamination prevention protocols, radioactive contamination could possibly be spread to other staff members and/or within the hospital itself.

CORRECTIVE ACTION: Prior to the termination of the exercise, a re-demonstration of the transfer of a potentially contaminated patient from the ambulance to the REA was successfully completed. The re-demonstration successfully resolves the Level 2 Finding and it is now closed.

d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.2 Plains Volunteer Ambulance Association

a. Met: 1.2, 2.2, 5.3
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

Section 4: Conclusion

The Commonwealth of Pennsylvania and private sector organizations demonstrated knowledge of their radiological emergency response plans and procedures and they were successfully implemented during the Susquehanna Steam Electric Station Medical Services Drill evaluated on April 20, 2023.

Two FEMA evaluators provided analyses of the core capability: Public Health, Healthcare, and Emergency Medical Services, as well as three capability targets: Direction and Control; Emergency Worker Exposure Control Management; and Transportation/Treatment of Contaminated, Injured Individuals. These analyses resulted in a determination of no Level 1 Findings, one Level 2 Finding, no new Plan issues, and no unresolved Plan Issues. The Level 2 Finding was successfully re-demonstrated later during the exercise and is now closed.

The Plains Volunteer Ambulance Association successfully demonstrated that necessary equipment and supplies were available to support the treatment of an injured/contaminated patient, and prioritized life-saving medical practices over contamination concerns, implemented protective measures through the use of personal protective equipment, regular glove changes, and control of cross contamination. Appropriate patient assessments were demonstrated as well as regular and ongoing communications with the Geisinger Wyoming Valley Medical Center.

The Geisinger Wyoming Valley Medical Center successfully demonstrated the mobilization of staff, staffing assignments, issue of dosimetry and monitoring equipment, and effective use of personal protective equipment during the exercise. The hospital staff effectively responded to communications from the Plains Volunteer Ambulance Association, initiated the set-up and management of a Radiation Emergency Area, accepted, and successfully treated an injured/contaminated patient while administering life-saving medical attention over contamination concerns. In addition, the medical facility provided security control of the facility and overall protective measures for contamination control and prevention of cross-contamination.

Based on the results of the Drill and a review of the offsite radiological emergency response plans and procedures submitted, FEMA Region 3 has determined they are adequate (meeting the planning and preparedness standards of NUREG-0654/FEMA-REP-1, Revision 2, December 2019, as referenced in 44 CFR 350.5) and there is reasonable assurance they can be implemented, as demonstrated during this Drill.

An Improvement Plan (IP) will not be developed as part of this report.

Appendix A: Exercise Evaluators

The following is the list of Evaluators for the Susquehanna Steam Electric Station Medical Services Drill evaluated on April 20, 2023. The following constitutes the managing staff for the evaluation:

- Kathy Duran, DHS/FEMA, Emergency Management Specialist
- Zachary Corle, DHS/FEMA, Emergency Management Specialist

Location	Evaluator	Agency
Geisinger Wyoming Valley Medical Center	Kathy Duran	FEMA Region 3
Plains Volunteer Ambulance Association	Zachary Corle	FEMA Region 3

Appendix B: Extent-of-Play Agreement

The Extent-of-Play Agreement was extracted from the Exercise Plan, which was drafted by the Pennsylvania Emergency Management Agency, and is included in this report as an Appendix. The Extent-of-Play was negotiated and agreed upon by FEMA Region 3, and the Pennsylvania Emergency Management Agency.

The Exercise Plan was created as an overall tool for facilitation and implementation of the Susquehanna Steam Electric Station Medical Services Drill and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology.

NATIONAL EXERCISE PROGRAM

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Preface

The 2023 Susquehanna Steam Electric Station Evaluated Medical Services Exercise (MS-1) is sponsored by the 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 by FEMA, Homeland Security Exercise and Evaluation Program (HSEEP).

The MS-1 Exercise design and development process will include establishing an EPT led by the Commonwealth, with representatives from the licensee, offsite response organizations (OROs), and FEMA REP Regional staff to include identification of trusted agents that have access to confidential exercise-specific information.

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 2023 Susquehanna Steam Electric Station MS-1 Exercise 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 2023 Susquehanna Steam Electric 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, stored in an 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 2023 Susquehanna Steam Electric Station MS-1 Exercise 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. An FE 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 FEMA with the input, advice, and assistance of the Commonwealth. The 2023 Susquehanna Steam Electric Station MS-1 Exercise is evidence of the growing partnership between state and local jurisdictions for response to the threats our Nation and communities.

Confidentiality

The 2023 Susquehanna Steam Electric Station MS-1 Exercise 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) 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 FEMA and the EPT.

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 planning standards of NUREG-0654/FEMA-REP-1, Rev. 2. Exercise planners utilized the elements described in the 67 FR 20580 (April 25, 2002) and Radiological Emergency Preparedness (REP) Program Manual (December 2019) to develop this exercise.

The objective of FEMA, PEMA, and local jurisdictions is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

Capability Targets

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 Capabilities Target List (CTL) 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 Integrated Preparedness Workshop (IPW), of which this exercise is a component.

Capability Targets for this exercise have been identified from the listing below and selected by the EPT for evaluation from the Capability Targets identified in the Pennsylvania IPW, 2019 REP Program Manual, based on required exercise frequency and noted in the Extent of Play Agreement (EOPA). These Capability Targets 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.

- Capability Target 1.2: Direction and Control
- Capability Target 2:2: Emergency Worker Exposure Control Management
- Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals

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 Exercise, per 67 FR 20580 (April 25, 2002) and the REP Manual (December 2019). Appendix B, Method of Operations and Extent of Play, shows the emergency preparedness elements that are required to be demonstrated in the 2023 Susquehanna Steam Electric Station MS-1 Exercise, 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).

Outstanding Issues

There are No Level 1, Level 2, or Planning Issues as a result of the FEMA-evaluated plume-phase exercise at Geisinger Wyoming Valley Medical Center MS-1 Exercise on April 22, 2021.

Chapter 2: Exercise Logistics

Exercise Summary

General

The 2023 Susquehanna Steam Electric Station MS-1 Exercise 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 2023 Susquehanna Steam Electric Station MS-1 Exercise will be conducted on April 20, 2023. Exercise play is scheduled for four (4) hours or until the Lead Controller, after consultation with the Lead FEMA Evaluator, determines 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 2023 Susquehanna Steam Electric Station MS-1 Exercise:

- The exercise will be graded against the REP Capability Targets. Elements outside the scope of the REP Capability Targets 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 methods made available for players to use during the exercise as negotiated in the Extent of Play Agreement.
- Out-of-Sequence play is allowed.
- Certain simulations are allowed as negotiated in the Extent of Play.

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 Handbook

The 2023 Susquehanna Steam Electric Station MS-1 Exercise 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. (For the 2023 Susquehanna Steam Electric Station MS-1 Exercise, the C/E Handbook will not be used.)

Extent-of-Play Agreement (EOPA)

The extent-of-play agreement will document and define the agreed-upon approach to demonstrating and evaluating the REP Program objectives/capability targets. These documents are intended to define the commitment of participants in advance and should outline those commitments, as well as the facilities to be evaluated or utilized and the anticipated level of participation. The extent-of-play agreement should also capture activities that may deviate in demonstration from plans and procedures as currently written, such as pre-staging personnel at or near a facility prior to activation during an exercise. These extent-of-play agreements will provide reliable information for developing the assessment activity and ensure appropriate 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 2023 Susquehanna Steam Electric Station MS-1 Exercise, the MSEL will not be used.

Exercise Implementation

Exercise Play

Exercise play will begin at approximately 0900 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 the 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 an exercise."*

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 2023 Susquehanna Steam Electric Station MS-1 Exercise 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 authorized 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 9-1-1, then, if possible, render 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 ***"Real-World Emergency"*** 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.
- 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 Senior Controller. The notification will be made from the SimCell.

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 FEMA 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 exercise 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 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 2023 Susquehanna Steam Electric Station MS-1 Exercise 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 MSEL. These documents are restricted and are not available to other members of the EPT, players, or other participants. The trusted agents for the 2023 Susquehanna Steam Electric Station MS-1 Exercise include the Exercise Director, Lead Controller, Talen Energy, Luzerne County, and the FEMA Site Specialist.

Lead Controller

The Lead Controller is responsible for the overall organization of the 2023 Susquehanna Steam Electric Station MS-1 Exercise. 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 exercise. 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 2023 Susquehanna Steam Electric Station MS-1 Exercise. 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 3 Site Specialist for the Susquehanna Steam Electric 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 organizations 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 AAR.

Simulation Guidelines

Because the 2023 Susquehanna Steam Electric Station MS-1 Exercise 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 2023 Susquehanna Steam Electric Station MS-1 Exercise 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, the SimCell, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

Players Critique

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

The improvement process represents the comprehensive, continuing preparedness effort of which the 2023 Susquehanna Steam Electric Station MS-1 Exercise 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), if required, will be 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 Improvement Plan (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 2023 Susquehanna Steam Electric Station MS-1 Exercise participating agency officials during the AAC scheduled within 60 days of the exercise.

Appendix A: Exercise Schedule

Table A

2023 Susquehanna Steam Electric Station MS-1 Exercise Schedule

Time (Tentative)	Personnel	Activity
[Date]		
0900	Plains Volunteer Ambulance Association, and Geisinger WVMC	Exercise Begins
1100	Geisinger WVMC	Exercise Ends
1130	All Exercise Participants	Critique and Debrief

Appendix B: Method of Operation and Extent of Play

SUSQUEHANNA STEAM ELECTRIC STATION
GEISINGER WYOMING VALLEY MEDICAL CENTER
MEDICAL SERVICES EXERCISE
APRIL 20, 2023

Method of Operation

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

2. PEMA, Central Area Office will not be activated as part of this exercise. The Exercise Coordinator will provide pre-exercise coordination and observe exercise activities.

3. PEMA Eastern Area Office and Talen Energy will participate as Controllers in this exercise.

4. Luzerne County will participate in this exercise.

5. Controllers will be supplied by PEMA. Controllers are not players and will provide injects and information to initiate and stimulate exercise 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), FEMA, Radiological Emergency Preparedness Program (REPP) Evaluators: FEMA Evaluators will be present at designated demonstration locations.

8. Exercise activities are scheduled to commence on or about 0900 on April 20, 2023 and continue until the participants have completed the exercise objectives and demonstrated the Exercise Capability Targets.

9. Participants and agencies will Stand Down when the Controllers have confirmed with the Evaluators that all evaluation capability targets 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, documented as a possible planning concern, and the appropriate negative assessment corrected.

11. During the exercise, 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. Re-demonstrations will be negotiated between the Players, Observers, Controllers, and Evaluators. PEMA may advise the Regional Assistance Committee 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.

12. The hospital incident command center will hold a separate but coordinated drill during the MS-1 exercise. All incident command center injects, and responses are for observation purposes only and will not require actions of the MS-1 participants nor be evaluated during the MS-1 drill.

Objectives

A. Demonstrate the ability to respond to a radiation medical emergency following the procedures of Luzerne County EMA, Plains Volunteer Ambulance Association, and the Geisinger Wyoming Valley Medical Center.

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 exercise 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.

OBJECTIVE 1 – Emergency Operations Management

Capability Target 1.2: Direction and Control *(Vice Sub-Element 1.b.1, 1.c.1, 1.e.1)*
Core Capabilities: Emergency Medical Services; Planning
Recommended Evaluation Frequencies: At every assessment activity
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.1, A.1.a, A.1.b, A.1.c, A.2, A.3, A.5, C.2, C.2.a, C.2.b, C.3, D.4, E.1, H.6, and O.1)
Intent: The capability to provide overall direction and control of response efforts, commensurate with the responsibilities of leadership, as detailed in plans/procedures.

Demonstration and Evaluation Guidance:

1. Conduct briefings in a timely manner.
   - Were briefings conducted in a timely manner?
   - What information was provided?

- How frequently were briefings held?
- Who gave the briefing?

2. Maintain situational awareness.
   - Did the ORO maintain situational awareness? How?
3. Coordinate response activities with other organizations.
   - Were response activities coordinated with other organizations? How?
4. Obtain resources to support emergency operations.
   - Were resources obtained to support emergency operations (e.g., through MOUs or other agreements)?
   - Was just-in-time training provided, as necessary?
5. Provide and maintain adequate facilities and equipment to support the emergency response.
   - Were facilities and equipment adequate to support operations? How so?
   - Was the facility evacuated during the plume? What means of monitoring and decontamination were used?

All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.

PEMA Negotiated Extent of Play:
Ambulance crews are not trained or equipped to operate or carry radiological monitoring equipment. In accordance with the PEMA SOP Annex E, Appendix 5 "Radiological Exposure Control" (March 2002), 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. Ambulance crews are provided additional dosimetry if they are tasked with entering the 10-mile EPZ. *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, or an Area Kit may be established in the Radiation Emergency Area (REA). Individual PRDs will be issued by the hospital. Radiological Survey Instruments are calibrated per manufactures recommendations.*

<u>OBJECTIVE 2 - Exposure Control</u>

Capability Target 2.2: Emergency Worker Exposure Control Management *(VICE Sub-Element 3.a.1)*
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, H.11.b, K.2.b, K.3, K.3.a, M.1.b, and O.1)
Intent: The capability of emergency workers to manage dose and exposure, use equipment (e.g., dosimetry, radio protective drugs), and identify procedures to monitor their exposure and dose, including following procedures to obtain authorization to receive emergency exposures in excess of the PAGs.

<u>Demonstration and Evaluation Guidance:</u>

1. Maintain an appropriate inventory of PRDs.
   - What type of PRDs were used?

- Was the inventory of available PRDs sufficient for the number of workers?
- How many PRDs were available?

2. Adequately distribute appropriate DRDs and PRDs.
   - Was dosimetry distributed in a timely manner?
   - Was dosimetry distributed appropriately to read identified exposure limits?
   - Did workers receive personal dosimetry or group dosimetry?
3. Record and report exposures in the field.
   - Did workers read and record dosimetry on a regular basis?
   - At what frequency were readings recorded?
   - To whom were the readings reported?
   - Who briefed emergency workers? Did the briefing include the following:
     - Ensuring dosimetry are zeroed or initial reading is recorded.
     - Frequency to read and record dosimeters.
     - The process of reporting exposures.
     - Proper placement of dosimeters.
     - Proper use of PRDs.
     - The location to report to for monitoring and decontamination.
4. Report to individual responsible for managing exposure and dose when limits are reached.
   - What was the identified exposure limit?
   - What was the dosimeter correction factor and how was it communicated to emergency workers?
   - What is the process for receiving approval for exceeding exposure limits and dose limits?
   - Who authorized emergency workers to exceed limits or replace a worker who has reached exposure limits?
   - Who coordinated with offsite emergency workers who were performing duties onsite?

All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.

PEMA 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

NOTE: *As per Annex E, Appendix 5, page E-5-35, "Emergency responders located outside the EPZ who, due to assigned taskings during a nuclear emergency, have limited potential for radiation exposure (e.g., monitoring/decontamination teams, MS-1 hospital staffs). Transporters of contamination or potentially contaminated individuals outside of the EPZ are not provided dosimetry.*

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.

OBJECTIVE 5 - Operate

Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals *(Vice Sub-Element: 6.d.1)*
Core Capabilities: Environmental Response/Health and Safety; Public Health, Healthcare, Emergency Medical Services; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Medical Services Drill (N.4.b)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.d, F.2, H.11, H.12, J.2, K.3, K.4, L.1, L.3, L.4, and O.1)
Intent: The capability to provide medical transport and treatment services to contaminated, injured individuals.

Demonstration and Evaluation Guidance:

Transportation

1. Transport contaminated, injured individuals to medical facilities.
   - Who dispatched the medical transport provider and what information was provided?
   - Did the appropriate briefings occur? What was contained in the briefings?
   - Which agency or agencies demonstrated the transportation of contaminated, injured individuals to appropriate medical facilities?
   - What type of vehicle was used for the transportation of the contaminated, injured individuals?
   - Was the site of pick-up in a potentially contaminated area? If so, what precautions were taken?
   - How did the medical transport provider know to take radiological precautions with the contaminated, injured individual?
   - Was the contaminated, injured individual monitored for radiological contamination before arrival or during initial evaluation by the transport provider?
   - Who did the monitoring?
   - What survey instruments were used?
   - Were the instruments current in calibration?
   - Did medical care take priority over monitoring?
   - Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
   - What contamination control measures were taken by the medical transport crew?
   - How was the patient transferred from the medical transport vehicle to the medical facility?
   - Were accident scene survey records transferred to the medical facility staff? Was the transfer made taking care not to spread contamination?
   - Was the medical transport crew knowledgeable about where the medical transport vehicle (or other transport vehicle) and crew would be monitored and decontaminated?
   - Where and by whom will the medical transport crew and medical transport vehicle (or other transport vehicle) be monitored and decontaminated, if required?
2. Maintain communications between the medical transportation provider and the receiving medical facility.

- What communications occurred between the medical transport crew and the receiving hospital? How?

Medical Facility

1. Operationally check instruments and equipment.
    - How were background measurements obtained on a continuous basis?
    - What survey instruments were used?
    - Were the instruments current in calibration?
    - Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
    - Was an appropriate radioactive check source used to verify proper operational response for each low-range radiation measurement instrument?
    - Did the receiving facility personnel don the appropriate PPE in accordance with procedures and in a manner to prevent the spread of contamination?
2. Set-up, activate, and operate an REA.
    - How was the hospital notified to establish a REA? With regard to the REA, what information was provided to the medical facility by the medical transport crew?
    - Were staff, equipment, and supplies readily available for monitoring and decontamination, and setting up the REA?
    - How was access into the REA controlled?
    - Did urgent medical care take precedence over monitoring, decontamination, and contamination control efforts by facility medical staff?
    - Who performed and/or supervised treatment of contaminated, injured individuals?
    - What equipment and supplies were available for treatment of contaminated, injured individuals?
    - How were items assured to be free of contamination before they were transferred out of the REA to the clean area?
    - After treatment and decontamination, how was the individual transferred out of the REA?
    - How did the staff exit the REA?
    - Was a doffing procedure correctly implemented?
    - Was the REA, and equipment within, monitored for contamination prior to returning it to normal operations?
3. Monitor and decontaminate the individual, equipment, and other items.
    - How were monitoring (i.e., survey measurements and samples) results documented and recorded?
    - Did the medical staff make decisions on the need for decontamination of the individual and follow appropriate decontamination procedures?
    - What contamination threshold triggers the need for decontamination of the individual?
    - What methods were used to decontaminate the potentially contaminated individual (once that person is medically stabilized)? Were decontamination methods progressive (e.g., mild decontamination used prior to scrubbing)?
    - What procedure was used if decontamination was not successful?
    - What methods were used to collect and analyze samples, including swabs and skin wipes?
    - Who did the monitoring? What equipment was used?
    - What records were maintained with regard to survey and decontamination?
    - What was the procedure for handling, decontaminating, and storage of contaminated items?
    - What was the action level to determine if equipment was contaminated or not?
    - Who decontaminated the equipment and other items?
    - How was wastewater from decontamination operations handled?
    - What contamination control measures were taken?

All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.

PEMA 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.* *Plains Volunteer Ambulance Association will pick-up a pre-staged simulated contaminated/injured patient. EMS Crews do not carry survey equipment therefore do not survey patients.*

Appendix C: Participating Agencies

See Appendix B, Method of Operations and Extent of Play.

Appendix D: Action Location Addresses

ACTION LOCATION ADDRESSES	
Venue	**Address**
Geisinger Wyoming Valley Medical Center	1000 East Mountain Boulevard Wilkes-Barre, PA 18711
Plains Volunteer Ambulance Association	185 Water Street Wilkes-Barre, PA 19711
Luzerne County Emergency Management Agency	185 Water Street Wilkes-Barre, PA 18711

Appendix E: Open Issues

No Open Issues

Appendix F: Acronyms

Acronym	Description
AAC	Accident Assessment Center
AAM	After-Action Meeting
AAR	After-Action Report
ACP	Access Control Point
ALARA	As Low As Reasonably Achievable
ALC	Annual Letter of Certification
ANS	Alert and Notification System
ANSI	American National Standards Institute
ARC	American Red Cross
ARES	Amateur Radio Emergency Services
A-Team	Advisory Team for Environment, Food, and Health
BRP	Bureau of Radiation Protection
BURA	Back Up Route Alerting
BVPS	Beaver Valley Power Station
BZ	Buffer Zone
CAD	Computer Aided Display
C/E	Controller and Evaluator
CED	Committed Effective Dose
CC	Core Capabilties
CCC	Congregate Care Center
CDC	U.S. Center for Disease Control and Prevention
CCL	Core Capabilities List
CCNP	Cisco Certified Network Professional
CCNPP	Calvert Cliffs Nuclear Power Plant
C/E	Controller Evaluator
CDE	Committed Dose Equivalent
CDV	Civil Defense Victoreen
CERC	Corporate Emergency Response Center
CERT	Community Emergency Response Team
CFR	Code of Federal Regulations
CNS	Commonwealth Notification System
C&O	Concepts and Objectives Meeting
CO	Communication Officer
COL	Combined Operating License
CPG	Comprehensive Preparedness Guide
CPM	Counts Per Minute
CRCC	Commonwealth Response Coordination Center
CST	Civil Support Team
DAC	Dose Assessment Coordinator
DAD	Digital Alarming Dosimetry
DAS	Director of Auxillary Services
DCPM	Disintegrating Counts Per Minute
DDHS	U.S. Department of Health and Human Services
DEMA	Delaware Emergency Management Agency
DHS	U.S. Department of Homeland Security

DIL	Derived Intervention Level
DIR	Disaster Initiated Review
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DRD	Direct Reading Dosimeter
DRF	Dosimetry Record Form
DRL	Derived Response Level
DSP	Delaware State Police
EA	Exception Area
EA	Exclusion Area
EA	External Affairs
EAC	Evacuation Assembly Center
EAL	Emergency Action Level
EARA	Exception Area Route Alerting
EAS	Emergency Alert System
EC	Emergency Coordinator
EEG	Exercise Evaluation Guide
ECL	Emergency Classification Level
ECO	Exposure Control Officer
EDE	Effective Dose Equivalent
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMnet	Emergency Management Network
EMS	Emergency Medical Services
ENS	Emergency Notification System
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPA	U.S. Environmental Protection Agency
EPT	Exercise Planning Team
EPZ	Emergency Planning Zone
ER	Emergency Room
ERDS	Emergency Response Data System
ERM	Emergency Response Manager
ERO	Emergency Response Organization
ERV	Emergency Response Vehicle
ESC	Emergency Services Coordinator
ESF	Emergency Support Function
ESP	Early Site Permit
ETA	Estimated Time of Arrival
ETE	Evacuation Time Estimate
EW	Emergency Workers
EWMDS	Emergency Worker Monitoring and Decontamination Station
ExPlan	Exercise Plan
FBI	Federal Bureau of Investigation
FCC	U.S. Federal Communications Commission
FD	Fire Department

FDA	U.S. Food and Drug Administration
FE	Functional Exerise
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FPE	Full Participation Exercise
FPM	Final Planning Meeting
FRMAC	Federal Radiological Monitoring Assessment Center
FRPCC	Federal Radiological Preparedness Coordinating Committee
FSE	Full Scale Exercise
FST	Field Sampling Team
FTC	Field Team Coordinator
GE	General Emergency
GIS	Geographic Information Systems
GM	Guidance Memorandum
G-M	Geiger-Mueller
GPS	Global Positioning System
Gy	Gray
HAB	Hostile Action Based
HAN	Health Alert Network
HHS	U.S. Health and Human Services
HazMat	Hazardous Materials
HF	High Frequency
HP	Health Physicist
HSEEP	Homeland Security Exercise and Evaluation Program
HSPD	Homeland Security Presidential Directive
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IP	Improvement Plan
IPAWS	Integrated Public Alert and Warning System
IPM	Initial Planning Meeting
IPZ	Ingestion Pathway Zone
IWP	Initial Warning Point
JIC	Joint Information Center
JIS	Joint Information System
KI	Potassium Iodide
LCD	Liquid Crystal Display
LEOF	Local Emergency Operations Facility
LGS	Limerick Generating Station
LHD	Local Health Department
LOA	Letter of Agreement
MCC	Mass Care Center
MDDT	Mobile Data Display Terminal
MDE	Maryland Department of Environment
MDEM	Maryland Department of Emergency Management
MDT	Mobile Data Terminals

MJOC	Media Joint Operations Center
MHz	Megahertz
MIDAS	Meteorological Information Dose Assessment System
MOU	Memorandum of Understanding
MS-1	Medical Services Hospital
MSEL	Master Scenario Events List
MSP	Maryland State Police
NAPS	North Anna Power Station
NAWAS	National Warning System
NEP	National Exercise Program
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NNSA	National Nuclear Security Administration
NOAA	National Oceanic and Atmospheric Administration
NPD	National Preparedness Directorate
NOUE	Notification of Unusual Event
NPP	Nuclear Power Plant
NPS	National Preparedness System
NRC	U.S. Nuclear Regulatory Commission
NRIA	Nuclear Radiological Incident Annex
NUREG	Nuclear Regulatory
NWS	National Weather Service
OCA	Owner Controlled Area
OJT	On-The-Job Training
OOS	Out of Sequence
ORH	Office of Radiological Health
ORO	Offsite Response Organization
OSC	Operations Support Center
OSD	Optically Stimulated Dosimeter
OSHA	U.S. Occupational Safety and Health Administration
OSLD	Optically Stimulated Luminescence Dosimeter
PA	Public Affairs
PAD	Protective Action Decision
PAG	Protective Action Guideline
PAR	Protective Action Recommendation
PARA	Primary Area Route Alerting
PAZ	Protective Action Zone
PCA	Preliminary Capabilities Assessment
PBAPS	Peach Bottom Atomic Powers Station
PD	Police Department
PDAFN	Persons with Disabilities/Access and Funtional Needs
PED	Personal Electronic Dosimeter
PEMA	Pennsylvania Emergency Management Agency
PII	Personally Identifiable Information
PIO	Public Information Officer
PPD	Presidential Policy Directive
PPE	Personal Protective Equipment
PPP	Post-Plume Phase

PRA	Primary Route Alerting
PRD	Permanent Record Dosimeter
PS	Planning Standard
PSP	Pennsylvania State Police
R	Roentgen
RA	Regional Administrator
R/h	Roentgen per hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RAD	Radiation Absorbed Dose
RAO	Radiation Assessment Officer
RC	Reception Center or Relocation Center
RDO	Radiation Defense Officer
REA	Radiation Emergency Area
REC	Radiation Exposure Control
REM	Roentgen Equivalent Man (rem)
REP	Radiological Emergency Plan
REPP	Radiological Emergency Preparedness Program
RERP	Radiological Emergency Response Plan
RHP	Radiological Health Program
RML	Radiological Mobile Laboratory
RO	Radiological Officer
ROO	Radiological Operations Officer
RPM	Radiological Emergency Preparedness Program Manual
RSO	Radiation Safety Oficer
RTF	Radiological Task Force
SA	Staging Area
SAC	Staging Area Coordinator
SAE	Site Area Emergency
SAIC	Science Applications International Corporation
SAM	Staging Area Manager
SAV	Staff Assistance Visit
SCBA	Self-Contained Breathing Apparatus
SEOC	State Emergency Operations Center
SERS	State Emergency Radio System
SEVAN	State Emergency Voice Activation Network
SFMT	State Field Monitoring Team
SHC	Salem Hope Creek
SIP	Shelter In Place
SIRS	Statewide Interoperability Radio System
SME	Subject Matter Expert
SO	State Official
SOP	Standard Operating Procedure
SPS	Surry Power Station
SRO	School Resources Officer
SSES	Susquehanna Steam Electric Station
SSO	Social Services Officer

STARS	Statewide Area Radio System
SPS	Surry Power Station
Sv	Sievert (sv)
SWAN	State Warning Alert Notification
TAC	Technical Assistance Center
TACP	Traffic and Access Control Point
TCP	Traffic Control Point
TED	Total Effective Dose (whole body dose)
TEDE	Total Effective Dose Equivalent
TEP	Training and Exercise Plan
TEPW	Training and Exercise Planning Workshop
THD	Technological Hazards Division
THIRA	Threat and Hazard Identification and Risk Assessment
TLD	Thermoluminescent Dosimeter
TMI	Three Mile Island
TO	Transportation Officer
TSC	Technical Support Center
TTD/TTY	Telecommunication Device for the Deaf/TeleType
TTX	Tabletop Exercise
UEM	Utility Emergency Manager
USDA	U.S. Department of Agriculture
UTL	Universal Task List
VDEM	Virginia Department of Emergency Management
VDH	Virginia Department of Health
VDOT	Virginia Department of Transportation
VEOC	Virginia Emergency Operations Center
VERT	Virginia Emergency Response Team
VEST	Virginia Emergency Support Team
VHF	Very High Frequency
VMS	Variable Message Sign
VSP	Virginia State Police
VOAD	Voluntary Organizations Active in Disaster
VOIP	Voice Over Internet Protocol
WEA	Wireless Emergency Alerts
WVDEP	West Virginia Department of Environmental Protection
WVDHHR	West Virginia Department of Health and Human Resources
WVDHSEM	West Virginia Division of Homeland Security and Emergency Management
WVSP	West Virginia State Police