



Salem & Hope Creek Nuclear Generating Stations

Christiana Hospital
After Action Report

November 18, 2023



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Executive Summary

On October 18, 2023, a Medical Services Drill was conducted for the 10-mile Plume Exposure Pathway, Emergency Planning Zone (EPZ) around the Salem & Hope Creek Nuclear Generating Stations (S&HCNGS) 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 October 12, 2022.

The purpose of the S&HCNGS 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 Delaware Emergency Management Agency, Christiana Hospital, Port Penn Volunteer Fire Company, and New Castle County Emergency Medical Services 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 S&HCNGS Medical Services Drill. The Delaware Emergency Management Agency, Christiana Hospital, Port Penn Volunteer Fire Company, and New Castle County Emergency Medical Services demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Level 1 or Level 2 Findings or Plan Issues as a result of this Drill.

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

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

Christiana Hospital

Type of Drill

Medical Services

Drill Date

October 18, 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 S&HCNGS Medical Services Drill:

State Jurisdiction

- Delaware Emergency Management Agency

County Jurisdiction & Private Organizations

- Christiana Hospital
- Port Penn Volunteer Fire Company
- New Castle County Emergency Medical Services

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 based on 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 October 18, 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 S&HCNGS.

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 S&HCNGS 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 2: Exposure Control
- Objective 5: Operate

The capability targets for this drill were:

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

2.3. Scenario Summary

During a General Emergency at the Salem & Hope Creek Nuclear Generating Stations (Salem Unit 1) with a release of radioactive materials in progress, a Field Monitoring Team (FMT) was tasked with collecting samples in a contaminated area. After collecting samples, the FMT proceeded to the sample drop-off point to deliver samples for disposition. Upon arrival at the drop-off point, the FMT member tripped and fell while exiting the FMT vehicle, resulting in a laceration to the right anterior lower leg; a container of contaminated water collected in the

field broke open and splashed onto the FMT member during the trip and fall, contaminating the FMT member. The FMT member called 911 for assistance and requested an ambulance.

The New Castle County Fire Board dispatched an ambulance squad from the Port Penn Volunteer Fire Company to the scene, supported by New Castle County Emergency Medical Services (EMS), to provide assessment, treatment, radiation surveillance, and transportation to Christiana Hospital. The Fire Board also notified Christiana Hospital of the pending arrival of an injured person with possible radiological contamination.

Upon arrival at Christiana Hospital, the hospital's medical team met the ambulance crew and EMS at the exterior entrance to the hospital's radiation emergency area (REA) / decontamination room, where a clean transfer of the patient was conducted. The hospital's medical team further assessed the patient's condition and were able to successfully decontaminate the patient in the REA, obtain samples from the patient, and transport the patient to the Emergency Department for further treatment of injuries.

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 Salem & Hope Creek Nuclear Generating Stations Medical Services Drill on October 18, 2023. 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 based on 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 B.

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 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 using the following letters:

- (L1) Level 1 Finding: An observed or identified inadequacy of organizational performance during 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 during 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: October 18, 2023 Site: Salem & Hope Creek Nuclear Generating Stations (M) Met, (1) Level 1 Finding, (2) Level 2 Finding, (P) Planning Issue	Capability Targets	Christiana Hospital	Port Penn Volunteer Fire Company
Objective 2: Exposure Control Emergency Worker Exposure Control Management	2.2	M	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 County and Private Sector Organizations are as follows:

3.3.1 County and Private Organizations

3.3.2.1 Christiana Hospital

- a. Met: 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

3.3.2.2 Port Penn Volunteer Fire Company

- a. Met: 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 State of Delaware and private sector organizations demonstrated knowledge of their radiological emergency response plans and procedures and they were successfully implemented during the Salem & Hope Creek Nuclear Generating Stations Medical Services Drill evaluated on October 18, 2023.

Two FEMA evaluators provided analyses of the core capability: Public Health, Healthcare, and Emergency Medical Services, as well as two capability targets: Emergency Worker Exposure Control Management; and Transportation/Treatment of Contaminated, Injured Individuals. These analyses resulted in a determination of no Findings, no new Plan issues, and no unresolved Plan Issues.

Port Penn Volunteer Fire Company (supported by New Castle County Emergency Medical Services) 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 using personal protective equipment, regular glove changes, and control of cross contamination. Appropriate patient assessments were demonstrated as well as regular and ongoing communications with Christiana Hospital.

Christiana Hospital 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 Port Penn Volunteer Fire Company, 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 Salem & Hope Creek Nuclear Generating Stations Medical Services Drill evaluated on October 18, 2023. The following constitutes the managing staff for the evaluation:

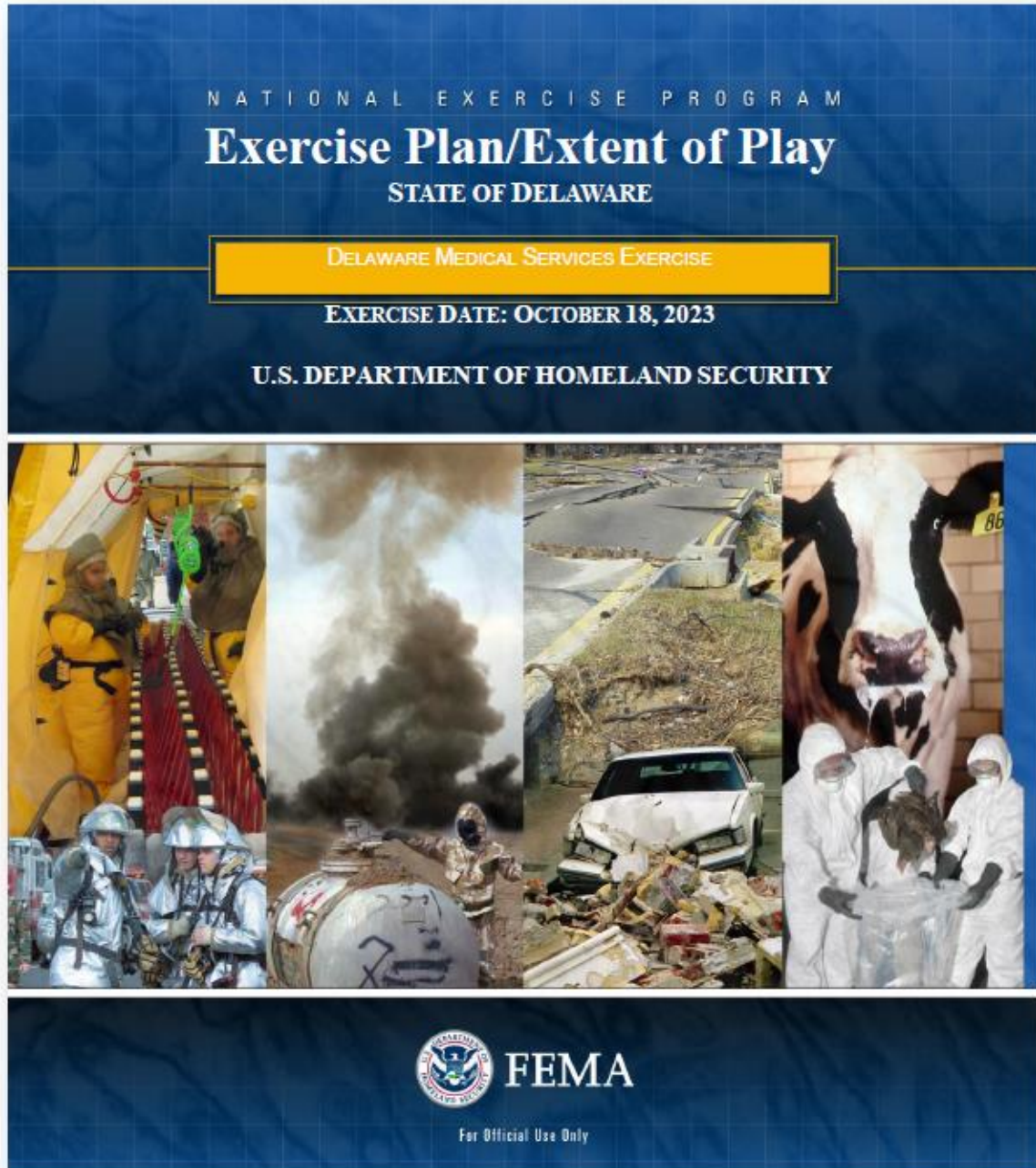
- Alexander Hazard, DHS/FEMA, Emergency Management Specialist
- Daniel Rose, DHS/FEMA, Emergency Management Specialist

Location/Venue	Evaluator	Agency
Christiana Hospital	Alexander Hazard	FEMA Region 3
Port Penn Volunteer Fire Company	Daniel Rose	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 Delaware 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 Delaware Emergency Management Agency.

The Exercise Plan was created as an overall tool for facilitation and implementation of the Salem & Hope Creek Nuclear Generating Stations 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.



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Delaware's Medical Services Exercise 2023

PREFACE

The Medical Services Exercise 2023 Evaluated Exercise (FSE) is sponsored by the State of Delaware. This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency (FEMA), Homeland Security Exercise and Evaluation Program (HSEEP).

The REP exercise design and development process will include establishing an EPT led by the state(s) (or designee), with representatives from the licensee, OROs, and FEMA REP Regional staff to include the 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.

Delaware's Medical Services Exercise 2023 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, however, if developing a Controller and Evaluator (C/E) Handbook it should be treated as a restricted document intended for Controllers and Evaluators only to prevent compromise to exercise activities.

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.

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HANDLING INSTRUCTIONS

1. The title of this document is Delaware's Medical Services Exercise 2023 Exercise Plan (ExPlan).
2. The information gathered in this ExPlan 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 State of Delaware is prohibited.
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.
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Delaware's Medical Services Exercise 2023

CHAPTER 1: GENERAL INFORMATION

Introduction

Delaware's Medical Services Exercise 2023 is a Full exercise designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to radiological accidents. An exercise is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the FEMA Region 3 RAC Chair with the input, advice, and assistance of the EPT. Delaware's Medical Services Exercise 2023 is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

Confidentiality

Delaware's Medical Services Exercise 2023 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, however, if developing a Controller and Evaluator (C/E) Handbook it should be treated as a restricted document intended for Controllers and Evaluators only. All site-specific scenario information, including out-of-sequence exercise materials, designed to drive exercise play must be treated as confidential to avoid compromising exercise activities and limited to Controllers and Trusted Agents designated by the EPT.

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 FEMA REP Program directives.

Public release of exercise materials to third parties is at the discretion of the Federal Emergency Management Agency (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 Radiological Emergency Preparedness (REP) Program Manual (December 2019) to develop this exercise.

The objective of FEMA Evaluated REP Exercises is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

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Capability Targets

The establishment of the National Preparedness Priorities has 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 Delaware 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 the development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate the 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 EPT selected objectives that focus on evaluating emergency response procedures and identifying areas for improvement. This exercise will focus on the following objectives:

- Objective 1: Emergency Operations Management
- Objective 2: Exposure Control
- Objective 5: Operate

Outstanding Issues

There are no Level 1, Level 2, or Planning Issues as a result of previous FEMA-evaluated MS-1 exercises.

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CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The Delaware's Medical Services Exercise 2023 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 Delaware's Medical Services Exercise 2023 will be conducted on October 18, 2023. Exercise play is scheduled for four hours or until the Lead Controller 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 Delaware's Medical Services Exercise 2023:

- The exercise will be graded against the REP Objectives and Capability Targets. Elements outside the scope of the REP criteria will not be graded.
- 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 and the Simulation Cell (SimCell).
- Out-of-sequence play is authorized based on prior approval.
- Certain simulations are allowed based on prior approval.

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

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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 initiate certain player actions to ensure exercise continuity.
- **Trusted Agents:** An individual on the exercise planning team who is trusted not to reveal exercise and scenario details to players or third parties before and during exercise conduct.
- **Simulators:** Simulators are control staff personnel who role-play as nonparticipating organizations or individuals. They most often operate out of the SimCell but may occasionally have face-to-face contact with players. Simulator's function semi-independently under the supervision of SimCell controllers, enacting roles (e.g., as media reporters or next of kin) in accordance with instructions provided in the Master Scenario Events List (MSEL). All simulators are ultimately accountable to the Exercise Director and/or the Senior Controller.
- **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. 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. VIPs are a type of observer but are frequently grouped separately. A dedicated group of exercise Controllers should be assigned to manage these groups.
- **Media Personnel:** Some media personnel may be present as observers pending approval by the appropriate EMA personnel and exercise support team members. Media interaction may also be simulated by the SimCell to enhance realism and meet related exercise objectives. A dedicated group of exercise controllers should be assigned to manage these groups.

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- **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 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. Should a Player, Observer, or media representative find an unattended Handbook, it should be provided to the nearest Controller or Evaluator. C/E Handbook will not be developed for this exercise.

Extent-of-Play Agreement (EOPA)

The extent-of-play agreements 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. To avoid compromise to exercise play, the MSEL will not be provided to exercise players.

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Exercise Implementation

Exercise Play

Exercise play will begin at approximately 9:00 hours 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.

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 with the SimCell 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 Delaware's Medical Services Exercise 2023 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:

- 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 Lead 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.

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Exercise Setup

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

Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will first advise the nearest controller, 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, providing the following information to the Senior/Lead Controller and Exercise Director:
 - Venue/function
 - Location within the venue/function
 - Condition
 - Requirements
- The SimCell and Lead Controller will be notified as soon as possible if a real emergency occurs.
- 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 Senior Controller. The notification will be made from the SimCell.

Site Access

Observer Coordination

Each organization with observers will coordinate with the Lead Controller 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. The Lead Controller and/or the Observer Controller will be present to explain the exercise program and answer questions for the observers during the exercise.

Directions

Directions/addresses to each venue area are available in Appendix D.

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Exercise Identification

Identification badges may be issued to exercise staff. All exercise personnel and observers will be identified by badges distributed by the staff from each participating agency.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The exercise is scheduled to run for 3 hours or until the Delaware Emergency Management Agency determines that the exercise objectives have been met. The Delaware 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 the 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 the SimCell, Controllers, Evaluators, and the venues will be telephone. A list of key telephone and fax numbers, and radio call signs if applicable will be available as a Communication Directory before the start of the exercise.

Player Briefing

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

Public Affairs

This exercise enables Players to demonstrate an increased readiness to deal with a nuclear power plant incident. Any nuclear power plant exercise may be a newsworthy event. Special attention must be given to the needs of the media, allowing them to get as complete and accurate a story as possible while ensuring their activities do not compromise the exercise realism, safety, or objectives.

All media inquiries are to be directed to John Petersen, DEMA Public Information Officer (PIO): (302) 659-2211 (office), (302) 233-8180. The DEMA PIO is responsible for disseminating public information in advance of the exercise.

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CHAPTER 3: PLAYER GUIDELINES

Exercise Staff

Exercise Director

The Exercise Director has the overall responsibility for planning, coordinating, and overseeing all exercise functions. He/she manages the exercise activities and maintains a close dialogue with the Controllers regarding the status of play and the achievement of the exercise design objectives.

Lead Controller

The Lead Controller is responsible for the overall organization of Delaware's Medical Services Exercise 2023. 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 on site with every facility and field team participating in the exercise, and at each out-of-sequence interview. 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 MSEL.

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the Delaware's Medical Services Exercise 2023. 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 the actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Extent of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After-Action process.

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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).

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 if prestaging is approved. Wear appropriate uniform/identification badge.
- If you gain knowledge of the scenario before the exercise, notify a controller so that appropriate actions can be taken to ensure a valid evaluation.
- Read your Player Information Handout, which includes information on exercise safety.
- Please sign in.

During the Exercise

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

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- 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 brief critique with the controllers and evaluators.
- Complete the Participant Feedback Form. 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 any notes or materials generated from the exercise to your controller or evaluator for review and inclusion in the AAR.

Simulation Guidelines

Because the Delaware's Medical Services Exercise 2023 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.

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CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

The goal of the Delaware's Medical Services Exercise 2023 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.

Exercise Evaluation Guides

FEMA recommends that REP exercise planners utilize EEGs. These EEGs are designed to maintain the integrity of the REP objectives/capability targets and to ensure provision of useful information that support the creation and maintenance of OROs' core capabilities. The FEMA REP program EEG templates will be available for download from the Prep Toolkit once the system is updated to accommodate the revised Part III of the 2019 RPM. The FEMA Region decides the degree of exercise planning team and ORO involvement in tailoring the EEGs for each assessment activity. There is no requirement for OROs to be involved in the EEG development process, though such involvement is beneficial.

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.

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Controller and Evaluator Debriefing

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Debriefing after the MS-1 Full Exercise and Christiana Care Health facility and/or Port Penn Fire Company. During the debriefing, these individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise. Evaluators will only brief preliminary findings based on their observations.

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, performance issues, planning issues, deficiencies, and capability analysis. The AAR will be drafted by DEMA and submitted to key stakeholders for review and comment within 30 days and finalized no more than 45 days after the assessment activity is conducted.

Improvement Plan

The IP is an outcome of the evaluation report. The IP contains information on how OROs will correct or improve Level 1 Findings, Level 2 Findings, and Plan Issues, who is responsible, and an anticipated timeline for correction/improvement. As FEMA documents each Level 1 Finding, Level 2 Finding, or Plan Issue within the evaluation report, OROs make a corresponding entry in the IP. The content of the IP will be negotiated during the after-action meeting (AAM), so it is not necessary for all information to be filled in when the draft evaluation report and IP go out for comment. FEMA Regions will follow up with OROs to ensure that IP corrective actions related to the Level 1 or Level 2 Findings, or Plan Issues identified by FEMA are met.

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APPENDIX A: EXERCISE SCHEDULE

Table A.1 Delaware's Medical Services Exercise 2023 Schedule

Time	Personnel	Activity
October 18, 2023		
8:30 am	Port Penn	MS-1 Patient Transport
8:30 am	Christina Care	Facilities (Decon Area) and Equipment Review

CONTROLLER MESSAGES

CONTROLLER MESSAGES

#	Initiating Event or Time	Location	Issued By	Issued To
1	Field Team member calls New Castle County 911	Port Penn Fire Dept. back lot parking lot	Controller	Victim
2	After dispatching Ambulance	NCC 911/ OEM	Controller	911 Dispatcher
3	Initial patient medical assessment by EMS	Port Penn Fire dept back lot Accident Scene	Haz/Med	Port Penn EMS
4	Radiation surveillance of patient by EMS	Accident Scene	Haz/Med	Port Penn EMS
5	Transportation in Ambulance	Ambulance	Haz/Med	Port Penn EMS/ NCC Paramedics
6	Patient's initial medical assessment by hospital	Hospital REA	Haz/Med	Hospital Team

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7	Patient's initial radiation survey by hospital team	Hospital REA	Haz/Med	Hospital Team
8	After first decontamination effort	Hospital REA	Haz/Med	Hospital Team
9	After second decontamination effort	Hospital REA	Haz/Med	Hospital Team
10	After third decontamination effort if necessary	Hospital REA	Haz/Med	Hospital Team
11	Post-Medical treatment	Hospital REA	Haz/Med	Hospital Team
12	Field Team Post Surveys	Hospital REA	Haz/Med	Hospital RSO

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Table A.2 Delaware's Medical Services Exercise 2023 Out of Sequence Schedule

Time	Personnel	Activity
October 18, 2023		

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APPENDIX B: METHOD OF OPERATION AND EXTENT OF PLAY

Capability Target 1.2: Direction and Control

Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Public Information and Warning; Mass Care Services; Public Health, Healthcare, and Emergency Medical Services; Situational Assessment; Critical Transportation; 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:

- Support protective action decision-making.
- Conduct briefings in a timely manner.
- Maintain situational awareness.
- Coordinate response activities with other organizations.
- Obtain resources to support emergency operations.
- Provide and maintain adequate facilities and equipment to support the emergency response.

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.

Outstanding Issues:

None

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Capability Target 2.2: Emergency Worker Exposure Control Management

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, radioprotective 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.

Demonstration and Evaluation Guidance:

- Maintain an appropriate inventory of DRDs that are leak-tested or current in calibration.
- Maintain an appropriate inventory of PRDs.
- Retain an adequate supply of radioprotective drugs.
- Adequately distribute appropriate DRDs and PRDs.
- Adequately distribute radioprotective drugs to emergency workers.
- Record and report exposures in the field.
- Implement decisions to administer radioprotective drugs.
- Report to the individual responsible for managing exposure and dose when limits are reached.
- Implement exposure control decisions to members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area.

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.

Outstanding Issues:

None

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Demonstration and Evaluation Guidance:
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?

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- 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?

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- 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.

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**APPENDIX C: PARTICIPATING AGENCIES
AND SITE MAPS**

Federal Agencies
State Jurisdictions
Risk Jurisdictions
Support Jurisdictions
Private Sector Organizations
Volunteer Organizations/NGO

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APPENDIX D: DIRECTIONS/ADDRESSES

Addresses:

New Castle County EOC
3601 N Dupont Highway
New Castle, DE 19720

Port Penn Fire Company
26 Market St
Port Penn, DE 19731

Christiana Care
4755 Ogletown Stanton Road
Newark, DE 19718

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APPENDIX E: OPEN ISSUES

No Open Issues