Salem & Hope Creek Generating Stations
Lower Alloways Creek Township, NJ
After-Action Report/Improvement Plan
Exercise Date – May 10, 2022

Radiological Emergency Preparedness (REP) Program

FEMA

Published July 29, 2022

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EXECUTIVE SUMMARY

On May 10, 2022, a full participation Plume Exposure Pathway exercise was conducted and evaluated for the 10-Mile Emergency Planning Zone (EPZ) around the Salem & Hope Creek Generating Stations (SHCGS) by the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA), Region 3. The previous full participation exercise at this site was evaluated on April 28, 2021.

Out-of-Sequence demonstrations were conducted during the week of May 09, 2022. The purpose of the Exercise and Out-of-Sequence demonstrations was to assess the capabilities of State, counties, and local jurisdictions to implement Radiological Emergency Response Plans (RERP) and Procedures to protect the property and lives of residents and transients in the event of an emergency at the Salem & Hope Creek Generating Stations. This report includes the evaluation and findings for the Delaware portion of the SHCGS EPZ. The New Jersey portion of the EPZ was evaluated by FEMA Region 2 and results are contained in a separate report. The findings in this report are based on the evaluations of the Federal evaluation 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 preparedness.

The evaluation of this exercise determined that there were no Level 1 Findings, two Level 2 Findings, with one being successfully re-demonstrated on May 10, 2022, and one Plan Issue. All prior Performance and Plan Issues were resolved before the 2022 exercise.

A Level 1 Finding is defined by the FEMA Radiological Emergency Preparedness Program Manual as follows: "An observed or identified inadequacy of organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant (NPP)."

A Level 2 Finding is defined as: "An observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

Finally, a Plan Issue is: "An observed or identified inadequacy in the ORO’s emergency plan/implementing procedures, rather than that of the ORO’s performance."

FEMA wishes to acknowledge the efforts of the many individuals in the State of Delaware and the two risk Counties of New Castle and Kent. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during the exercise.

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

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

Section 3 of this report entitled “Analysis of Capabilities” presents detailed “Exercise Evaluation and Results” information on the demonstration for each jurisdiction or functional entity evaluated in a jurisdiction-based, issue-only format (Capability Target Evaluation Summaries).

Section 4 of this report entitled “Demonstrated Strengths” includes exemplary performances that were demonstrated during the exercise and information on best practices that were observed.

Section 5 of this report entitled “Conclusion” presents a summary of the findings and performance of the evaluated agencies.

The appendices, present supplementary information that is relevant to the exercise:

- Appendix A – Exercise Timeline. A table that depicts the times when an event or notifications were noted at participating agencies and locations.
- Appendix B – Exercise Evaluators and Team leaders. A table listing the evaluator names, organizations, and responsibilities of the evaluators and management.
- Appendix C – Acronyms and Abbreviations. An alphabetized table defining the formal names used in this report.
- Appendix D – Extent of Play Agreement

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Plume 2022-05-10

Type of Exercise
Plume

Exercise Date
May 10, 2022

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radiological Release

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Salem & Hope Creek Generating Stations exercise:

State Jurisdictions

State of Delaware

- Civil Air Patrol
- Delaware Emergency Management Agency
- Delaware Department of Transportation
- Delaware Army National Guard
- Delaware Department of Natural Resources and Environmental Control
- State Park Enforcement
- Fish and Wildlife Natural Resources Police
- Delaware State Police
- Delaware State Fire School
- Delaware Department of Agriculture
- Delaware Department of Education
- Delaware Department of Health and Social Services

Risk Jurisdictions

New Castle County

- New Castle County Department of Public Safety
- New Castle County Office of Emergency Management
- New Castle County Executive
- New Castle County Department of Public Works
- New Castle Police Department
- New Castle County 911 Center
- New Castle County Department of Community Services
- Delaware State Police Communications
- Odessa Fire Company Station 24

Kent County

- Kent County Department of Public Safety
- Kent County Division of Emergency Management
- Kent County 911
- Citizens' Hose Volunteer Fire Station 44

Private Organizations

- American Red Cross
- PSEG Nuclear
- Radio Amateur Civil Emergency Service / Amateur Radio Emergency Service

Federal Organizations

- Federal Emergency Management Agency
- United States Coast Guard

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise 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 nuclear 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 Nuclear Generating Station 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 (RERPs) 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 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 REP Plume Exposure Pathway Exercise was conducted during the week of May 09, 2022, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Salem & Hope Creek Generating Stations (SHCGS). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency. The findings presented in this report are based on the evaluations of the Federal

evaluation team, with final determinations made by the FEMA Region 3 RAC Chairperson and approved by FEMA Headquarters.

These reports are provided to the 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
- Radiological Emergency Preparedness Program Manual, December 2019

Emergency Planning Zone Description:
The SHCGS site is located on the east bank of the Delaware River in Lower Alloways Creek Township, Salem County, New Jersey, about 20 miles south of Wilmington, Delaware. The 700-acre site is on the southern end of Artificial Island, a 3-mile-long, 1-mile-wide, man-made peninsula. The peninsula is connected to the mainland by a strip of tideland formed by hydraulic fill from dredging operations on the Delaware River. The tideland was constructed by the U.S. Army Corps of Engineers. The coordinates of the site are latitude 39°27'46" north and longitude 75°32'08" west. Two pressurized water reactors (Salem) and one boiling water reactor (Hope Creek) are located on the island. Each Salem unit generates a maximum output of 1,106 megawatts (MW); Unit 1 commenced commercial operations in June 1977 and Unit 2 in October 1981. The Hope Creek Unit, which generates a maximum output of 1,031 MW, became operational in December 1986.

The site lies on the low coastal plain of New Jersey, surrounded by extensive marshlands and meadowlands. The land within the two Delaware counties (New Castle and Kent) near the site is either undeveloped (48 percent) or used for agricultural purposes (42 percent). Major farm products within a 25-mile radius of the site include vegetables, poultry, dairy products, and indigenous field crops.

The nearest major population center (more than 25,000 people) is Wilmington, Delaware, which has a population of 70,166 and lies 20 miles north of SHCGS. The maximum population distribution in Delaware, including residents and transients, is 0 within the 2-mile EPZ, 6,515 within the 5-mile EPZ, and a total of 40,943 (including the 5-mile EPZ) inside the 10-mile EPZ. There are 37 early warning sirens in the Delaware portion of the EPZ.

The Ingestion Pathway Zone (IPZ) is approximately 7,850 square miles in area, which is equivalent to a 50-mile radius around the plant site. The States of Delaware, Maryland, and New Jersey, and the Commonwealth of Pennsylvania have jurisdictions within the IPZ. The largest city within the IPZ is Philadelphia, Pennsylvania, with a population of 1,584,064, about 40 miles from the plant site.

2.2 Exercise Objectives, Capabilities and Activities

The objectives of the 2022 Salem & Hope Creek Generating Stations (SHCGS) Plume Exercise were to demonstrate the capabilities of State and local emergency management agencies to mobilize emergency management and emergency response personnel, to activate emergency operations centers and support facilities, and to protect the health, lives, and property of the citizens residing within the 10-mile Emergency Planning Zone (EPZ).

To demonstrate the ability to communicate between multiple levels of government and provide timely, accurate, and sufficiently detailed information to the public, the emergency management agencies use a variety of resources, including radios, telephones, the Internet, the media, the Emergency Alert System (EAS), and the utility Alert and Notification System (ANS) Sirens. All these communication resources were employed and evaluated. The EAS and ANS were simulated, and media information was prepared but not actually released.

An essential capability of the Radiological Emergency Preparedness Program (REPP) is to evacuate, monitor and decontaminate, if necessary, and provide temporary care and shelter to displaced residents from the EPZ. The ability of the risk/support counties to mobilize personnel and resources to establish reception, monitoring and decontamination, and mass care centers was not demonstrated. In accordance with the FEMA Radiological Emergency Preparedness Program Manual, December 2019, the Delaware Emergency Management Agency has elected to evaluate these Objectives during an exercise later in the 8-year exercise cycle.

The protection of school children is also a vital mission of the REPP. In accordance with the FEMA Radiological Emergency Preparedness Program Manual, December 2019, the Delaware Emergency Management Agency has elected to evaluate these Objectives during an exercise later in the 8-year exercise cycle.

2.3 Scenario Summary

Meteorological conditions are wind direction from 129 degrees with a wind speed of 12 miles per hour (mph) and a “E” stability class. The wind direction varies throughout the exercise from 129 to 237 degrees.

At 1656, SHCGS declared a Notification of an Alert based upon a release in progress exceeding 1% of the PAG dose limit to the public.

At 1854, SHCGS declared a Site Area Emergency based on water level at or below the top of racks in the Hope Creek spent fuel pool. A Protective Action Recommendation (PAR) is made by the Licensee and the State of Delaware makes a Protective Action Decision (PAD) based on plant conditions and meteorological data. Later, plant conditions worsen that result in an upgraded PAR from the Licensee and upgraded PAD by the State of Delaware. The PAD should be implemented by the county and local agencies.

At 1943, a General Emergency is declared due to an inability to maintain water in the Hope Creek spent fuel pool above the top of the spent fuel. State and county officials make protective action decisions based on assessment of data and in accordance with plans and procedures.

At 2141, the exercise is terminated.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the May 10, 2022, Biennial Plume Exposure Pathway 10-mile Emergency Planning Zone (EPZ) Radiological Emergency Preparedness (REP) Exercise. The exercise was conducted to demonstrate the ability of the Offsite Response Organizations of State and local government to protect the health and safety of the public in the 10-mile Emergency Planning Zone surrounding the Salem & Hope Creek Generating Stations.

Each jurisdiction and functional entity were evaluated based on its demonstration of the Exercise Evaluation Area Criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the exercise evaluation area criteria and the Extent of Play Agreement can be found in the Exercise Plan.

3.2 Summary Results of Exercise Evaluation

The matrix presented in Table 3.1, on the following pages, presents the status of the exercise evaluation area criteria from the REP Program Manual that was scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number and the demonstration status of the criteria is indicated using the following letters:

- (D) Demonstrated Strength: an observed action, behavior, procedure, and/or practice that is worthy of special notice and positive recognition, note: this is already a common practice that many Regions employ when identifying demonstrated strengths.
- (L1) Level 1 Finding: an observed or identified inadequacy or organizational performance in an exercise 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 near a Nuclear Power Plant (NPP).
- (L2) Level 2 Finding: an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.
- (P) Plan Issue: an observed or identified inadequacy in the offsite response organizations' (OROs) emergency plan/implementation procedures, rather than that of the ORO's performance.
- (N) Not Demonstrated: term applied to the status of a REP exercise objective/capability target indicating that the ORO, for a justifiable reason, did not demonstrate the objective/capability target, 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 jurisdiction or functional entity performed all activities under the objective/capability target to the level required in the Extent-of-Play Agreement, with no Level 1 or Level 2 Findings assessed under that objective/capability target in the current exercise and no unresolved prior Level 2 Findings.

Tables 3.1 - Summary of Exercise Evaluation

Table 3.1a Exercise Evaluation by Classification

Location	Target	Capability Target Description	Status
Kent County Emergency Operations Center (EOC), County, Risk	2.2	Emergency Worker Exposure Control Management	L2 - Closed by Re-demonstration
Kent County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	P - Open
Delaware Emergency Management Agency (DEMA) SEOC - Emergency Operations Center, State	3.2	Alert and Notification to the Public	L2 - Open

Table 3.1b Exercise Evaluation Assessments Met

Location	Target	Capability Target Description	Status
Objective 1: Emergency Operations Management			
Kent County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
DEMA SEOC - Emergency Operations Center, State	1.1	Mobilization	M
DEMA JIC - Joint Information Center	1.1	Mobilization	M
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	1.1	Mobilization	M
DE State Field Monitoring Team 1 - State Field Monitoring Team	1.1	Mobilization	M
DE State Field Monitoring Team 2 - State Field Monitoring Team	1.1	Mobilization	M
DSP Truck Enforcement / Black Bird Weigh Station - Transportation Dependent	1.1	Mobilization	M
New Castle County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	1.2	Direction and Control	M
DSP Truck Enforcement / Black Bird Weigh Station - Transportation Dependent	1.2	Direction and Control	M
Citizens' Hose Company Station 44 - Route Alerting	1.2	Direction and Control	M
Odessa Fire Company Station 24 - Route Alerting	1.2	Direction and Control	M
DE State Field Monitoring Team 2 - State Field Monitoring Team	1.2	Direction and Control	M

DE State Field Monitoring Team 1 - State Field Monitoring Team	1.2	Direction and Control	M
Delaware State Traffic and Access Control Points - State Traffic and Access Control	1.2	Direction and Control	M
DEMA JIC - Joint Information Center	1.2	Direction and Control	M
Kent County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
New Castle County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
DEMA SEOC - Emergency Operations Center, State	1.2	Direction and Control	M
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	1.3	Protective Action Recommendations	M
DEMA SEOC - Emergency Operations Center, State	1.4	Protective Action Decisions for the Plume Phase	M
New Castle County EOC - Emergency Operations Center, County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
Kent County EOC - Emergency Operations Center, County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
DEMA SEOC - Emergency Operations Center, State	1.5	Protective Action Decision Implementation for the Plume Phase	M
DSP Truck Enforcement / Black Bird Weigh Station - Transportation Dependent	1.5	Protective Action Decision Implementation for the Plume Phase	M
Objective 2: Exposure Control			
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	2.1	Emergency Worker Exposure Control Decision-Making Process	M
New Castle County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	M
DEMA SEOC - Emergency Operations Center, State	2.2	Emergency Worker Exposure Control Management	M
Delaware State Traffic and Access Control Points - State Traffic and Access Control	2.2	Emergency Worker Exposure Control Management	M
DE State Field Monitoring Team 1 - State Field Monitoring Team	2.2	Emergency Worker Exposure Control Management	M
DE State Field Monitoring Team 2 - State Field Monitoring Team	2.2	Emergency Worker Exposure Control Management	M
Odessa Fire Company Station 24 - Route Alerting	2.2	Emergency Worker Exposure Control Management	M
Citizens' Hose Company Station 44 - Route Alerting	2.2	Emergency Worker Exposure Control Management	M
DSP Truck Enforcement / Black Bird Weigh Station - Transportation Dependent	2.2	Emergency Worker Exposure Control Management	M
Objective 3: Alert and Notification			

New Castle County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
Kent County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
DEMA SEOC - Emergency Operations Center, State	3.1	Communications	M
DEMA JIC - Joint Information Center	3.1	Communications	M
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	3.1	Communications	M
Delaware State Traffic and Access Control Points - State Traffic and Access Control	3.1	Communications	M
DE State Field Monitoring Team 1 - State Field Monitoring Team	3.1	Communications	M
DE State Field Monitoring Team 2 - State Field Monitoring Team	3.1	Communications	M
Odessa Fire Company Station 24 - Route Alerting	3.1	Communications	M
Citizens' Hose Company Station 44 - Route Alerting	3.1	Communications	M
DSP Truck Enforcement / Black Bird Weigh Station - Transportation Dependent	3.1	Communications	M
Odessa Fire Company Station 24 - Route Alerting	3.2	Alert and Notification to the Public	M
Citizens' Hose Company Station 44 - Route Alerting	3.2	Alert and Notification to the Public	M
DEMA JIC - Joint Information Center	3.3	Emergency Information and Instructions for the Public and News Media	M
Objective 4: Detect, Measure, Sample, Analyze, and Assess			
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	4.1	Field Monitoring Teams Management	M
DE State Field Monitoring Team 1 - State Field Monitoring Team	4.2	Plume Phase Measurements and Sampling	M
DE State Field Monitoring Team 2 - State Field Monitoring Team	4.2	Plume Phase Measurements and Sampling	M
Delaware State Technical Assessment Center (TAC) - State Accident Assessment Center	4.5	Plume Phase Analysis and Dose Assessment	M
Objective 5: Operate			
New Castle County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M
Kent County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M

DEMA SEOC - Emergency Operations Center, State	5.4	Traffic and Access Control	M
Delaware State Traffic and Access Control Points - State Traffic and Access Control	5.4	Traffic and Access Control	M

3.3 Capability Targets Evaluation Summaries

3.3.1 State Jurisdictions

In summary, the status of DHS/FEMA Capability Targets for the State jurisdictions are as follows:

3.3.1.1 Delaware State Emergency Operations Center

a. Met: 1.1, 1.2, 1.4, 1.5, 2.2, 3.1, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: ONE

LOCATION: Delaware State Emergency Operations Center

ISSUE NO: 02-22-3.2-L2-01

CAPABILITY TARGET: Alert and Notification of the Public.

CONDITION: EAS Activation Request #1 failed to include the protective action decision to shelter-in-place Emergency Response Planning Area (ERPA) "A" and monitor and prepare in ERPAs "B" & "C." The protective action information was conveyed through a press release later in the exercise, however included inaccurate information that ERPA A was 5-10 miles from the station and was disseminated 1 hour and 59 minutes after the Site Area Emergency.

POSSIBLE CAUSE: Developers and reviewers failed to identify the deficiency in the message content.

REFERENCE: NUREG-0654/FEMA-REP-1, Rev. 2: (E.2; E.4; E.5; F.3; O.1); Delaware Radiological Emergency Plan: SOP 502 - Emergency Alert System (EAS) Messages.

EFFECT: Residents in ERPA A would not know to take appropriate protective actions to shelter-in-place from the potential plume path and residents in ERPAs B and C would not know to monitor and prepare for further protective actions in a timely manner.

RECOMMENDATION: The following recommendations should be considered:

- Develop an EAS review procedure that ensures message content is aligned with DEMA procedures and NUREG 0654-REP-1, Rev. 2 planning standards.

- Create a procedure to create a Special News Broadcast to follow the EAS message.
- Conduct training sessions with Public Information Officer staff and leadership that include a review of EAS templates and procedures.

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

3.3.1.2 Delaware Joint Information Center/Rumor Control

a. Met: 1.1, 1.2 (Equipment, Facilities), 3.1, 3.3
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.3 Delaware Technical Assessment Center

a. Met: 1.1, 1.2, 1.3, 2.1, 3.1, 4.1, 4.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.4 Delaware State Field Monitoring Team 1

a. Met: 1.1, 1.2 (Equipment), 2.2, 3.1, 4.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.5 Delaware State Field Monitoring Team 2

a. Met: 1.1, 1.2 (Equipment), 2.2, 3.1, 4.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.6 Transportation Dependent

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.1.7 Traffic and Access Control

a. Met: 1.2 (Equipment), 2.2, 3.1, 5.4
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 Risk Jurisdictions

In summary, the status of DHS/FEMA Capability Targets for the Risk jurisdictions are as follows:

3.3.2.1 Kent County Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 3.1, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: ONE

LOCATION: Kent County Emergency Operations Center

ISSUE NO: 02-22-2.2-L2-02

CAPABILITY TARGET: Emergency Worker Exposure Control Management.

CONDITION: The Staff at the Emergency Operations Center failed to complete a timely and accurate radiological briefing to potential emergency workers entering the 10-mile Emergency Planning Zone (EPZ).

POSSIBLE CAUSE: No plan or procedures were in place to initiate a Radiological Officer (RO) Briefing to emergency workers prior to being deployed and entering the 10-mile EPZ as a representative of Kent County Emergency Operations Center.

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; O.1); Delaware Radiological Emergency Plan: SOP 801 – Radiation Exposure Control Measures.

EFFECT: The lack of a timely radiological briefing to emergency workers entering the EPZ could delay and jeopardize response activities and place emergency workers at risk without properly being briefed on the hazards of radiation, issue of personal protective equipment, and contribute to a lack of understanding of radiological equipment operability and exposure control protocols and ultimately contribute to a negative impact to the public.

CORRECTIVE ACTIONS: The Kent County Staff successfully redemonstrated the radiological briefing, exposure control equipment, and personal protective equipment necessary for emergency workers after a pause in the exercise. Exercise play resumed and a radiological briefing was conducted

for an emergency worker in the emergency operations center at the end of the exercise by the Radiological Officer.

d. Plan Issues: ONE

LOCATION: Kent County Emergency Operations Center

ISSUE NO: 02-22-2.2-P-01

CAPABILITY TARGET: Emergency Worker Exposure Control Management.

CONDITION: The Staff at the Emergency Operations Center failed to complete a timely and accurate radiological briefing to potential emergency workers entering the 10-mile Emergency Planning Zone (EPZ).

POSSIBLE CAUSE: No plan or procedures were in place to initiate a Radiological Officer (RO) Briefing to emergency workers prior to being deployed and entering the 10-mile EPZ as a representative of Kent County Emergency Operations Center.

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; O.1); Delaware Radiological Emergency Plan: SOP 801 – Radiation Exposure Control Measures.

EFFECT: The lack of a plan or procedure in place for a timely radiological briefing to emergency workers entering the EPZ could delay response activities, place emergency workers at risk, contribute to a misunderstanding of the hazards from ionizing radiation, personal protective equipment, and exposure control instruments.

CORRECTIVE ACTIONS: Kent County should create a procedure for an emergency worker radiological briefing. The procedure should align with DEMA SOP 801 and NUREG 0654-REP 1, Rev 2. The procedure should provide for delivery of the briefing prior to emergency workers deployment into the EPZ and account for staff working at remote satellite offices equipped with exposure control equipment.

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

3.3.2.2 Citizens' Hose Company Station 44 / Backup Route Alerting

a. Met: 1.2 (Equipment and Supplies), 2.2, 3.1, 3.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.2.3 New Castle County Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 5.4

b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues – Unresolved: NONE

3.3.2.4 Odessa Fire Company Station 24 / Backup Route Alerting

a. Met: 1.2 (Equipment and Supplies), 2.2, 3.1, 3.2
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: DEMONSTRATED STRENGTHS

4.1 State Jurisdictions

4.1.1 Delaware State Field Monitoring Team 2

The DF-AB-75L-LI air sampler was modified to make for a quick and easy setup for an otherwise awkward piece of equipment.

4.2 Risk Jurisdictions

4.2.1 Kent County Emergency Operations Center

Kent County maintained a Special Needs Facilities and general public list representing all ERPAs which included pertinent personal information in addition to a photograph of each facility and household.

4.2.2 New Castle County Emergency Operations Center

New Castle County maintained a Special Needs Facilities and general public list representing all ERPAs which included pertinent personal information in addition to a photograph of each facility and household.

The New Castle County Amateur Radio Emergency Services (ARES) team demonstrated unique capabilities to transmit messages and information through satellite and portable radios.

SECTION 5: CONCLUSION

The State of Delaware and local jurisdictions, except where noted in this report, demonstrated knowledge of their Radiological Emergency Response Plans (RERP) and procedures were adequately implemented during the Salem & Hope Creek Generating Stations Plume Exercise evaluated on May 10, 2022.

FEMA assesses offsite planning and preparedness for communities within the plume and/or ingestion exposure pathway EPZs of commercial NPPs through an established set of objectives and capability targets that reflect the intent of the planning standards of 44 CFR 350 and the evaluation criteria of NUREG-0654/FEMA-REP-1, Rev 2, December 2019. Thus, FEMA considers these objectives/capability targets to be the benchmarks for FEMA's validation of reasonable assurance.

Each of these objectives/capability targets apply to all aspects of FEMA's assessment and are reported out in terms of core capabilities in the Biennial Preparedness Report. There are five overarching objectives, each of which have a unique set of capability targets that support the accomplishment of the objective. The capability targets are associated with one or more core capabilities, as agreed to by the OROs and RAC Chairs. This assessment strategy supports FEMA's regulatory responsibilities and successfully aligns REP evaluation methodology with the doctrine of the NPS.

Federal Emergency Management Agency (FEMA) evaluators assessed 59 evaluation Capability Targets in 5 Objectives:

- Objective 1: Emergency Operations Management
- Objective 2: Exposure Control
- Objective 3: Alert and Notification
- Objective 4: Detect, Measure, Sample, Analyze, and Assess
- Objective 5: Operate

These analyses resulted in a determination of no Level 1 Findings, two Level 2 Findings, and one Plan Issue. One of the Level 2 Findings, assessed to the Kent County Emergency Operations Center, was successfully re-demonstrated during the exercise and is closed.

Based on the results of the exercise and a review of the offsite radiological emergency response plans and procedures submitted, FEMA Region 3 has determined they are adequate (meet 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 exercise.

APPENDIX A – EXERCISE TIMELINE

This section contains the Exercise Timeline. A table that depicts the times when an event or notifications were noted at participating agencies and locations. (See next page).

Emergency Classification Level or Event	Time Utility Declared	Delaware State EOC	Technical Assessment Center	PIO / Virtual JIC	Kent County EOC	New Castle County EOC
Unusual Event		1630				
Alert	1634	1638	1656	1651	1703	1653
Site Area Emergency	1835	1843	1854	1854	1855	1854
General Emergency	1927	1933	1943	1933	1950	1943
Start of Simulated Radiation Release	1634	1630	1656	1651	1703	1634
Termination of Simulated Radiation Release	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		1720	1720	1720	1720	1720
Governor's Declaration of State of Emergency		N/A	N/A	N/A	N/A	N/A
Governor's Executive Order #20		1735	1735	1735	1735	1735
Exercise Terminated		2140	2141	2140	2140	2140
First Precautionary Action: *Conduct River Alerting*		1857	1857	1857	1857	1857
First Protective Action Decision: *Shelter-In-Place ERPA "A"; Monitor and Prepare ERPAs "B" & "C", Evacuate Schools and Special Populations in all ERPAs; Place livestock on stored feed and water, implement 10-mile Access Control Points, open relocation centers, reception centers, and emergency worker stations.*		1932	1932	1932	1932	1932
First Siren Sounding		1942	1942	1942	1942	1942
First EAS Message Broadcast		1947	1947	1947	1947	1947
Second Precautionary / Protective Actions *Describe: None*					.	
Siren Sounding		N/A	N/A	N/A	N/A	N/A
Second EAS Message Broadcast *Reunification procedures for school children and parents at relocation centers*		2050	2050	2050	2050	2050
KI Decision - Emergency Workers		N/A	N/A	N/A	N/A	N/A
KI Decision - General Public		N/A	N/A	N/A	N/A	N/A

APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Team Leaders and Evaluators for the Salem & Hope Creek Generating Stations 2022 Radiological Emergency Preparedness Plume Exposure Pathway Exercise evaluated on May 10, 2022. The following constitutes the managing staff for the Exercise Evaluation:

- Thomas Scardino, DHS/FEMA, Regional Assistance Committee (RAC) Chairman
- Zachary Corle, DHS/FEMA, Project Officer and Site Specialist

LOCATION	TEAM LEADER	AGENCY
State of Delaware Emergency Operations Center	Daniel Rose	FEMA R3
Technical Assessment Center	Michael Howe	FEMA HQ
Kent County Emergency Operations Center	Joseph Suders	FEMA R3
New Castle County Emergency Operations Center	Kathryn Duran	FEMA R3

LOCATION	EVALUATOR	AGENCY
State of Delaware Emergency Operations Center	Alex Hazard	FEMA R3
State of Delaware Emergency Operations Center	Andrew Chancellor	FEMA R7
Delaware Joint Information Center	Lee Torres	FEMA R3
Technical Assessment Center	Rahuel Preciado	FEMA R3
Delaware State Field Monitoring Team 1	Cristina Schulingkamp	EPA
Delaware State Field Monitoring Team 2	Jeffrey Clark	FEMA R7
Kent County Emergency Operations Center	Taylor Griffiths	FEMA R3
Citizens' Hose Company Station 44 / Backup Route Alerting	Kerry Holmes	FEMA R3
New Castle County Emergency Operations Center	Tina Thomas	FEMA R3
Odessa Fire Company Station 24 / Backup Route Alerting	Matthew Welshans	FEMA HQ
Transportation Dependent	Heather Wilson	FEMA R7
Traffic and Access Control	Matthew Welshans	FEMA HQ

APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ACP	Access Control Point
ALC	Annual Letter of Certification
ANS	Alert and Notification System
ARC	American Red Cross
ARES	Amateur Radio Emergency Services
CFR	Code of Federal Regulations
DEMA	Delaware Emergency Management Agency
DHS	Department of Homeland Security
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPT	Exercise Planning Team
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
EW	Emergency Workers
FBI	Federal Bureau of Investigation
FD	Fire Department
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FPE	Full Participation Exercise
FTC	Field Team Coordinator
GE	General Emergency
GIS	Geographic Information Systems
GPS	Global Positioning System
JIC	Joint Information Center
KI	Potassium Iodide
LOA	Letter of Agreement
MOU	Memorandum of Understanding
MSEL	Master Scenario Events List

NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
OOS	Out of Sequence
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PAZ	Protective Action Zone
PI	Planning Issue
PIO	Public Information Officer
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimeter
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
REA	Radiation Emergency Area
REPP	Radiological Emergency Preparedness Program
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
SAE	Site Area Emergency
SHCGS	Salem & Hope Creek Generating Stations

APPENDIX D: EXTENT OF PLAY AGREEMENT

The 2022 Salem & Hope Creek Generating Stations Plume Pathway Exercise Extent-of-Play (EOP) Agreement is a document created by the Delaware Emergency Management Agency that sets the parameters for exercise demonstration. The EOP Agreement was signed by the FEMA Region 3 and Delaware Emergency Management Agency planning team members

NATIONAL EXERCISE PROGRAM

Exercise Plan/Extent of Play
State of Delaware

Salem / Hope Creek Evaluated Plume Phase Exercise

Exercise Date: May 10, 2022

U.S. DEPARTMENT OF HOMELAND SECURITY

FEMA

For Official Use Only

STATE OF DELAWARE

EXERCISE
AND
EXTENT-OF-PLAY

Salem-Hope Creek NGS Plume Exercise
May 10, 2022

A.J. Schall Jr.

Approved **Delaware Emergency Management Agency**

ZACHARY A CORLE Digitally signed by ZACHARY A CORLE
Date: 2022.05.05 11:34:30 -04'00'

Approved **Federal Emergency Management Agency – Region 3**

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PREFACE

The Salem / Hope Creek Plume Phase Exercise 2022 Evaluated Full Scale 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 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 Salem / Hope Creek Plume Phase Exercise 2022 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.

HANDLING INSTRUCTIONS

1. The title of this document is Salem / Hope Creek Plume Phase Exercise 2022 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.

4. For more information, please consult the following points of contact (POCs):

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CHAPTER 1: GENERAL INFORMATION

Introduction

The Salem / Hope Creek Plume Phase Exercise 2022 is a full-participation exercise designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. A full participation 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. The Salem / Hope Creek Plume Phase Exercise 2022 is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities.

Confidentiality

The Salem / Hope Creek Plume Phase Exercise 2022 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.

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 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 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 1.1: Mobilization
- Capability Target 1.2: Direction and Control
- Capability Target 1.3: Protective Action Recommendations
- Capability Target 1.4: Protective Action Decisions for the Plume Phase
- Capability Target 1.5: Protective Action Decision Implementation for the Plume Phase
- Capability Target 1.6: Protective Acton Decisions for the Post-Plume Phase
- Capability Target 1.7: Protective Action Decision Implementation for the Post-Plume Phase
- Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process
- Capability Target 2:2: Emergency Worker Exposure Control Management
- Capability Target 3.1: Communications
- Capability Target 3.2: Alert and Notification of the Public
- Capability Target 3.3: Emergency Information and Instructions for the Public and News Media
- Capability Target 4.1: Field Monitoring Teams Management
- Capability Target 4.2: Plume Phase Measurements and Sampling
- Capability Target 4.3: Post-Plume Phase Measurements and Sampling
- Capability Target 4.4: Laboratory Operations

- Capability Target 4.5: Plume Phase Analysis and Dose Assessment
- Capability Target 4.6: Post-Plume Phase Sampling Plan Development and Analysis
- Capability Target 5.1: Monitoring, Decontamination, Sheltering, and Registration of Evacuees
- Capability Target 5.2: Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles
- Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals
- Capability Target 5.4: Traffic and Access Control

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 3: Alert and Notification
- Objective 4: Detect, Measure, Sample, Analyze, and Assess
- Objective 5: Operate

Outstanding Issues

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

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The Salem / Hope Creek Plume Phase Exercise 2022 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 Salem / Hope Creek Plume Phase Exercise 2022 will be conducted on May 10, 2022. Exercise play is scheduled for eight 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 Salem / Hope Creek Plume Phase Exercise 2022:

- 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.

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 or 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.

- **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 Salem / Hope Creek Plume Phase Exercise 2022 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. No Controller Handbook will be used.

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. In order to avoid compromise to exercise play, the MSEL will not be provided to exercise players.

Exercise Implementation

Exercise Play

Exercise play will begin at approximately 1600 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 Salem / Hope Creek Plume Phase Exercise 2022 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.

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.

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 eight hours or until the Federal 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 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 in order 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 Doug Scheer, DEMA Public Information Officer (PIO): (302) 659-2254 (office), (302) 270-9142.

The DEMA PIO is responsible for disseminating public information in advance of the exercise.

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 the Salem / Hope Creek Plume Phase Exercise 2022, 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 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 Salem / Hope Creek Plume Phase Exercise 2022. 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 Extent of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After-Action process.

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 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 the SimCell, identify the organization, agency, office, and/or individual with which you want to speak.
- Verbalize out loud when taking an action. This will ensure that evaluators are made aware of critical actions as they occur.
- Maintain a log of your activities. Many times, this log may include documentation of activities missed by a controller or evaluator.

Following the Exercise

- At the end of the exercise at your facility, participate in 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 Salem / Hope Creek Plume Phase Exercise 2022 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 Salem / Hope Creek Plume Phase Exercise 2022 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 PrepToolkit 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.

Participants Briefing and Public Meeting

44 CFR 350.9 requires a post-exercise participant briefing and public meeting. A participant's briefing will be conducted after the biennial exercise as an opportunity to present OROs with initial exercise results. The public meeting is an opportunity to discuss the evaluation of the REP exercise with the public. The RAC Chair may combine the participant briefing with the public meeting at his or her discretion. The participant's briefing will be conducted virtually on May 13th, 09:00 am. The Public/Media Briefing will be conducted virtually on May 13th, 10:30 am.

Controller and Evaluator Debriefing

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Debriefing if needed. 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 the FEMA region and provided to the state for review and comment within 30 days and finalized no more than 90 days after the assessment activity is conducted.

After-Action Conference

The After-Action Conference (AAC), scheduled if needed or requested, is a forum for jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP.

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 goes 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.

The Salem / Hope Creek Plume Phase Exercise 2022 participating agency officials will discuss the Improvement Plan during the AAC, which will be scheduled if needed.

APPENDIX A: EXERCISE SCHEDULE

Table A.1 *Salem / Hope Creek Plume Phase Exercise 2022 Schedule*

Time	Personnel	Activity
May 10, 2022		
3:30 pm to 11:30 pm	Delaware Emergency Operations Center	Mobilization, Direction and Control, Protective Action Decisions for the Plume Phase, Protective Action Decision Implementation for the Plume Phase, Communications, Alert and Notification of the Public, Emergency Information and Instructions for the Public and News Media, Traffic and Access Control, Emergency Worker Exposure Control Management
3:30 pm to 11:30 pm	Technical Assessment Center	Mobilization, Direction and Control, Protective Action Recommendations, Emergency Worker Exposure Control Decision-Making Process, Communications, Field Monitoring Teams Management, Plume Phase Analysis and Dose Assessment
3:00 pm to 11:30 pm	Field Monitoring Teams	Mobilization, Direction and Control, Plume Phase Measurements and Sampling, Emergency Worker Exposure Control Management, Communications
3:30 pm to 11:30 pm	New Castle County EOC	Mobilization, Direction and Control, Protective Action Implementation, Emergency Worker Exposure Control Management, Communications, Traffic and Access Control, Alert and Notification of the Public (Backup Route Alerting)

3:30 pm to 11:30 pm	Kent County EOC	Mobilization, Direction and Control, Protective Action Implementation, Emergency Worker Exposure Control Management, Communications, Traffic and Access Control, Alert and Notification of the Public (Backup Route Alerting)

Table A.2 *Salem / Hope Creek Plume Phase Exercise 2022 Out of Sequence Schedule*

Time	Personnel	Activity
May 10, 2022		
1:00 PM	DEMA and DelDOT Staging Area (Blackbird Weigh Station)	Transportation Dependent
2:00 PM	Delaware Department of Transportation / DSP	Traffic / Access Control
3:00 PM	DEMA Siren Activation / EAS Messaging	Sirens / EAS Message

APPENDIX B: METHOD OF OPERATION AND EXTENT OF PLAY

This exercise is being conducted in close cooperation with the State of New Jersey. The New Jersey Office of Emergency Management (NJOEM) will submit a separate Exercise Plan and Extent-of-Play to FEMA Region 2.

Note on Demonstrations

It is the intent of the State of Delaware to demonstrate all exercise activities in a manner fully consistent with the Radiological Emergency Preparedness Plan. However, it is possible that adjustments may need to be made to participation based on COVID related restrictions in place at the time of the exercise or out-of-sequence demonstration(s). Demonstration of criterion may be done virtually, in person and / or a combination of both, by interview, or out-of-sequence as appropriate to maintain compliance with current COVID-19 guidance or mandates. Regardless of evaluation method, all Evaluators will be provided access to the State of Delaware's WebEOC event, HSIN room, and any other virtual platform that will be used by players during this Exercise.

If necessary and appropriate, just-in-time training and / or re-demonstrations will be permitted during the exercise with the consent of the RAC Chair. For any re-demonstration, an issue will be written, classified, and included in the AAR as successfully re-demonstrated.

OBJECTIVE 1 – Emergency Operations Management

Capability Target 1.1: Mobilization
Core Capability: Operational Coordination; 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.3, A.4, A.5, C.1, C.2, C.2.a, C.2.b, C.3, E.1, E.1.a, E.3, F.1.c, H.6, and O.1)
Intent: The capability to alert, notify, and mobilize OROs to staff facilities in support of emergency operations.

Demonstration and Evaluation Guidance:

- Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.
- Receive and verify notifications.
- Identify and request additional resources, as needed.
- Determine a facility operational.

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.

Negotiated Extent of Play:
All players will be permitted to pre-position prior to the Exercise. Discussion on the process of developing a 24-hour staffing roster will take place.
Outstanding Issues:
None

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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 1.3: Protective Action Recommendations
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Situational Assessment; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Biennial exercise only
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (D.4, J.7, J.8, J.8.b, J.9, and O.1)
Intent: The capability to use dose assessment and field data, compare this data to the PAGs, and choose among a range of protective actions those most appropriate in a given emergency.

Demonstration and Evaluation Guidance:

Plume

- Select and implement pre-planned precautionary protective actions.
- Utilize the methodology in plans/procedures to select among a range of protective actions most appropriate in a given emergency. This could also include the use of preplanned precautionary protective actions contained in plans/procedures.
- Develop PARs.
- Transmit PARs in a timely manner.

Post Plume

- Assess radiological consequences and provide appropriate PARs for the ingestion exposure pathway.

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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 1.4: Protective Action Decisions for the Plume Phase
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Situational Assessment; Critical Transportation; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Biennial exercise only
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (D.1.b, D.4, J.6, J.7, J.8, J.8.b, J.10, J.10.a, J.10.b, J.11.c-g, and O.1)
Intent: The capability to utilize appropriate factors and necessary coordination in the decision-making process used to make PADs for the public.

Demonstration and Evaluation Guidance:

- Coordinate and make PADs for members of the general public.
- Coordinate and make PADs for those with access and functional needs.
- Coordinate and make PADs for students at schools.
- Coordinate and make subsequent or alternate PADs.
- Coordinate and make decisions on the administration of KI (where applicable) for the public and institutionalized members of the population.

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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 1.5: Protective Action Decision Implementation for the Plume Phase
Core Capabilities: Operational Coordination; Public Information and Warning; Environmental Response/Health and Safety; Critical Transportation; Health and Social Services; Housing; Natural and Cultural Resources; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill

Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.4, C.2.a, G.1, J.11, J.11.a, J.11.b, J.11.c, J.11.e, J.11.g, and O.1)
Intent: The capability to implement precautionary protective action and/or PADs, including evacuation and/or sheltering, for all populations within the plume and ingestion exposure pathway EPZs. The populations include those with access and functional needs, students, and institutionalized individuals.

Demonstration and Evaluation Guidance:

- Implement PADs, ensuring communication and coordination with all appropriate jurisdictions.
- Assist those with access and functional needs during the implementation of PADs.
- Communicate, coordinate, and implement protective actions for schools.
- Communicate with transportation officials.
- Identify evacuation routes for the general public.
- Make KI available to both institutionalized persons and the general public, in accordance with plans and procedures.

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.

Negotiated Extent of Play:
Communication with transportation officials will be demonstrated; implementation of Transportation Dependent PAD will be conducted OOS with DEMA and DelDOT personnel at the Staging Area (Blackbird Weigh Station) on May 10th at 1:00 PM. An evacuation bus and bus driver will be deployed to the Weigh Station for the OOS evaluation. All other Protective Action Decision implementation processes will be demonstrated per ORO plans and procedures.
Outstanding Issues:
None

Capability Target 1.6: Protective Action Decisions for the Post-Plume Phase
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Situational Assessment; Critical Transportation; Housing; Planning
Recommended Evaluation Frequencies: At least once every 8-years
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, and O.1)
Intent: The capability to assess the radiological consequences for the ingestion exposure pathway and post-plume phase, relate them to the appropriate PAGs, and make and coordinate timely, appropriate PADs to mitigate exposure.

Demonstration and Evaluation Guidance:

- Make post-plume phase decisions in a timely manner.
- Make relocation decisions for the post-plume phase in a timely manner.
- Make reentry decisions for the post-plume phase in a timely manner.
- Make return decisions for the post-plume phase in a timely manner.
- Make re-occupancy decisions for the post-plume phase in a timely manner.
- Coordinate PADs as appropriate.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise
Outstanding Issues:
N/A

Capability Target 1.7: Protective Action Decision Implementation for the Post-Plume Phase
Core Capabilities: Operational Coordination; Public Information and Warning; Environmental Response/Health and Safety; Critical Transportation; Health and Social Services; Housing; Natural and Cultural Resources; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2, J.12, J.14, J.14.a-f, M.1, M.1.b, M.4, M.5, M.6, M.7, M.8, and O.1)
Intent: The capability to implement and coordinate PADs to mitigate exposure and address long-term radiological consequences.

Demonstration and Evaluation Guidance:

- Communicate and implement protective actions for agribusinesses, such as dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points.
- Formulate protective action information (e.g., brochures, email, text message, etc.) for the general public and food producers and processors.
- Control, restrict, or prevent distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food controls.
- Communicate instructions to the public regarding relocation decisions and intermediate-term housing for relocated persons.
- Coordinate and implement decisions concerning relocation, including short- and/or long-term relocation of evacuees.
- Control reentry and exit of individuals who are authorized by the ORO to temporarily reenter the restricted area.

- Implement policies concerning return of members of the public to areas that were evacuated during the plume phase.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
N/A

OBJECTIVE 2 - Exposure Control

Capability Target 2.1: Emergency Worker Exposure Control Decision-Making Process
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Situational Assessment; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.2.c, H.11, K.2, K.2.b, K.3, K.3.a, M.1.b, M.8, and O.1)
Intent: The capability to assess and control the radiation exposure and dose received by emergency workers and utilize a decision-making chain to authorize emergency worker exposure limits to be exceeded for specific missions.

Demonstration and Evaluation Guidance:

- Control emergency workers' exposure and dose, including offsite workers performing duties onsite.
- Maintain record of dose as a result of exposure.
- Authorize exposures and dose in excess of identified limits.
- Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.
- Determine a correction factor for DRD-based isotopic release mixture.
- Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.
- Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established PAGs.
- Adequately protect 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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

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, 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.

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 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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

OBJECTIVE 3 - Alert and Notification

Capability Target 3.1: Communications
Core Capabilities: Operational Communications; Operational Coordination; Situational Awareness; Planning
Recommended Evaluation Frequencies: At every assessment activity
Recommended Assessment Activities: Exercise; Communication Drill (N.4.e)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.1.a, E.3, F.1, F.1.a, F.1.b, F.1.c, F.3, and O.1)
Intent: The capability to provide and maintain reliable communications with emergency personnel.

Demonstration and Evaluation Guidance:

- Utilize communication systems that are fully functional, continuously available, and redundant.
- Maintain periodic test results and corrective actions on a real time basis.
- Access at least one communication system that is independent of the commercial telephone system.
- Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
- Identify and address any failures of the systems.
- Transmit, receive, and understand messages (i.e., “content check”).

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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO‘s plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 3.2: Alert and Notification of the Public
Core Capabilities: Public Information and Warning; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Biennial exercise only
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, F.3, and O.1)
Intent: The capability to provide instructions to the public.

Demonstration and Evaluation Guidance:

Alert and Notification System

- Sequentially provide an alert signal followed by an initial instructional message to populated areas.
- Alert and notify the general public.
- Identify and address any failures of the system(s) or portion of a system(s).
- Actual testing of the mobile public address system will be conducted at an agreed upon location.

EAS

- Identify the process to activate the EAS.
- Ensure that updated emergency information is disseminated in a timely manner.
- Ensure that current emergency information is repeated at pre-established intervals.
- Identify the process to activate the EAS, to include the process to receive and then broadcast updated information/ messages and verification of the message, if applicable.
- EAS/NWS Station.
- Broadcast the message on a 24-hour basis.

Route/Alternate Alerting

- Complete route alerting, whether because of failure for system/portion of a system or for exception areas, as needed to demonstrate all routes are capable of being run in allotted time. Emphasis on the most challenging routes and demonstration of these routes will be varied from assessment activity to assessment activity. Challenging routes are defined as those that may be difficult to accomplish, such as those that are lengthy or with conditions (physical or otherwise) that may affect the speed and accuracy with which the route can be completed (e.g., traffic patterns and/or capacity, road conditions, etc.).

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.

Negotiated Extent of Play:
The actual demonstration and evaluation of the physical means to sequentially provide an alert signal, followed by an initial instructional message to populated areas through the 10-mile EPZ, will be demonstrated prior to the start of the exercise on May 10th. Siren activation and broadcast of the EAS message will be simulated. However, EAS messaging will be produced (and simulated broadcast) during the Exercise in sequence with the scenario. Coordination will occur between DEMA and the risk counties with respect to the Alert and Notification System (ANS) process in-sequence with the scenario. Sirens will be coordinated, and the sounding simulated at the appropriate time with the simulated activation of EAS taking place following the simulated activation of the sirens. Following the decision to activate the ANS, in accordance with the ORO's plan and / or procedures, ANS activation should be accomplished in a

timely manner for primary alerting / notification. All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview. Copies of EAS messages will be provided to the FEMA evaluator.
Alert and notification of the Delaware River area will be conducted (simulated) within the scenario as required by the plan. If necessary, simulated activities will be described by interview.

Backup Route alerting will be demonstrated in-sequence with the scenario; a failed siren will be incorporated into exercise play via controller inject for each risk county (New Castle County and Kent County). Backup route alerting crews will stage at Odessa Fire Company and Citizens Hose Company. Crews will be required to broadcast the route alerting message at the fire company prior to running the route so that the evaluators can hear the message to ensure that the vehicle's loud speaker (or other system used to broadcast the message) is operational; crews are not required to broadcast the message while driving the assigned routes. Before running the routes, personnel from both crews will demonstrate the following: equipment operability checks, donning and doffing of personnel protective equipment (single team member per crew), emergency worker briefing, proper use and wear of dosimetry, and proper use of emergency worker paperwork. Donning/doffing of personal protective equipment and dosimetry will be demonstrated at the fire company prior to running the routes; crews will not be required to drive in their issued personal protective equipment but will be required to read/record dosimetry in accordance with SOP 801 while conducting the backup route alerting mission. Routes will be run at the speed as posted in plans/procedures. Evaluators will follow the vehicle that is running the route for each fire company. Crews will be released upon successful completion of the demonstration.

Outstanding Issues:

None

Capability Target 3.3: Emergency Information and Instructions for the Public and News Media
Core Capabilities: Public Information and Warning; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Biennial exercise only
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (E.2, E.4, E.5, G.1, G.2, G.3, G.3.a, G.4, G.5, and O.1)
Intent: The capability to disseminate emergency information and instructions to the public during all phases of an incident.

Demonstration and Evaluation Guidance:

Plume Phase

- Deliver coordinated, prompt, reliable, and actionable information in a timely manner.
- Provide clear, concise, accessible messaging using plain language.
- Messaging addresses appropriate cultural and linguistic considerations.
- Ensure subsequent messaging is consistent with protective actions.
- Update information as the incident progresses, to include validating previously identified protective areas and clearly identifying any new protective action areas, any information

that is no longer valid, and any changes to previously provided information (e.g., rerouting of evacuation routes due to impediments, etc.).
- Respond to media and public inquiries.

Post-Plume Phase

- Rapidly disseminate of ingestion exposure pathway information to predetermined individuals and businesses.
- Provide information to the public that addresses temporary reentry to a restricted area, permanent relocation from areas not evacuated, and return to formerly restricted areas will be communicated.

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.

Negotiated Extent of Play:
Public inquiry calls will be initiated by controller inject. Public inquiry at the State EOC will be staffed with two operators and will receive at least six calls to include at least one identifiable trend. Delaware Emergency News Center JIC support will be provided an inject to conduct a Media Brief. All materials generated by the PIO and / or virtual JIC shall be accessible to the Evaluator via HSIN Connect, WebEOC, and / or other agreed upon means.
Outstanding Issues:
None

OBJECTIVE 4 - Detect, Measure, Sample, Analyze, and Assess

Capability Target 4.1: Field Monitoring Teams 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 (H.11, H.13, I.5, I.6, I.9, I.10, M.7, M.8, and O.1)
Intent: The capability to provide overall management of FMTs to direct movements and measurements to characterize the plume and its impacts.

Demonstration and Evaluation Guidance:

- Brief FMTs on predicted plume location and direction, plume travel speed, equipment operational checks, background measurement, and exposure control procedures before deployment.

- Direct the FMTs to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume.
- Obtain peak plume measurements from FMTs.
- Direct FMTs to collect air samples at locations and times sufficient to characterize the plume.
- Keep Incident Command informed of FMTs activities and location(s) during a HAB incident or other instances when an ICP or other may be in use.
- Coordinate and share information amongst all FMTs (licensee, Federal, state, and local).
- Coordinate sample analysis from field to those responsible for assessing radiological data.
- Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data.
- Assist with development and modification of sampling plans, as appropriate.

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.

Negotiated Extent of Play:
FMTs will be permitted to pre-stage at the Smyrna Readiness Center at 3:00 PM on May 10. All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 4.2: Plume Phase Measurements and Sampling
Core Capabilities: Environmental Response/Health and Safety; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Environmental Monitoring Drill (N.4.d)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.9, H.11, H.11.a, H.11.b, H.12, H.13, I.2, I.5, I.6, I.7, I.8, I.9, I.10, and O.1)
Intent: The capability to make and report measurements of ambient radiation.

Demonstration and Evaluation Guidance:

- Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards.
- Maintain inventory for emergency kits.
- Operate and monitor radiation survey instruments to detect changes in radiation exposure rate while moving and in stationary positions.
- Use appropriate contamination control and PPE.
- Be in location(s) at the appropriate time(s) to detect and characterize the active release (plume).
- Obtain peak plume measurements either directly or from licensee field teams.
- Correctly interpret survey instrument readings to determine submersion in the active plume.
- Collect representative air samples in the active plume on particulate media (e.g., glass or paper filter) and iodine selective media (e.g., silver zeolite cartridge).
- Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination.
- Determine an appropriate low background location to count sample media.
- Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four hours.
- Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor.
- Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as 10-7 µCi/cc.

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.

Negotiated Extent of Play:
The evaluators will evaluate the Field Monitoring Teams starting at 3:00 PM on May 10th at the Smyrna Readiness Center. Personnel from both teams will demonstrate the following: equipment operability checks, donning and doffing of personnel protective equipment (single team member per team), emergency worker briefing, proper use and wear of dosimetry, and field sampling process as per SOPs. Field sampling processes will be conducted in the field in sequence with the scenario.

Outstanding Issues:
None

Capability Target 4.3: Post-Plume Phase Measurements and Sampling
Core Capabilities: Environmental Response/Health and Safety; Planning
Recommended Evaluation Frequencies: At least once every 8-years
Recommended Assessment Activities: Exercise; Environmental Monitoring Drill (N.4.d)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.11, H.11.a, H.11.b, H.12, H.13, I.2, I.5, I.6, I.8, M.7, and O.1)
Intent: The capability to report measurements of ambient radiation and collect environmental, food, and drinking water samples for laboratory analyses that support decision-making.

Demonstration and Evaluation Guidance:

- Maintain and prepare instruments, equipment, and supplies for use, including performing pre-operational checks of radiation survey instruments.
- Use appropriate contamination control and PPE.
- Execute the sampling plan.
- Collect each type of sample necessary to assess the ingestion exposure pathway and to support reentry, relocation, and return decisions. The types of samples necessary are based on the exercise scenario and may include drinking water, soil, vegetation, milk, crops, or other agriculture samples.
- Obtain and record ambient radiation measurements at each sample location and at other locations, as directed.
- Handle sample media to avoid sample cross-contamination and equipment/personnel contamination.
- Prepare and package samples appropriately (e.g., geometries specific to those used in the processing samples, including sample identification, and chain-of-custody forms) to ensure the integrity of samples throughout transportation and transfer.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

Capability Target 4.4: Laboratory Operations
Core Capabilities: Environmental Response/Health and Safety; Planning

Recommended Evaluation Frequencies: At least once every 8-years
Recommended Assessment Activities: Laboratory Drill (N.4.c)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (C.4, H.11, H.11.b, H.13, I.2, I.6, M.7, and O.1)
Intent: The capability to perform laboratory analyses of radioactivity in environmental, food, and drinking water samples to support decision-making.

Demonstration and Evaluation Guidance:

- Prepare analytical equipment for use, including performing calibrations, quality control checks, and background counts, as appropriate.
- Receive and track samples, including completing chain-of-custody records.
- Prepare and process each type of sample necessary to assess the ingestion plume exposure pathway and to support reentry, relocation, and return decisions. The types of samples necessary are based on the exercise scenario and may include drinking water, soil, vegetation, milk, crops, or other agriculture samples.
- Analyze samples to determine the concentration of each radionuclide in each sample. Minimum detection limits (MDLs) for various radionuclides must be low enough to support ORO decisions.
- Provide analysis results to the appropriate organization.
- If the laboratory is used to count air samples during the early phase of an incident and prepare, process, and analyze air filters and cartridges, provide analysis results in a timely manner to support ORO decisions.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

Capability Target 4.5: Plume Phase Analysis and Dose Assessment
Core Capabilities: Environmental Response/Health and Safety; Planning
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.3, H.13, I.6, I.8, I.10, K.3, and O.1)
Intent: The capability to collect data, project doses to members of the public and emergency workers and analyze and communicate the results.

Demonstration and Evaluation Guidance:

- Obtain adequate data to make dose projections.
- Use software and/or other methods (e.g., manual calculations) to make dose projections for members of the public (both TED and thyroid dose) based on plant data.
- Compare dose projections to members of the public to EPA PAGs.
- Compare dose projections to the public with those of the licensee and discuss differences greater than a factor of ten with the licensee and explain reasons for the difference.
- Make initial PARs based on recommendations of the licensee, release data, meteorological data, and other pertinent information.
- Promptly communicate PARs to decision-makers.
- Receive ambient exposure rates from FMTs and compare to model projections.
- Calculate iodine and particulate concentrations from FMT air samples.
- Calculate plume ratios of noble gas, iodine's, and particulates, and compare to model projections.
- Adjust PARs, as necessary, based on analysis of field data.
- Calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway EPZ.

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.

Negotiated Extent of Play:
All activities will be performed in accordance with the ORO's plans / procedures and completed as they would be in an actual emergency.
Outstanding Issues:
None

Capability Target 4.6: Post-Plume Phase Sampling Plan Development and Analysis
Core Capabilities: Environmental Response/Health and Safety; Planning
Recommended Evaluation Frequencies: At least once every 8-years
Recommended Assessment Activities: Exercise; Environmental Monitoring Drill (N.4.d)
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (A.3, H.13, I.2, I.6, I.8, I.10, J.12, J.14.b, J.14.c, K.3, M.7, M.8, and O.1)
Intent: The capability to identify and prioritize sampling, collect data, determine areas where relocation is recommended, identify food that is contaminated above federally approved limits, and analyze and communicate the results.

Demonstration and Evaluation Guidance:

- Periodically conduct radiological assessment of public exposure.
- Estimate projected doses in contaminated areas and identify areas where projected doses exceed relocation PAGs.

- Develop and modify sampling plan to assess the radiological consequences of a release on the food and drinking water supplies.
- Determine areas to be restricted based on factors such as mix of radionuclides in deposited materials, calculated exposure rates compared to PAGs, and analysis of vegetation and soil samples.
- Evaluate the radiological analyses of representative samples of drinking water, food, and other ingestible substances of local interest from potentially impacted areas.
- Compare radiological impacts of analysis on food and water and other representative samples to appropriate ingestion PAGs.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

OBJECTIVE 5 - Operate

Capability Target 5.1: Monitoring, Decontamination, Sheltering, and Registration of Evacuees
Core Capabilities: Operational Coordination; Environmental Response/Health and Safety; Mass Care; Planning
Recommended Evaluation Frequencies: Biennially*
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (J.11.d, J.13, K.4, and O.1)
Intent: The capability to implement radiological monitoring and decontamination of evacuees, and to identify, register, temporarily shelter, and provide congregate care for evacuees at reception centers.

Demonstration and Evaluation Guidance:

- Set-up operations.
- Operationally check instruments and equipment.

Monitoring

- Attain and sustain the overall monitoring productivity rate per hour needed to monitor 20 percent of the plume exposure pathway EPZ population, including transients, within a 12-hour period at each facility. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, per location, by the total complement of monitors using an appropriate procedure.
- Monitor evacuees, service animals, pets, vehicles, and possessions.

- Utilize trigger/action levels for determining the need for decontamination.

Decontamination

- Decontaminate evacuees, and personal belongings, while limiting the spread of contamination.
- Follow-up with any evacuee(s) who cannot be appropriately decontaminated for assessment; ensure the capability to provide evacuee-referrals.

Vehicles

- Monitor and decontaminate vehicles.
- Provide adequate, separate space for both contaminated and non-contaminated vehicles.
- Monitor emergency worker personnel and their equipment and vehicles for contamination.
- Decontaminate evacuee vehicles based on trigger/action levels.

Sheltering and Congregate Care

- Coordinate for incoming evacuees who have been monitored and, if necessary, decontaminated.
- Establish shelter operations.
- Congregate care centers and operations in host/support jurisdictions are sufficient to support the expected number of evacuees.

Registration

- Register evacuees.
- Ensure the registration area is clean and controlled.

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.

*****Exercise participation may be rotated among facilities, but each facility designated in the plan must be evaluated no less than once every eight years.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

Capability Target 5.2: Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles
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 (K.4 and O.1)
Intent: The capability to implement radiological monitoring and decontamination of emergency workers, equipment, and vehicles.

Demonstration and Evaluation Guidance:

- Set-up operations.
- Operationally check instruments and equipment.
- Monitor emergency worker personnel and their equipment and vehicles for contamination.
- Decontaminate emergency worker personnel and their equipment and vehicles based on trigger/action levels.
- Control the spread of contamination.
- Create and maintain a record of monitoring and decontaminating workers upon completion of monitoring and decontamination activities.
- Process for prioritizing emergency workers and equipment before the public in facilities where the public and emergency workers are both processed for contamination.

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.

*****Exercise participation may be rotated among facilities, but each facility designated in the plan must be evaluated no less than once every eight years.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals
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

- Transport contaminated, injured individuals to medical facilities.
- Maintain communications between the medical transportation provider and the receiving medical facility.

Medical Facility

- Operationally check instruments and equipment.
- Set-up, activate, and operate an REA.
- Monitor and decontaminate the individual, equipment, and other items.

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.

Negotiated Extent of Play:
This Capability Target will not be demonstrated or evaluated at this exercise.
Outstanding Issues:
None

Capability Target 5.4: Traffic and Access Control
Core Capabilities: Critical Transportation; Access Control/Identity Verification; Environmental Response/Health and Safety; On-Scene Security, Protection, and Law Enforcement; Operational Coordination; Planning; Situational Assessment.
Recommended Evaluation Frequencies: Biennially
Recommended Assessment Activities: Exercise; Drill
Planning Reference: NUREG-0654/FEMA-REP-1, Rev. 2 (H.12, J.8, J.8.b, J.10, J.10.a, J.11.c, J.11.e, J.11.f, J.14.d, J.14.e, M.1.b, and O.1)
Intent: The capability to select, establish, and staff traffic and access control points and removing impediments to the flow of evacuation traffic.

Demonstration and Evaluation Guidance:

- Select, establish, and staff appropriate TCP/ACPs, consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation), in a timely manner.
- Provide instructions to TAC staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.
- Contact the state or Federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic).
- Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes.

- Make the decision to re-route traffic and coordinate with key decision-makers and the JIC to ensure the alternate route information is appropriately communicated to evacuees.
- Establish procedures to control access to and monitor people and vehicles from the evacuated and restricted areas.
- Authorize reentry of individuals into the restricted areas.
- Establish exit procedures.

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.

Negotiated Extent of Play:
Demonstration of Traffic and Access Control will be conducted out of sequence from the exercise on May 10, 2022, at DEMA at 2:00 PM. Delaware State Police and Delaware Department of Transportation personnel will be interviewed on Traffic and Access Control procedures and exposure control procedures. An emergency worker exposure briefing will be provided. If directed, suiting in anti-contamination clothing and the ingestion of KI will be simulated. A list of equipment that would be used will be available for the Evaluator. A Radiological Emergency Worker kit (dosimeters and anticontamination suit) will be available virtually for inspection. There will be no actual deployment of Access Control and Traffic Control Points. A traffic impediment(s) will be demonstrated in sequence with the scenario. An exercise inject will be provided by the controller regarding a road impediment or impediments that take place during an evacuation. Evaluators will be invited to all discussions regarding the impediment(s). If an evacuation is not one of the protective actions decided upon for this exercise, the demonstration will be done via interview. County EOCs shall be prepared to discuss their roles in support of identification and resolution of traffic impediments, in conjunction with efforts undertaken by the State.
Outstanding Issues:
None

APPENDIX C: PARTICIPATING AGENCIES AND SITE MAPS

Federal Agencies
Federal Emergency Management Agency
State Jurisdictions
Delaware Emergency Management Agency
Delaware Department of Agriculture
Delaware Department of Health and Social Services
Delaware Department of Natural Resources and Environmental Control
Delaware Department of Services for Children, Youth and Families
Delaware Department of Transportation
Delaware Division of Public Health
Delaware Information Analysis Center
Delaware National Guard
Delaware State Fire School
Delaware State Police
Risk Jurisdictions
New Castle County
Kent County
Private Sector Organizations
PSEG Nuclear
American Red Cross
Volunteer Organizations/NGO
Radio Amateur Civil Emergency Service / Amateur Radio Emergency Service

APPENDIX D: DIRECTIONS/ADDRESSES

State

State Emergency Operations Center (EOC)
State Technical Assessment Center (TAC)
165 Brick Store Landing Road
Smyrna, DE 19977

Delaware National Guard (DNG) Field Teams – DNG Smyrna Readiness Center (3:00 PM)
103 Artisan Drive
Smyrna, DE 19977

Counties

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

Kent County EOC
911 Public Safety Boulevard
Dover, DE 19901

Route Alerting

Odessa Fire Company
Station 24
304 Main St.
Odessa, DE 19730

Citizens Hose Fire Company
103 W Commerce St.
Smyrna, DE 19977

Out-of-Sequence Demonstrations

Transportation Dependent (1:00 PM)
DSP Truck Enforcement / Blackbird Truck Weigh Station
4580 North Dupont Hwy (US 13)
Townsend, DE 19734

Traffic / Access Control (2:00 PM)
Siren Activation / EAS (3:00 PM)
State Emergency Operations Center (EOC)
165 Brick Store Landing Road
Smyrna, DE 19977

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
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
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
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
LHD	Local Health Department
LOA	Letter of Agreement
MCC	Mass Care Center
MDDT	Mobile Data Display Terminal
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
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
PD	Police Department
PDAFN	Persons with Disabilities/Access and Funtional Needs
PED	Personal Electronic Dosimeter
PIO	Public Information Officer
PPD	Presidential Policy Directive
PPE	Personal Protective Equipment
PPP	Post-Plume Phase
PRD	Permanent Record Dosimeter
PS	Planning Standard
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
SOP	Standard Operating Procedure
SRO	School Resources Officer
SSO	Social Services Officer
STARS	Statewide Area Radio System
Sv	Sievert (sv)
SWAN	State Warning Alert Notification
TAC	Technical Assessment 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
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
VHF	Very High Frequency
VMS	Variable Message Sign
VOAD	Voluntary Organizations Active in Disaster
VOIP	Voice Over Internet Protocol
WEA	Wireless Emergency Alerts