# Peach Bottom Atomic Power Station
# Delta, Pennsylvania
# After Action Report/Improvement Plan

Exercise Date – April 26, 2022

Radiological Emergency Preparedness (REP) Program

FEMA

*Published July 18, 2022*

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Peach Bottom Atomic Power Station

# After Action Report/Improvement Plan

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# EXECUTIVE SUMMARY

On April 26, 2022, a full participation Plume Exposure Pathway exercise was conducted and evaluated for the 10-Mile Emergency Planning Zone (EPZ) around the Peach Bottom Atomic Power Station (PBAPS) by the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA), Region 3. The previous full-participation Plume Exercise at this site was evaluated on March 2, 2021.

Out-of-Sequence demonstrations were conducted on March 29-30, April 27, May 4-5, and May 17, 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 Peach Bottom Atomic Power Station. 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 and two Level 2 Findings. The Level 2 Findings were successfully redemonstrated during the exercise and resolved. There were also six Plan Issues assessed during the exercise period. Two of the Plan Issues were resolved prior to the publishing of this report after FEMA received updated plans. The two resolved plan issues were assessed to the Cecil County Department of Emergency Services and Maryland Department of Environmental.

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 offsite response organization’s (ORO) emergency plan/implementing procedures, rather than that of the ORO’s performance."

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania and the State of Maryland; the five risk county jurisdictions of Chester County, Lancaster County, York County, Cecil County, and Harford County; and the municipal jurisdictions within Chester County, Lancaster, and York County. 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 (Criteria 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**
Peach Bottom Atomic Power Station Plume Exercise

**Type of Exercise**
Plume

**Exercise Date**
April 26, 2022

**Program**
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

**Scenario Type**
No/Minimal Release

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## 1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Peach Bottom Atomic Power Station (PBAPS) exercise:

### State Jurisdiction

**Commonwealth of Pennsylvania**

- Pennsylvania Auxiliary Communications Service
- Pennsylvania Department of Corrections
- Pennsylvania Department of Drug and Alcohol Programs
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection
- Pennsylvania Department of Health
- Pennsylvania Department of Homeland Security
- Pennsylvania Department of Human Services
- Pennsylvania Department of Labor and Industry
- Pennsylvania Department of Military and Veterans Affairs
- Pennsylvania Department of Revenue
- Pennsylvania Department of Transportation
- Pennsylvania Emergency Management Agency
- Pennsylvania Emergency Management Agency EAO
- Pennsylvania Fish and Boat Commission
- Pennsylvania Governor's Office
- Pennsylvania Liquor Control Board
- Pennsylvania Office of Administration
- Pennsylvania Public Utility Commission
- Pennsylvania State Police

## Risk Jurisdictions

### Chester County

- Chester County Department of Emergency Services
- Chester County Fire Department
- Chester County HazMat
- Chester County Sheriff's Office
- West Nottingham Township
- West Nottingham Township Communications
- West Nottingham Township PIO
- West Nottingham Township Police Department
- West Nottingham Township Supervisor
- Union Fire Company #1 Station 21

### Lancaster County

- Drumore Road Crew
- Drumore Township
- Drumore Township Constable's Office
- Drumore Township Resident
- Drumore Township Secretary Treasure
- Eden Township
- Fulton Township
- Fulton Township Ambulance
- Lancaster County Auxiliary Communications Services
- Lancaster County Commissioner's Office
- Lancaster Countywide Communications
- Lancaster County Emergency Management Agency
- Lancaster County Hazmat
- Lancaster County Hazmat 2
- Lancaster Sheriff's Office
- Little Britain Township
- Martic Township
- Quarryville Township
- Quarryville Township Fire Department
- Rawlinsville Fire Department
- Robert Fulton Fire Department
- Solanco Regional Emergency Management Agency

### York County

- Airville Volunteer Fire Company
- Citizens Volunteer Fire Company, Station 56
- Delta/Cardiff Volunteer Fire Department
- Delta Peach Bottom Township
- Delta Peach Bottom Township Board Members and Volunteers
- Fawn Grove Township/Borough

- Lower Chanceford Public Works
- Lower Chanceford Township
- Lower Chanceford Township Chairman of the Board of Supervisors
- Southern York County Emergency Medical Service
- York County 9-1-1
- York County Commissioners
- York County Department of Emergency Services
- York County GIS
- York County HazMat
- York County Planning Commission
- York County Sheriff's Office

## State Jurisdiction

### State of Maryland

- Maryland Coordination and Analysis Center
- Maryland Department of Agriculture
- Maryland Department of Disabilities
- Maryland Department of Environment
- Maryland Department of General Services
- Maryland Department of Health
- Maryland Department of Human Services
- Maryland Department of Information Technologies
- Maryland Department of Natural Resources
- Maryland Department of Planning
- Maryland Department of Transportation
- Maryland Emergency Management Agency
- Maryland Energy Administration
- Maryland Environmental Administration
- Maryland Institute of Emergency Medical Services Systems
- Maryland Military Department
- Maryland Public Service Commission
- Maryland State Department of Education
- Maryland State Highway Administration
- Maryland State Police

## Risk Jurisdictions

### Cecil County

- Cecil County Agriculture Division
- Cecil County Department of Emergency Services
- Cecil County Department of Public Works
- Cecil County Department of Public Works, Sewer Waste Management
- Cecil County Department of Social Services
- Cecil County Fire/Rescue
- Cecil County Government
- Cecil County Health Department
- Cecil County Information Technology Department
- Cecil County Parks and Recreation

- Cecil County Public Schools
- Radio Amateur Civil Emergency Service (RACES)
- Rising Sun Emergency Medical Services

**Harford County**

- Bel Air Police Department
- Harford County Administration
- Harford County Agriculture Division
- Harford County Community Services
- Harford County Department of Community and Economic Development, Harford Transit Link
- Harford County Department of Emergency Services
- Harford County Department of Public Works
- Harford County Department of Public Works, Division of Highways
- Harford County Department of Public Works, Division of Water & Sewer
- Harford County Executive
- Harford County Government, Department of Governmental & Community Relations (HCG-GCR)
- Harford County Health Department
- Harford County Human Resources
- Harford County Law Department
- Harford County Office of Information and Communications Technology (OICT)
- Harford County Office of Mental Health/Core Services Agency
- Harford County Parks and Recreation
- Havre De Grace Police Department
- Harford County Public Safety
- Harford County Public Schools Transportation
- Harford County Sheriff's Office
- Harford County Social Services
- Harford County Transit
- Harford County Transportation Department
- Harford County Volunteer Fire Association (HCVFA)
- Harford County Whiteford Volunteer Fire Company

**School/School Districts**

- Cecil County Public Schools
- Harford County Public Schools
- Penn Manor School District
- Solanco School District
- Southeastern School District

**Private/Volunteer Organizations**

- American Red Cross
- Cecil County Radio Amateur Civil Emergency Services
- Constellation Energy

- ChristianaCare Union Hospital
- Delmarva Power
- Delta Peach Bottom ARES/RACES
- Drumore Township ACS/ARES
- Exelon – Conowingo Dam
- Harford County Amateur Radio ARES/RACES
- Lancaster County Amateur Radio Emergency Services Group (ARES)
- York County Radio Amateur Civil Emergency Service (RACES)
- Upper Chesapeake Health Harford County University of Maryland

**Federal Organizations**

- Environmental Protection Agency
- Federal Emergency Management Agency
- Nuclear Regulatory Commission
- United States Coast Guard Capital Region
- USDA Natural Resources Conservation Services (NRCS)

# 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 Radiological Emergency Preparedness (REP) Plume Exposure Pathway Exercise was conducted during the week of April 26, 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 Peach Bottom Atomic Power Station (PBAPS). 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, December 2019
- Radiological Emergency Preparedness Program Manual, January 2019

**Emergency Planning Zone Description:**
Constellation owns and operates the Peach Bottom Atomic Power Station (PBAPS). The station consists of one 40-megawatt (MW), high-temperature, gas-cooled reactor (Unit 1), decommissioned in October 1974, and two operating boiling water reactors (Units 2 and 3) rated at 1,065 MW per unit. The operating licenses for the facility were granted in October 1973 (Unit 2) and July 1974 (Unit 3); commercial operation began at the site in July 1974 (Unit 2) and December 1974 (Unit 3).

The coordinates of the plant site are 39°45’32” north (latitude) by 76°16’9” west (longitude). The site consists of 620 acres located on the west shore of Conowingo Pond; a reservoir formed by the backwater of the Conowingo Dam on the Susquehanna River. The site is primarily in Peach Bottom Township, York County, Pennsylvania; a small portion of the property lies in Lancaster County in southeastern Pennsylvania near the mouth of Rock Run Creek. The minimum exclusion distance (distance from the center point of the reactor vessel to the site area boundary) specified for the PBAPS is 2,700 feet. Constellation owns all the land within the exclusion area; there are no private residences on site.

The plant is located about 38 miles north-northeast of Baltimore, Maryland; 45 miles southeast of Harrisburg, Pennsylvania; and 20 miles south-southeast of Lancaster, Pennsylvania. The nearest communities are Delta, Pennsylvania, and Cardiff, Maryland, which are located approximately four and five miles west-southwest of the site, respectively. There are 97 sirens providing coverage for the 10-mile Emergency Planning Zone(EPZ); 65 are in Pennsylvania. Soils of the Manor-Glenelg Association predominate in the site area. These soils, which are generally underlain by schist or phyllite, are shallow to moderately deep and are found on moderate to very steep slopes. The general topography of the site is hilly, with elevations ranging from 110 feet to over 460 feet above mean sea level (MSL); the plant is 116 feet above MSL.

The site is characterized by broad ridge tops and steep hillsides along the river. The climate in this area of York County is mild but humid. Prevailing winds are from the west. The average rainfall is approximately 40.5 inches, and the average annual temperature is 52.8° Fahrenheit. The area in the immediate vicinity of the plant is mostly agricultural. There are no commercial airports within a 10-mile radius. The closest major airport is in Harrisburg, about 50 miles northwest of the site. A smaller airport servicing commuter and private aircraft is located in Lancaster, about 25 miles north of the site. No public highways pass through the plant, and no major arterial highways pass near it. Access to the plant is by two roads: one, from the nearby town of Delta, leads to the decommissioned Unit 1 area and Information Center; the other passes north of Delta and enters the plant area near Units 2 and 3.

## 2.2 Exercise Objectives, Capabilities and Activities

The objectives of the 2022 Peach Bottom Atomic Power Station (PBAPS) 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 demonstrated.

The protection of school children is also a vital mission of the REPP. School districts and selected schools demonstrated the capability to communicate and coordinate the collection, evacuation, transportation, and shelter of students attending schools within the EPZ. Provisions for students who live within the EPZ but attend school outside were also evaluated.

## 2.3 Scenario Summary

The simulated weather forecast for the exercise is partly sunny with light winds from the northwest. Highs will be in the mid-60s. The skies will become cloudy in the evening with temperatures in the low 50s. The chance of precipitation is 10%. Wind Direction is from 25 degrees at 8 miles per hour (mph).

At 1600 the exercise begins. For the postulated event, the effected unit is Unit #2.

Unit #1 is operating at 100% power; Unit #2 is operating at 100% power.

At 1610 the PBAPS Shift Manager declares a NOTIFICATION OF UNUSAL EVENT Emergency Classification Level (ECL)

At 1700 the Shift Manager declares an ALERT ECL with a monitored release in progress. OROs mobilize personnel and staff emergency facilities.

At 1817 the Shift Manager declares a SITE AREA EMERGENCY with an airborne radiation release in progress. OROs may make protective/precautionary actions in accordance with plans and procedures.

At 1909 the Shift Manager declares a GENERAL EMERGENCY based on plant conditions and with an airborne radiation release in progress. The Licensee makes a Protective Action Recommendation (PAR) to the Commonwealth. Decision makers consider the Licensee PAR and other factors and OROs make protective actions based on plans and procedures.

At 2030 the exercise was 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 April 26, 2022, Biennial Plume Exposure Pathway 10-mile Emergency Planning Zone (EPZ) Radiological Emergency Preparedness (REP) Exercise. These exercises were 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 EPZ surrounding the Peach Bottom Atomic Power Station.

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 Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the extent-of-play agreement or at the two-year or eight-year interval required in the FEMA REP Program Manual.
- (M) Met: The jurisdiction or functional entity performed all activities under the Demonstration Criterion to the level required in the Extent-of-Play Agreement, with no Level 1 or Level 2 Findings assessed under that criterion 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 |
|---|---|---|---|
| Lampeter-Strasburg School - Monitoring and Decontamination Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | L2 – Closed by Re-demonstration |
| Penn Grove Middle School- Monitoring and Decontamination of Emergency Workers | 5.2 | Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles | L2 – Closed by Re-demonstration |
| South Eastern School District - School Districts | 1.5 | Protective Action Decision Implementation for the Plume Phase | P- Open |
| Penn Manor District Office - School Districts | 1.5 | Protective Action Decision Implementation for the Plume Phase | P- Open |
| Solanco School District Office - School Districts | 1.5 | Protective Action Decision Implementation for the Plume Phase | P- Open |
| Lampeter-Strasburg School - Reception Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | P- Open |
| Maryland Field Monitoring Team B - State Field Monitoring Team | 4.2 | Plume Phase Measurements and Sampling | P- Closed by Plan Update |
| Rising Sun Community Fire Company - MS-1 Ambulance | 5.3 | Transportation and Treatment of Contaminated, Injured Individuals | P- Closed by Plan Update |

### Table 3.1b Exercise Evaluation Assessments Met

| Location | Target | Core Capability | Status |
|---|---|---|---|
| **Objective 1: Emergency Operations Management** | | | |
| Maryland Joint Operations Center - Emergency Operations Center, State | 1.1 | Mobilization | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center - | 1.1 | Mobilization | M |
| York County EOC - Emergency Operations Center, County, Risk | 1.1 | Mobilization | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 1.1 | Mobilization | M |

| | | | |
|---|---|---|---|
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Pennsylvania State Police Troop J Lancaster Barracks - State Traffic and Access Control | 1.1 | Mobilization | M |
| Manheim High School - Mass Care Center | 1.1 | Mobilization | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 1.1 | Mobilization | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 1.1 | Mobilization | M |
| Southern York County EMS - Monitoring and Decontamination Station, Emergency Worker | 1.1 | Mobilization | M |
| Maryland Field Monitoring Team A - State Field Monitoring Team | 1.1 | Mobilization | M |
| Maryland Field Monitoring Team B - State Field Monitoring Team | 1.1 | Mobilization | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 1.1 | Mobilization | M |
| Water Witch Fire Company Staging Area - Route Alerting | 1.1 | Mobilization | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.1 | Mobilization | M |
| Patterson Mill High School - Mass Care Center | 1.1 | Mobilization | M |
| Rising Sun High School - Mass Care Center | 1.1 | Mobilization | M |
| York County 4 H - Mass Care Center | 1.1 | Mobilization | M |
| Octorara Middle School (Chester County) - Reception Center | 1.1 | Mobilization | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Susquehannock High School - Reception Center | 1.1 | Mobilization | M |
| Susquehannock High School - Monitoring and Decontamination Center, General Public | 1.1 | Mobilization | M |

| | | | |
|---|---|---|---|
| Lampeter-Strasburg School - Monitoring and Decontamination Center, General Public | 1.1 | Mobilization | M |
| Lampeter-Strasburg School - Reception Center | 1.1 | Mobilization | M |
| Octorara Middle School (Chester County) - Monitoring and Decontamination Center, General Public | 1.1 | Mobilization | M |
| Octorara High School - Mass Care Center | 1.1 | Mobilization | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 1.1 | Mobilization | M |
| Commonwealth Joint Information Center at the CRCC - Joint Information Center | 1.1 | Mobilization | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 1.1 | Mobilization | M |
| Constellation Emergency Operations Facility - Emergency Operating Facility | 1.1 | Mobilization | M |
| Radiological Rapid Response Vehicle (R3V) - State Mobile Laboratory | 1.1 | Mobilization | M |
| State Field Monitoring Team A (BRP) - State Field Monitoring Team | 1.1 | Mobilization | M |
| State Field Monitoring Team B (BRP) - State Field Monitoring Team | 1.1 | Mobilization | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.1 | Mobilization | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 1.1 | Mobilization | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.1 | Mobilization | M |
| Constellation Media Operations Center - Joint Information Center | 1.1 | Mobilization | M |
| Water Witch Fire Company Staging Area - Route Alerting | 1.2 | Direction and Control | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Maryland Field Monitoring Team B - State Field Monitoring Team | 1.2 | Direction and Control | M |

| | | | |
|---|---|---|---|
| Maryland Field Monitoring Team A - State Field Monitoring Team | 1.2 | Direction and Control | M |
| Maryland Joint Operations Center - Emergency Operations Center, State | 1.2 | Direction and Control | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 1.2 | Direction and Control | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 1.2 | Direction and Control | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 1.2 | Direction and Control | M |
| Manheim High School - Mass Care Center | 1.2 | Direction and Control | M |
| Pennsylvania State Police Troop J Lancaster Barracks - State Traffic and Access Control | 1.2 | Direction and Control | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center - | 1.2 | Direction and Control | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 1.2 | Direction and Control | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Fallston High School - Monitoring and Decontamination Center, General Public | 1.2 | Direction and Control | M |
| Fallston High School - Monitoring and Decontamination Station, Emergency Worker | 1.2 | Direction and Control | M |
| Patterson Mill High School - Mass Care Center | 1.2 | Direction and Control | M |
| Rising Sun High School - Monitoring and Decontamination Center, General Public | 1.2 | Direction and Control | M |

| | | | |
|---|---|---|---|
| Rising Sun High School - Monitoring and Decontamination Station, Emergency Worker | 1.2 | Direction and Control | M |
| Rising Sun High School - Mass Care Center | 1.2 | Direction and Control | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 1.2 | Direction and Control | M |
| York County 4 H - Mass Care Center | 1.2 | Direction and Control | M |
| CristianaCare Union Hospital - MS-1 Hospital | 1.2 | Direction and Control | M |
| Rising Sun Community Fire Company - MS-1 Ambulance | 1.2 | Direction and Control | M |
| Whiteford Volunteer Fire Company - MS-1 Ambulance | 1.2 | Direction and Control | M |
| University of Maryland Upper Chesapeake Medical Center - MS-1 Hospital | 1.2 | Direction and Control | M |
| State Field Monitoring Team A (BRP) - State Field Monitoring Team | 1.2 | Direction and Control | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Octorara Middle School (Chester County) - Reception Center | 1.2 | Direction and Control | M |
| Southern York County EMS - Monitoring and Decontamination Station, Emergency Worker | 1.2 | Direction and Control | M |
| Susquehannock High School - Reception Center | 1.2 | Direction and Control | M |
| Susquehannock High School - Monitoring and Decontamination Center, General Public | 1.2 | Direction and Control | M |
| Lampeter-Strasburg School - Monitoring and Decontamination Center, General Public | 1.2 | Direction and Control | M |
| Lampeter-Strasburg School - Reception Center | 1.2 | Direction and Control | M |
| Octorara Middle School (Chester County) - Monitoring and Decontamination Center, General Public | 1.2 | Direction and Control | M |
| Octorara High School - Mass Care Center | 1.2 | Direction and Control | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 1.2 | Direction and Control | M |

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| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 1.2 | Direction and Control | M |
| Commonwealth Joint Information Center at the CRCC - Joint Information Center | 1.2 | Direction and Control | M |
| Constellation Media Operations Center - Joint Information Center | 1.2 | Direction and Control | M |
| Constellation Emergency Operations Facility - Emergency Operating Facility | 1.2 | Direction and Control | M |
| Radiological Rapid Response Vehicle (R3V) - State Mobile Laboratory | 1.2 | Direction and Control | M |
| State Field Monitoring Team B (BRP) - State Field Monitoring Team | 1.2 | Direction and Control | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.2 | Direction and Control | M |

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| York County EOC - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| York County EOC - Emergency Operations Center, County, Risk | 1.2 | Direction and Control | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 1.3 | Protective Action Recommendations | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 1.3 | Protective Action Recommendations | M |
| Constellation Emergency Operations Facility - Emergency Operating Facility | 1.3 | Protective Action Recommendations | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 1.4 | Protective Action Decisions for the Plume Phase | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 1.4 | Protective Action Decisions for the Plume Phase | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 1.4 | Protective Action Decisions for the Plume Phase | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 1.4 | Protective Action Decisions for the Plume Phase | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| York County EOC - Emergency Operations Center, County, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |

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| Conowingo Elementary School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| N. Harford Elementary School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| N. Harford Middle School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| N. Harford High School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Fawn Elementary School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| South Eastern Middle School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Swift Middle School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Penn Manor High School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| Quarryville Elementary School - Schools | 1.5 | Protective Action Decision Implementation for the Plume Phase | M |
| **Objective 2: Exposure Control** | | | |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 2.1 | Emergency Worker Exposure Control Decision-Making Process | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 2.1 | Emergency Worker Exposure Control Decision-Making Process | M |

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| MDE Accident Assessment Center - State Accident Assessment Center | 2.1 | Emergency Worker Exposure Control Decision-Making Process | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 2.1 | Emergency Worker Exposure Control Decision-Making Process | M |
| York County EOC - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| University of Maryland Upper Chesapeake Medical Center - MS-1 Hospital | 2.2 | Emergency Worker Exposure Control Management | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 2.2 | Emergency Worker Exposure Control Management | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Pennsylvania State Police Troop J Lancaster Barracks - State Traffic and Access Control | 2.2 | Emergency Worker Exposure Control Management | M |
| Maryland Field Monitoring Team A - State Field Monitoring Team | 2.2 | Emergency Worker Exposure Control Management | M |
| Maryland Field Monitoring Team B - State Field Monitoring Team | 2.2 | Emergency Worker Exposure Control Management | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Water Witch Fire Company Staging Area - Route Alerting | 2.2 | Emergency Worker Exposure Control Management | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Fallston High School - Monitoring and Decontamination Center, General Public | 2.2 | Emergency Worker Exposure Control Management | M |
| Fallston High School - Monitoring and Decontamination Station, Emergency Worker | 2.2 | Emergency Worker Exposure Control Management | M |
| Rising Sun High School - Monitoring and Decontamination Center, General Public | 2.2 | Emergency Worker Exposure Control Management | M |
| Rising Sun High School - Monitoring and Decontamination Station, Emergency Worker | 2.2 | Emergency Worker Exposure Control Management | M |

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| Cristiana Care Union Hospital - MS-1 Hospital | 2.2 | Emergency Worker Exposure Control Management | M |
| Rising Sun Community Fire Company - MS-1 Ambulance | 2.2 | Emergency Worker Exposure Control Management | M |
| Whiteford Volunteer Fire Company - MS-1 Ambulance | 2.2 | Emergency Worker Exposure Control Management | M |
| State Field Monitoring Team B (BRP) - State Field Monitoring Team | 2.2 | Emergency Worker Exposure Control Management | M |
| Octorara Middle School (Chester County) - Reception Center | 2.2 | Emergency Worker Exposure Control Management | M |
| Southern York County EMS - Monitoring and Decontamination Station, Emergency Worker | 2.2 | Emergency Worker Exposure Control Management | M |
| Susquehannock High School - Reception Center | 2.2 | Emergency Worker Exposure Control Management | M |
| Susquehannock High School - Monitoring and Decontamination Center, General Public | 2.2 | Emergency Worker Exposure Control Management | M |
| Lampeter-Strasburg School - Monitoring and Decontamination Center, General Public | 2.2 | Emergency Worker Exposure Control Management | M |
| Lampeter-Strasburg School - Reception Center | 2.2 | Emergency Worker Exposure Control Management | M |
| Octorara Middle School (Chester County) - Monitoring and Decontamination Center, General Public | 2.2 | Emergency Worker Exposure Control Management | M |
| Radiological Rapid Response Vehicle (R3V) - State Mobile Laboratory | 2.2 | Emergency Worker Exposure Control Management | M |
| State Field Monitoring Team A (BRP) - State Field Monitoring Team | 2.2 | Emergency Worker Exposure Control Management | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center | 2.2 | Emergency Worker Exposure Control Management | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 2.2 | Emergency Worker Exposure Control Management | M |

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| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 2.2 | Emergency Worker Exposure Control Management | M |
| **Objective 3: Alert and Notification** | | | |
| Cecil County EOC - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| York County EOC - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 3.1 | Communications | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Pennsylvania State Police Troop J Lancaster Barracks - State Traffic and Access Control | 3.1 | Communications | M |
| Manheim High School - Mass Care Center | 3.1 | Communications | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 3.1 | Communications | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 3.1 | Communications | M |
| Maryland Joint Operations Center - Emergency Operations Center, State | 3.1 | Communications | M |
| Maryland Field Monitoring Team A - State Field Monitoring Team | 3.1 | Communications | M |
| Maryland Field Monitoring Team B - State Field Monitoring Team | 3.1 | Communications | M |

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| Southern York County EMS - Monitoring and Decontamination Station, Emergency Worker | 3.1 | Communications | M |
| Water Witch Fire Company Staging Area - Route Alerting | 3.1 | Communications | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| Fallston High School - Monitoring and Decontamination Center, General Public | 3.1 | Communications | M |
| Fallston High School - Monitoring and Decontamination Station, Emergency Worker | 3.1 | Communications | M |
| Patterson Mill High School - Mass Care Center | 3.1 | Communications | M |
| Rising Sun High School - Monitoring and Decontamination Center, General Public | 3.1 | Communications | M |
| Rising Sun High School - Monitoring and Decontamination Station, Emergency Worker | 3.1 | Communications | M |
| Rising Sun High School - Mass Care Center | 3.1 | Communications | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 3.1 | Communications | M |
| York County 4 H - Mass Care Center | 3.1 | Communications | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center - | 3.1 | Communications | M |
| Octorara Middle School (Chester County) - Reception Center | 3.1 | Communications | M |
| Susquehannock High School - Reception Center | 3.1 | Communications | M |
| Susquehannock High School - Monitoring and Decontamination Center, General Public | 3.1 | Communications | M |
| Lampeter-Strasburg School - Monitoring and Decontamination Center, General Public | 3.1 | Communications | M |
| Lampeter-Strasburg School - Reception Center | 3.1 | Communications | M |

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| Octorara Middle School (Chester County) - Monitoring and Decontamination Center, General Public | 3.1 | Communications | M |
| Octorara High School - Mass Care Center | 3.1 | Communications | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 3.1 | Communications | M |
| Commonwealth Joint Information Center at the CRCC - Joint Information Center | 3.1 | Communications | M |
| Constellation Media Operations Center - Joint Information Center | 3.1 | Communications | M |
| Constellation Emergency Operations Facility - Emergency Operating Facility | 3.1 | Communications | M |
| State Field Monitoring Team A (BRP) - State Field Monitoring Team | 3.1 | Communications | M |
| State Field Monitoring Team B (BRP) - State Field Monitoring Team | 3.1 | Communications | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 3.1 | Communications | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.1 | Communications | M |
| Radiological Rapid Response Vehicle (R3V) - State Mobile Laboratory | 3.1 | Communications | M |
| York County EOC - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |

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| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 3.2 | Alert and Notification to the Public | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 3.2 | Alert and Notification to the Public | M |
| Maryland Joint Operations Center - Emergency Operations Center, State | 3.2 | Alert and Notification to the Public | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |
| Water Witch Fire Company Staging Area - Route Alerting | 3.2 | Alert and Notification to the Public | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |
| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 3.2 | Alert and Notification to the Public | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 3.2 | Alert and Notification to the Public | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |

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| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 3.2 | Alert and Notification to the Public | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center - | 3.2 | Alert and Notification to the Public | M |
| Commonwealth Joint Information Center at the CRCC - Joint Information Center | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Constellation Media Operations Center - Joint Information Center | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| York County EOC - Emergency Operations Center, County, Risk | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Maryland Joint Operations Center - Emergency Operations Center, State | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 3.3 | Emergency Information and Instructions for the Public and News Media | M |
| **Objective 4: Detect, Measure, Sample, Analyze, and Assess** | | | |
| Radiological Rapid Response Vehicle (R3V) - State Mobile Laboratory | 4.1 | Field Monitoring Teams Management | M |
| MDE Accident Assessment Center - State Accident Assessment Center | 4.1 | Field Monitoring Teams Management | M |
| State Field Monitoring Team A (BRP) - State Field Monitoring Team | 4.2 | Plume Phase Measurements and Sampling | M |
| Maryland Field Monitoring Team A - State Field Monitoring Team | 4.2 | Plume Phase Measurements and Sampling | M |
| Pennsylvania Accident Assessment Center (BRP) - State Accident Assessment Center | 4.5 | Plume Phase Analysis and Dose Assessment | M |
| **Objective 5: Operate** | | | |
| Octorara Middle School (Chester County) - Reception Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |

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| Susquehannock High School - Reception Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Susquehannock High School - Monitoring and Decontamination Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Dallastown High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Dallastown Middle School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Garden Spot Middle School- Mass Care | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Spring Grove Middle School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Spring Grove Intermediate School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Spring Grove High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Penn Manor Middle School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Octorara Middle School (Chester County) - Monitoring and Decontamination Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Octorara High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Manheim High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Fallston High School - Monitoring and Decontamination Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Patterson Mill High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Rising Sun High School - Monitoring and Decontamination Center, General Public | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |

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| Rising Sun High School - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| York County 4 H - Mass Care Center | 5.1 | Monitoring, Decontamination, Sheltering, and Registration of Evacuees | M |
| Southern York County EMS - Monitoring and Decontamination Station, Emergency Worker | 5.2 | Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles | M |
| CristianaCare Union Hospital - MS-1 Hospital | 5.3 | Transportation and Treatment of Contaminated, Injured Individuals | M |
| Whiteford Volunteer Fire Company - MS-1 Ambulance | 5.3 | Transportation and Treatment of Contaminated, Injured Individuals | M |
| University of Maryland Upper Chesapeake Medical Center - MS-1 Hospital | 5.3 | Transportation and Treatment of Contaminated, Injured Individuals | M |
| Harford County Emergency Operations Center - Emergency Operations Center, County, Risk | 5.4 | Traffic and Access Control | M |
| Cecil County EOC - Emergency Operations Center, County, Risk | 5.4 | Traffic and Access Control | M |
| Maryland Joint Operations Center - Emergency Operations Center, State | 5.4 | Traffic and Access Control | M |
| Maryland Department of Emergency Management (MDEM) - Emergency Operations Center, State | 5.4 | Traffic and Access Control | M |
| Pennsylvania State Police Troop J Lancaster Barracks - State Traffic and Access Control | 5.4 | Traffic and Access Control | M |
| Lower Chanceford Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Fawn Grove Township/ Fawn Borough Emergency Operations Center - Emergency Operations Center, Municipal | 5.4 | Traffic and Access Control | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Delta-Peach Bottom Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| York County EOC - Emergency Operations Center, County, Risk | 5.4 | Traffic and Access Control | M |
| E. Drumore Twp/Providence Twp/Quarryville Twp/Solenco Twp combined Emergency Operation Center | 5.4 | Traffic and Access Control | M |

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| Martic Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Little Britain Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Fulton Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Drumore Township Emergency Operation Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Lancaster County Emergency Operation Center - Emergency Operations Center, County, Risk | 5.4 | Traffic and Access Control | M |
| West Nottingham Township Emergency Operations Center - Emergency Operations Center, Municipal, Risk | 5.4 | Traffic and Access Control | M |
| Chester County Emergency Operations Center - Emergency Operations Center, County, Risk | 5.4 | Traffic and Access Control | M |
| Pennsylvania Commonwealth Response Coordination Center - Emergency Operations Center, State | 5.4 | Traffic and Access Control | M |

## 3.3 Criteria Evaluation Summaries

### 3.3.1 State Jurisdictions

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

#### 3.3.1.1 Commonwealth of Pennsylvania

##### 3.3.1.1.1 Commonwealth of Pennsylvania Response Coordination Center (CRCC)

a. Met: 1.1, 1.2, 1.4, 1.5, 2.1, 3.1, 3.2, 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

##### 3.3.1.1.2 Commonwealth of Pennsylvania Joint Information Center

a. Met: 1.1, 1.2, 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

#### 3.3.1.1.3 Pennsylvania Accident Assessment Center at the CRCC

a. Met: 1.1, 1.2, 1.3, 1.4, 2.1, 3.1, 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

#### 3.3.1.1.4 Pennsylvania Radiological Rapid Response Vehicle

a. Met: 1.1, 1.2, 2.2, 3.1, 4.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.1.1.5 Pennsylvania State Field Monitoring Team A

a. Met: 1.1, 1.2, 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

#### 3.3.1.1.6 Pennsylvania State Field Monitoring Team B

a. Met: 1.1, 1.2, 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

#### 3.3.1.1.7 Pennsylvania State Police

a. Met: 1.1, 1.2, 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

#### 3.3.1.1.8 Constellation Media Operations Center

a. Met: 1.1, 1.2, 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

#### 3.3.1.1.9 Constellation Emergency Operations Center

a. Met: 1.1, 1.2, 1.3, 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

### 3.3.1.2 State of Maryland

#### 3.3.1.2.1 Maryland Department of Emergency Management (MDEM)

a. Met: 1.1, 1.2, 1.4, 1.5, 2.1, 3.1, 3.2, 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

#### 3.3.1.2.2 Maryland Department of Environmental Accident Assessment Center

a. Met: 1.1, 1.2, 1.3, 1.4, 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

#### 3.3.1.2.3 Maryland Department of Environmental Field Team One

a. Met: 1.1, 1.2, 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

#### 3.3.1.2.4 Maryland Department of Environmental Field Team Two

a. Met: 1.1, 1.2, 2.2, 3.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE

**ISSUE NO:** 46-22-5.1-P-007

**Capability Target**: 4.2 – Field Monitoring Teams make, record, and report measurements of ambient radiation to appropriate authorities; radioiodine and particulate samples are collected

**CONDITION**: The MDE State Field Monitoring Teams (FMT) have procured new instrumentation to be utilized for ambient radiation monitoring and iodine and particulate counting. The instrumentation included a RadEye B20-ER used for ambient radiation exposure measurements below 200 mR/hr and particulate counting, a RadEye SPRD-ER for exposure measurements greater than 200 mR/hr, and a RadEye SX/SPA-3 for analyzing the radioiodine sample media. A comprehensive procedure for conducting the required radioactive source checks within an approved range of readings was not provided for the RadEye SPRD-ER and RadEye SX/SPA-3 which does not assure proper operation of these instruments. Although the FMT was able to successfully count the air sample media using the SX/SPA-3 in accordance with their procedure, the results are not reliable since the counting system is not validated with an initial source check. A procedure for conducting open and closed window measurements was not included, as well as a procedure for interpreting these measurements to determining whether the location was appropriate for collecting an air sample. Team members used their hand to approximate closed window readings. This method was not provided in the procedure and was not reproduceable.

**POSSIBLE CAUSE:** The operability checks for the RadEye SPRD-ER and RadEye SX/SPA-3 were in accordance with the manufacturer specifications for conducting an operability check, but did not meet the intent of ANSI N323a, requiring an acceptable range of readings (plus or minus 20 percent) for a survey instrument operational check. The low range detector was not equipped with a radiation probe with an open and closed window that would normally be used to detect the presence of beta emitters in a radioactive plume. The instrument is equipped with the optional H10 gamma energy filter, which is not the equivalent of a beta shield. To approximate a closed window reading, the team used their hand to cover the instrument window, which is not a viable, reproduceable methodology.

**REFERENCE**:

**1.** Thermoscientific Operating Instructions DB-065E, RadEye B20-ER Multi-Purpose Survey Meter.
**2.** MDE Ambient Radiation Monitoring and Sampling, EP-302, Revision 14, September 2021.
**3.** ANSI N323a Radiation Protection Instrumentation Test and Calibration, 1997

**EFFECT:** If the radiation monitoring instrument response is not verified prior to use, it does not provide reasonable assurance that the results of the measurements are accurate. Field team members use their instrumentation to locate the plume, determine submersion in the active plume, and determine whether the location is suitable for a representative air sample. Methodology for determining plume immersion should be based on accurate, reproduceable measurements to ensure that air samples are collected at appropriate locations. The radioiodine cartridge measurements can potentially be used to make protective action decisions for the general public. As such, it is critically important to ensure that survey and counting instruments accurately respond within an established range of readings

to ensure that field measurements are accurate and can be used with confidence for dose assessment and protective action decisions.

**RECOMMENDATION/CLOSED:** On June 2, 2022, FEMA Region 3 received procedure and plan updates from Maryland Department of Environmental (MDE). The MDE procedure EP 302 Ambient Radiation Monitoring and Sampling was updated to correct the current plan issue. MDE also provided an updated MDE Quality Assurance Checklist relating to their RadEye equipment for field use. This Plan Issue is resolved and closed.

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

**3.3.1.2.5 Maryland Joint Operations Center**

a. Met: 1.1, 1.2, 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 Pennsylvania Risk Jurisdictions**

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

**3.3.2.1 Chester County Emergency Operations Center**

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 3.3, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
a. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

**3.3.2.2 Chester County, Reception Center at the Octorara Primary Leaning Center**

a. Met: 1.1, 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

**3.3.2.3 Chester County, Emergency Worker Monitoring/Decontamination Station at the Penn Grove Middle School**

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

**ISSUE NO:** 46-22-5.1-L2-004

**Capability Target**: 5.2 - The capability to implement radiological monitoring and decontamination of emergency workers, equipment, and vehicles.

**CONDITION**: Staff at the Chester County Emergency Worker (EW) Monitoring and Decontamination Station did not obtain background radiation readings in counts per minute prior to monitoring EW personnel, equipment, and vehicles. Staff responsible for secondary monitoring of EWs did not demonstrate use of handheld survey meters to monitor each EW's thyroid gland to detect the uptake of radioactive iodine, though this action was briefed to staff during the initial facility standup/radiological briefing.

**POSSIBLE CAUSE:** Although previously trained and briefed on how to successfully conduct these activities, staff did not reference their procedures or checklists during the exercise.

**REFERENCE**:
1. NUREG-0654/FEMA-REP-1, Rev. 2 (K.4 and O.1)
2. Chester County Radiological Emergency Response Annex for Incidents at a Nuclear Power Plant, November 2013

**EFFECT:** Without correctly establishing background radiation readings, staff would not be able to accurately determine whether decontamination procedures should be initiated. EWs face an increased risk of illness and injury if not adequately monitored for radioactive iodine uptake in the thyroid.

**RE-DEMONSTRATED AND CLOSED:** During the exercise, play was paused so that the evaluator and controllers could discuss each of these conditions. It was agreed that on-the-spot corrective training would be provided to staff by the Radiological Officer so that each condition could be addressed. Play was resumed upon conclusion of the corrective training, and staff then successfully redemonstrated obtaining background readings as well as the monitoring of EW's thyroid glands.

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

### 3.3.2.4 Chester County, Evacuee Monitoring/Decontamination Station at the Octorara Primary Leaning Center

a. Met: 1.1, 1.2, 2.2, 3.1, 5.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.5 Chester County, Mass Care at the Octorara High School

a. Met: 1.1, 1.2, 2.2, 3.1, 5.1

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

### 3.3.2.6 Chester County, West Nottingham Township Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2. 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

### 3.3.2.7 Chester County, West Nottingham Township Back Up Route Alerting

a. Met: 1.2, 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

### 3.3.2.8 Lancaster County Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 3.3, 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

### 3.3.2.9 Lancaster County, Reception Center at the Lampeter-Strasburg School Complex

a. Met: 1.1, 1.2, 2.2, 3.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE

**ISSUE NO:** 46-22-5.1-P-009

**Capability Target**: 5.1 - 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.

**CONDITION**: The Lancaster County Radiological Emergency Response Plan (RERP) dated January 2022 does not identify a location for a reception center or public monitoring and decontamination for evacuees and vehicles to include service animals and pets in addition to identifying host school locations.

Although a demonstration was conducted and evaluated at Lampeter-Strasberg School Complex on March 30, 2022, to fulfill exercise requirements, the Lancaster County RERP does not specify an accurate location. Inconsistencies exist on the Pennsylvania Emergency Management Website and Constellation Energy 2022 Public Information Brochure (PIB) which identify Willow Street Campus- Lancaster County Career and Technology Center as the location for reception and evacuee monitoring and decontamination activities.

**POSSIBLE CAUSE:** Planners did not identify the proper location of the reception center and public monitoring/decontamination center during the recent plan revision.

**REFERENCE**:
**1.** NUREG-0654/FEMA-REP-1, Rev 2, planning standard J.11.d, J.13, and K.4.
**2.** Lancaster County RERP – January 2022.
**3.** Peach Bottom 2022 Public Information Brochure

**EFFECT:** The lack of identifiable facilities by location such as reception centers and evacuee monitoring and decontamination can contribute to delays in county leadership making timely decisions to activate support facilities. In addition, the evacuating public would go to a facility where no services are available adding to confusion and delays when directing the public to the appropriate location.

**RECOMMENDATION:** The Lancaster County RERP needs to be updated to identify all current locations of support facilities to include services for evacuees and service animals and provisions for supporting pet decontamination.

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

### 3.3.2.10 Lancaster County, Evacuee Monitoring and Decontamination at the Lampeter-Strasburg School Complex

a. Met: 1.1, 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE

**ISSUE NO:** 46-22-5.1-L2-006

**Capability Target**: 5.1 - 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.

**CONDITION**: The staff at the Lampeter-Strasburg Evacuee Monitoring and Decontamination Center failed to complete administrative contamination controls and give Emergency Workers a Radiological Briefing.

**POSSIBLE CAUSE:** Staff did not set up the Lampeter-Strasburg Evacuee Monitoring and Decontamination Center or give a Radiological Briefing in accordance with their plans and procedures.

**REFERENCE**: NUREG-0654/FEMA-REP-1, Rev. 2, (J.11.d, J.13, K.4, and O.1)

**EFFECT:** The lack of contamination control can lead to the contamination of the entire center and cause slowdowns or delays in the decontamination of evacuees.

**RE-DEMONSTRATED AND CLOSED:** The staff at the Lampeter-Strasburg Evacuee Monitoring and Decontamination Center redemonstrated the contamination controls after a pause in the exercise and just in time training. Exercise play resumed after just in time training was conducted, and the Radiological Briefing was conducted at the end of the exercise.

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

**3.3.2.11 Lancaster County, Mass Care at Manheim High School**

a. Met: 1.1, 1.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

**3.3.2.12 Lancaster County, Emergency Worker Monitoring and Decontamination Lampeter-Strasburg School Complex**

No Demonstration

**3.3.2.13 Lancaster County, Drumore Township Emergency Operations Center**

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

**3.3.2.14 Lancaster County, Fulton Township Emergency Operations Center**

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.15 Lancaster County, Fulton Township Emergency Operations Center Back Up Route Alerting

a. Met: 1.2, 2.2, 3.1, 3.2,
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.16 Little Britain Township Emergency Operation Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.17 Martic Township Emergency Operation Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.18 East Drumore/Providence/Solanco Townships and Quarryville Borough, Emergency Operation Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.19 Lancaster County, Penn Manor School District

a. Met: NONE
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: ONE

**ISSUE NO:** 46-22-1.5-P-003

**Capability Target**: 1.5 - The capability to implement precautionary protective actions 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.

**CONDITION**: The Penn Manor School District Radiological Emergency Response Plan for Incidents at the Peach Bottom Atomic Power Station, Revision 7, has not been revised to reflect current interim guidance issued by the Pennsylvania Emergency Management Agency (PEMA). Specifically, the School District plan calls for mobilization of "vehicles for preplanned assignments" at Site Area Emergency and protective action implementation after a General Emergency.

**POSSIBLE CAUSE:** Planners have not updated the School District Plan and trained the District Superintendent or school Principals to update checklists.

**REFERENCE**:
1. NUREG-0654/FEMA-REP-1, Rev. 2, J.11.g
2. Penn Manor School District Radiological Emergency Response Plan for Incidents at the Peach Bottom Atomic Power Station, Revision 7
3. PEMA Annex E, Radiological Emergency Preparedness Response to Nuclear Power Plant Incidents, School Radiological Plans Interim Guidance, dated January 10, 2022

**EFFECT:** School District plans are not in consonance with current school planning guidance and, if not corrected, could lead to a protective action that potentially expose children, staff, faculty, and school bus drivers to the harmful effects of ionizing radiation.

**RECOMMENDATION:** The School District plan should be updated to comply with the Annex E, Interim Guidance for Schools and Colleges, School Radiological Interim Guidance dated on January 10, 2022. The School District will re-demonstrate with their risk school with the updated plan.

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

### 3.3.2.20 Lancaster County, Penn Manor High School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.21 Lancaster County, Solanco School District

a. Met: NONE
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: ONE

**ISSUE NO:** 46-22-1.5-P-005

**Capability Target**: 1.5 - The capability to implement precautionary protective actions 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.

**CONDITION**: The Solanco School District Radiological Emergency Response Plan dated January 2020 has not been revised to reflect current interim guidance issued by the Pennsylvania Emergency Management Agency (PEMA). Specifically, the plan calls for mobilization of buses at a General Emergency and protective action implementation after a General Emergency.

**POSSIBLE CAUSE:** Planners have not updated the School District Plan and trained the District Superintendent or school Principals to update checklists.

**REFERENCE**:
1. NUREG-0654/FEMA-REP-1, Rev. 2, J.11.g
2. Solanco School District Radiological Emergency Response Plan
3. PEMA Annex E, Radiological Emergency Preparedness Response to Nuclear Power Plant Incidents, School Radiological Plans Interim Guidance, dated January 10, 2022

**EFFECT:** School District plans are not in consonance with current school planning guidance and, if not corrected, could lead to a protective action that potentially expose children, staff, faculty, and school bus drivers to the harmful effects of ionizing radiation.

**RECOMMENDATION:** The School District plan should be updated to comply with the Annex E, Interim Guidance for Schools and Colleges, School Radiological Interim Guidance dated on January 10, 2022

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

### 3.3.2.22 Lancaster County, Swift Middle School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.23 Lancaster County, Quarryville Elementary School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE

f. Prior Issues - Unresolved: NONE

### 3.3.2.24 York County, Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 3.3, 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

### 3.3.2.25 York County, Reception Center at the Southern School Complex, Demonstrated at York Office of Emergency Management

a. Met: 1.1, 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.26 York County, Emergency Worker Monitoring/Decontamination Station at Brogue EMS Station

a. Met: 1.1, 1.2, 2.2, 3.1, 5.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NNONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.27 York County, Evacuee Monitoring/Decontamination Station at Southern School Complex, Demonstrated at York Office of Emergency Management

a. Met: 1.1, 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.28 York County Mass Care at the York County 4-H Club

a. Met: 1.1, 1.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.29 York County, Delta-Peach Bottom Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE

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

### 3.3.2.30 York County, Delta-Peach Bottom Emergency Operations Center Back Up Route Alerting

a. Met: 1.2, 2.2, 3.1, 3.2,
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.31 York County, Fawn Grove Township/Fawn Borough Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.32 York County, Lower Chanceford Township Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.2.33 York County, South Eastern School District

a. Met: NONE
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: ONE

**ISSUE NO:** 46-22-1.5-P-001

**Capability Target**: 1.5 - The capability to implement precautionary protective actions 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.

**CONDITION**: The South Eastern District Radiological Emergency Response Plan dated March 2022 has not been revised to reflect current interim guidance issued by the Pennsylvania Emergency Management Agency (PEMA). Specifically, the plan calls for mobilization of buses at a

General Emergency and protective action implementation after a General Emergency.

**POSSIBLE CAUSE:** Planners have not updated the School District Plan and trained the District Superintendent or school Principals to update checklists.

**REFERENCE**:
1. NUREG-0654/FEMA-REP-1, Rev. 2, J.11.g
2. South Eastern School District Radiological Emergency Response Plan
3. PEMA Annex E, Radiological Emergency Preparedness Response to Nuclear Power Plant Incidents, School Radiological Plans Interim Guidance, dated January 10, 2022

**EFFECT:** School District plans are not in consonance with current school planning guidance and, if not corrected, could lead to a protective action that potentially expose children, staff, faculty, and school bus drivers to the harmful effects of ionizing radiation.

**RECOMMENDATION:** The School District plan should be updated to comply with the Annex E, Interim Guidance for Schools and Colleges, School Radiological Interim Guidance dated on January 10, 2022

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

#### 3.3.2.34 York County, South Eastern Middle School
a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.2.35 York County, South Eastern Elementary School
a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3 Maryland Risk Jurisdictions
In summary, the status of DHS/FEMA criteria for the Private jurisdictions are as follows:

#### 3.3.3.1 Cecil County Emergency Operations Center
a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 3.3, 5.4
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE

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

### 3.3.3.2 Cecil County, Rising Sun Fire Station #8, Back Up Route Alerting

a. Met: 1.2, 2.2, 3.1, 3.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.3 Cecil County, Reception/Evacuee Monitoring and Decontamination at Rising Sun High School

a. Met: 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.4 Cecil County, Emergency Worker Monitoring and Decontamination at Rising Sun Fire Station #8

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

### 3.3.3.5 Cecil County, Mass Care at the Rising Sun High School

a. Met: 1.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.6 Cecil County, Conowingo Elementary School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.7 Harford County Emergency Operations Center

a. Met: 1.1, 1.2, 1.5, 2.2, 3.1, 3.2, 3.3, 5.4

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

### 3.3.3.8 Harford County Back Up Route Alerting

a. Met: 1.2, 2.2, 3.1, 3.2
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.9 Harford County, Reception/Evacuee Monitoring and Decontamination at Fallston High School

a. Met: 1.2, 2.2, 3.1, 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NNONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.3.10 Harford County, Emergency Worker Monitoring and Decontamination at Fallston High School

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

### 3.3.3.11 Harford County, Mass Care at the Patterson Mill High School

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

### 3.3.3.12 Harford County, North Harford Elementary School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.3.13 Harford County, North Harford Middle School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.3.14 Harford County, North Harford High School

a. Met: 1.5
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.4 Peach Bottom Atomic Power Station Medical Services Assessments

#### 3.3.4.1 Cecil County, ChristianaCare Union Hospital

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

#### 3.3.4.2 Cecil County, Rising Sun Community Ambulance

a. Met: 1.2, 2.2, 5.3
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: ONE

**ISSUE NO:** 46-22-5.3-P-008

**Capability Target**: 5.3 - Transport contaminated, injured individuals to medical facilities with the capability to monitor and decontaminate.

**CONDITION**: The Cecil County Department of Emergency Services lacks a specific procedure for EMS crews responding to a radiologically contaminated patient.

**POSSIBLE CAUSE:** Planners have not developed a procedure for EMS crews.

**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.4, and O.1)

**EFFECT:** The lack of a clear procedure for transport of contaminated, injured individuals to medical facilities could cause confusion in the response.

**RECOMMENDATION:** Prior to publishing of this after-action report, on May 23, 2022, the Region 3 Office received an updated procedures and plan updates from the Cecil County Department of Emergency Services that meet the intent of the relevant planning standards in NUREG 0654/FEMA REP-1, Rev 2. This Plan Issue is resolved and closed.

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

#### 3.3.4.3 Harford County, Upper Chesapeake Medical Center

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

#### 3.3.4.4 Harford County, Whiteford Volunteer Fire Company Ambulance

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

### 3.3.5 Peach Bottom Atomic Power Station Mass Care Assessments

#### 3.3.5.1 Lancaster County, Mass Care Center at Hempfield High School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.5.2 Lancaster County, Mass Care Center at Penn Manor Middle School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

#### 3.3.5.3 Lancaster County, Mass Care Center at Garden Spot Middle School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE

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

### 3.3.5.4 York County, Mass Care Center at Dallastown High School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.5.5 York County, Mass Care Center at Dallastown Middle School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.5.6 York County, Mass Care Center at Spring Grove High School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.5.7 York County, Mass Care Center at Spring Grove Intermediate School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

### 3.3.5.8 York County, Mass Care Center at Spring Grove Middle High School

a. Met: 5.1
b. Level 1 Findings: NONE
c. Level 2 Findings: NONE
d. Plan Issues: NONE
e. Prior Issues – Resolved: NONE
f. Prior Issues - Unresolved: NONE

# SECTION 4: DEMONSTRATED STRENGTHS

## 4.1 Risk Jurisdictions

### 4.1.1 Commonwealth of Pennsylvania Response Coordination Center (CRCC)

The command room added the capability of projecting various GIS mapping layers on a screen through use of a GIS Analyst that assisted with gathering information on critical facilities railroad lines, road closures, parks and recreational areas and population numbers that was used by PEMA leadership for making protective actions.

### 4.1.2 Commonwealth of Pennsylvania Bureau of Radiological Protection (BRP) Accident Assessment

Radiological Assessment Manager (RAM) knew several different positions and was able to take over duties when Radiological Assessment Director (RAD) was in a press briefing. RAM provided excellent technical description of plant conditions to decision makers in absence of RAD.

### 4.1.3 Commonwealth of Pennsylvania Bureau of Radiological Protection (BRP) Accident Assessment

Dose Assessment (DA) staff questioned pathway received from Utility allowing more discussion around exactly which monitor was showing high levels. This enhanced DA's ability to differentiate between dose effects of the first release pathway and dose effects of the second release pathway.

### 4.1.4 Commonwealth of Pennsylvania Bureau of Radiological Protection (BRP) Accident Assessment

Collocation of the Bureau of Radiation Protection dose assessment personnel with personnel who monitored and analyzed live plant instrument data using the Peach Bottom plant parameter display system was a significant strength as it enabled a number of "What If" analyses to better understand changing plant conditions.

### 4.1.5 The State of Maryland Joint Operations Center (MJOC)

The MJOC staff was able to successfully juggle their real-life responsibilities while simultaneously completing their exercise tasks. (They received numerous calls and notifications regarding vehicle accidents and a hazmat event.)

### 4.1.6 The State of Maryland Department of Environmental (MDE)

Staff within MDE Accident Assessment Center demonstrated their use of technology by using CBRN responder effectively. The dose assessors also demonstrated this by using Unified RASCAL Interface (URI).

### 4.1.7 Chester County

The county leveraged technology by use of the Smart 911 program where citizens can input info for functional needs/access-dependent information.

### 4.1.8 York County

The York County Incident Commander and the Pennsylvania State Police Representative

demonstrated excellent coordination with Harford County during the PBAPS Exercise to resolve a real-world impediment (road closure) along the evacuation route of Route 851 in Peach Bottom Township. This coordination allowed for traffic to be rerouted into Maryland with the assistance of Harford County providing two officers for traffic and access control in Maryland.

### 4.1.9 Delta Peach Bottom (York County)

Fire Chief and Crew were attentive and responsive with the tasks of Back-up Route Alerting and the wearing and handling of Emergency Worker Exposure Equipment.

### 4.1.10 Delta Peach Bottom (York County)

The ARES/RACES folks were dedicated to their tasks and maintained their responsibility to assisting with Township communications.

# SECTION 5: CONCLUSION

The Commonwealth of Pennsylvania, The State of Maryland 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 Peach Bottom Atomic Power Station Plume Exercise evaluated on April 26, 2022, and the Out of Sequence Demonstrations conducted March 29-30, April 27, and May 4-5, 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 656 Capability Targets in five 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 resulted in a determination of no Level 1 Findings, two Level 2 Findings (re-demonstrated and closed), and six new Plan Issues. Two Plan Issues were resolved prior to the publish date of this report after revised plans and procedures were received by FEMA.

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.

# PBAPS APPENDIX A – EXERCISE TIMELINES

| Emergency Classification Level or Event | Time Utility Declared | *Time That Notification Was Received at the Listed Location* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PA CRCC | PA CRCC JIC | Accident Assessment (BRP) | Utility EOF | Media Operations Center | Chester County | Lancaster County | York County |
| Unusual Event | 1613 | 1627 | 1627 | 1627 | 1637 | 1613 | 1620 | 1631 | 1624 |
| Alert | 1650 | 1700 | 1700 | 1700 | 1654 | 1650 | 1656 | 1701 | 1656 |
| Site Area Emergency | 1802 | 1817 | 1817 | 1817 | 1804 | 1805 | 1808 | 1828 | 1808 |
| General Emergency | 1900 | 1903 | 1903 | 1924 | 1902 | 1911 | 1912 | 1928 | 1911 |
| Start of Simulated Radiation Release | 1650 | 1700 | 1700 | 1700 | 1713 | 1805 | 1656 | 1701 | 1656 |
| Terminated of Simulated Radiation Release | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing |
| Facility Declared Operational | | 1715 | 1715 | 1715 | 1700 | 1735 | 1628 | 1708 | 1713 |
| Governor's Declaration of State of Emergency | | 1839 | 1839 | 1839 | 1855 | 1852 | 1855 | 1852 | 1852 |
| Exercise Terminated | | 2114 | 2114 | 2114 | 2004 | 2040 | 2038 | 2135 | 2100 |
| | | | | | | | | | |
| 1st Siren Sounding | | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 |
| 1st EAS Message Broadcast | | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 |
| 1st Precautionary Action Decision: | | 1828 | 1828 | 1821 | 1843 | 1900 | 1848 | 1849 | 1844 |
| Vessel restrictions all waterways; restrict all rail service 0-10-mi EPZ; air restricted 3mi/3,000 ft; place livestock on stored feed and covered water | | 1826 | 1826 | 1821 | 1843 | 1900 | 1833 | 1849 | 1844 |
| | | | | | | | | | |
| 2nd Siren Sounding | | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 |
| 2nd EAS Message Broadcast | | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 |
| 2nd Protective Action Decision | | 1930 | 1930 | 1930 | 1930 | 1930 | 1945 | 1945 | 1945 |
| Governor recommends evacuation: 10-mile EPZ, 360 degrees; and Shelter-in-place special populations (prisons, jails, institutionalized persons 0-2 miles); KI for Emergency Workers, General Public, and Institutionalized Persons | | 1945 | 1945 | 1945 | 1945 | 1945 | 1945 | 1945 | 1945 |

| Emergency Classification Level or Event | Time Utility Declared | | *Time That Notification Was Received at the Listed Location* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Chester W. Nottingham EOC | Lancaster Drumore EOC | Lancaster E. Drumore Providence Quarryville Solanco EOC | Lancaster Little Britain EOC | Lancaster Fulton EOC | Lancaster Martic EOC | York Delta/Peach EOC | York Fawn Grove EOC | York Lower Chanceford EOC |
| Unusual Event | 1613 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Alert | 1650 | 1727 | 1730 | 1712 | 1712 | 1713 | 1713 | 1712 | 1713 | 1710 |
| Site Area Emergency | 1802 | 1822 | 1828 | 1829 | 1817 | 1830 | 1830 | 1820 | 1832 | 1817 |
| General Emergency | 1900 | 1941 | 1929 | 1927 | 1929 | 1930 | 1929 | 1922 | 1923 | 1927 |
| Start of Simulated Radiation Release | 1650 | 1822 | 1824 | 1837 | 1837 | 1837 | 1802 | 1802 | 1713 | 1802 |
| Terminated of Simulated Radiation Release | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing |
| Facility Declared Operational | | 1802 | 1823 | 1803 | 1815 | 1750 | 1745 | 1720 | 1735 | 1746 |
| Governor's Declaration of State of Emergency | | 1900 | 1935 | 1856 | 1903 | 1904 | 1856 | 1905 | 1902 | 1852 |
| Exercise Terminated | | 2040 | 2102 | 2104 | 2110 | 2100 | 2107 | 1956 | 1958 | 2027 |
| | | | | | | | | | | |
| 1st Siren Sounding | | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 | 1855 |
| 1st EAS Message Broadcast | | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 | 1858 |
| 1st Precautionary Action Decision: | | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Vessel restrictions all waterways; restrict all rail service 0-10-mi EPZ; air restricted 3mi/3,000 ft; place livestock on stored feed and covered water | | 1854 | 1852 | 1853 | 1914 | 1912 | 1846 | 1843 | 1845 | 1844 |
| | | | | | | | | | | |
| 2nd Siren Sounding | | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 | 1955 |
| 2nd EAS Message Broadcast | | 2000 | 2000 | 2000 | 1958 | 1958 | 1955 | 1958 | 1958 | 1958 |
| 2nd Protective Action Decision | | 1945 | 1935 | 1927 | 1931 | 1940 | 1931 | 2005 | 1956 | 2002 |
| Governor recommends evacuation: 10-mile EPZ, 360 degrees; and Shelter-in-place special populations (prisons, jails, institutionalized persons 0-2 miles); KI for Emergency Workers, General Public, and Institutionalized Persons | | 1945 | 1935 | 1927 | 1931 | 1940 | 1931 | 2005 | 1956 | 2002 |

| Emergency Classification Level or Event | Time Utility Declared | *Time That Notification Was Received at the Listed Location* | | | | |
|---|---|---|---|---|---|---|
| | | State of Maryland EOC | Accident Assessment MD (MDE) | Maryland MJOC | Cecil County EOC | Harford County |
| Unusual Event | 1613 | 1630 | 1622 | 1621 | 1621 | 1638 |
| Alert | 1650 | 1656 | 1656 | 1656 | 1657 | 1700 |
| Site Area Emergency | 1802 | 1823 | 1820 | 1810 | 1817 | 1823 |
| General Emergency | 1900 | 1921 | 1910 | 1914 | 1916 | 1920 |
| Start of Simulated Radiation Release | 1650 | 1656 | 1656 | 1656 | 1656 | 1656 |
| Terminated of Simulated Radiation Release | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing | Ongoing |
| Facility Declared Operational | | 1737 | 1740 | 1740 | 1711 | 1735 |
| Governor's Declaration of State of Emergency | | 1902 | 1907 | 1902 | 1902 | 1902 |
| Exercise Terminated | | 2101 | 2045 | 2101 | 2058 | 2040 |
| | | | | | | |
| 1st Siren Sounding | | 1855 | 1855 | 1855 | 1855 | 1855 |
| 1st EAS Message Broadcast | | 1858 | 1858 | 1858 | 1858 | 1858 |
| 1st Precautionary Action Decision: | | 1845 | 1845 | 1842 | 1845 | 1845 |
| Vessel restrictions all waterways; restrict all rail service 0-10-mi EPZ; air restricted 3mi/3,000 ft; place livestock on stored feed and covered water | | 1845 | 1848 | 1842 | 1845 | 1845 |
| | | | | | | |
| 2nd Siren Sounding | | 1955 | 1955 | 1955 | 1955 | 1955 |
| 2nd EAS Message Broadcast | | 1958 | 1958 | 1958 | 1958 | 1958 |
| 2nd Protective Action Decision | | 1945 | 2001 | 1955 | 1945 | 1945 |
| Governor recommends evacuation: 10-mile EPZ, 360 degrees; and Shelter-in-place special populations (prisons, jails, institutionalized persons 0-2 miles); KI for Emergency Workers, General Public, and Institutionalized Persons | | 1945 | 2001 | 1955 | 1945 | 1945 |

# APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leaders for the Peach Bottom Atomic Power Station 2022 Radiological Emergency Preparedness Plume Pathway Exercise evaluated on April 26, 2022. The following constitutes the managing staff for the Exercise Evaluation:

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

**Peach Bottom Atomic Power Station**

| LOCATION | TEAM LEADER | AGENCY |
|---|---|---|
| Commonwealth Response Coordination Center (CRCC); Commonwealth Joint Information Center at the CRCC; Exelon Media Operations Center;<br>Exelon Emergency Operations Facility;<br>Pennsylvania State Police | Joe Suders | FEMA Region 3 |
| Pennsylvania Accident Assessment Center (BRP) at the CRCC; Radiological Rapid Response Vehicle;<br>State Field Team A; State Field Team B; | Janise Stoliarova | FEMA HQ |
| Chester County Department of Emergency Services | Rahuel Preciado | FEMA Region 3 |
| Lancaster County Emergency Operation Center | Tina Thomas | FEMA Region 3 |
| York County Emergency Operation Center | Lee Torres | FEMA Region 3 |
| Maryland Department of Emergency Management (MDEM)<br>State Emergency Operations Center/JIC (COOP | Dan Rose | FEMA Region 3 |
| Maryland Department of the Environment<br>Accident Assessment Center (MDE/AAC) | Narvaez Stinson | FEMA HQ |
| Cecil County Emergency Operation Center | Zach Corle | FEMA Region 3 |

| | | |
|---|---|---|
| Harford County Emergency Operation Center | Kathy Duran | FEMA Region 3 |

| LOCATION | EVALUATOR | AGENCY |
|---|---|---|
| Cecil County Back-up Route Alerting | Bruce Swiren | ICF |
| Cecil County Emergency Operations Center | Zach Corle | FEMA Region 3 |
| Cecil County Emergency Operations Center | Kerry Holmes | FEMA Region 3 |
| Cecil County Emergency Operations Center | Michele Sturman | FEMA Region 2 |
| Cecil County Emergency Worker Emergency Worker Monitoring and Decontamination St | Cheryl Weaver | ICF |
| Cecil County Mass Care Center, Rising Sun High School | Tom Gahan | ICF |
| Cecil County Public School District | Richard Watts | ICF |
| Cecil County Public School District, Conowingo Elementary | Richard Watts | ICF |
| Cecil County Reception Center, Rising Sun High School | Carol Shepard | ICF |
| Cecil County, Rising Sun Emergency Medical Services | Thomas Scardino | FMA Region 3 |
| Cecil County, Union Hospital | Joe Suders | FEMA Region 3 |
| Chester County Emergency Operations Center | Rahuel Preciado | FEMA Region 3 |
| Chester County Emergency Operations Center | Pj Nied | ICF |
| Chester County Emergency Operations Center | Larry Broockerd | FEMA HQ |
| Chester County, Emergency Worker Decon, Penn Grove Middle School | Dan Rose | FEMA Region 3 |
| Chester County, Evacuee Monitoring and Decontamination, Octorara Primary Learning Center | Kathy Duran | FEMA Region 3 |
| Chester County, Reception Center, Octorara Primary Learning Center | Zach Corle | FEMA Region 3 |
| Chester County, West Nottingham Township Back-up Route Alerting | Cheryl Weaver | ICF |
| Chester County, West Nottingham Township Emergency Operations Center | Carol Shepard | ICF |

| | | |
|---|---|---|
| Chester County, West Nottingham Township Emergency Operations Center | Cody McKown | FEMA Region 7 |
| Constellation Media Operations Center | Cristina Schulingkamp | EPA Region 3 |
| Constellation Emergency Operations Center | Brad McRee | ICF |
| Harford County Back-up Route Alerting | Stephen Watts | ICF |
| Harford County Mass Care Center, Patterson Mill High School | Stephen Watts | ICF |
| Harford County Emergency Operations Center | Kathy Duran | FEMA Region 3 |
| Harford County Emergency Operations Center | Anthony DeFelice | FEMA HQ |
| Harford County Emergency Operations Center | Helen LaForge | FEMA Region 1 |
| Harford County Emergency Operations Center | Gary Goldberg | ICF |
| Harford County Emergency Worker Monitoring and Decontamination Station, Fallston | Jim Greer | ICF |
| Harford County Public School District | Gary Goldberg | ICF |
| Harford County Public School District, North Harford Elementary School | Barton Freeman | FEMA Region 3 |
| Harford County Public School District, North Harford Elementary School | Roger Winkelmann | ICF |
| Harford County Public School District, North Harford High School | Gary Goldberg | ICF |
| Harford County Public School District, North Harford Middle School | Kevin Reed | ICF |
| Harford County Reception Center/Evacuee Mon/Decon, Fallston High School | Clay Spangenberg | ICF |
| Harford County, Whiteford Volunteer Fire Company Emergency Medical Services | Taylor Griffiths | FEMA Region 3 |
| Harford County, Upper Chesapeake Medical Center | Joseph Suders | FEMA Region 3 |
| Lancaster County Emergency Operations Center | Tina Lai-Thomas | FEMA Region 3 |
| Lancaster County Emergency Operations Center | Brain Hasemann | FEMA Region 2 |

| | | |
|---|---|---|
| Lancaster County Emergency Operations Center | Chris Cammarata | FEMA Region 2 |
| Lancaster County Mass Care Center, Lampeter/Strasburg School Complex | Rosemary Sasel | FEMA Region 3 |
| Lancaster County Monitoring and Decontamination Center, Lampeter/Strasburg School | Rahuel Preciado | FEMA Region 3 |
| Lancaster County Reception Center, Lampeter/Strasburg School | Tina Lai-Thomas | FEMA Region 3 |
| Lancaster County, E. Drumore/Providence/ Quarryville/Solanco Combined Emergency Operations Center | Lynn Steffensen | ICF |
| Lancaster County, E. Drumore/Providence/ Quarryville/Solanco Combined Emergency Operations Center | William Webb | ICF |
| Lancaster County, Drumore Township Emergency Operations Center | Jim Greer | ICF |
| Lancaster County, Drumore Township Emergency Operations Center | Doc Burriss | ICF |
| Lancaster County, Fulton Township Emergency Operations Center | Bonnie Sheffield | ICF |
| Lancaster County, Fulton Township Emergency Operations Center | Ron Bonner | ICF |
| Lancaster County, Fulton Township Backup Route Alerting | Clay Spangenberg | ICF |
| Lancaster County, Little Britain Township Emergency Operations Center | Roger Winkelmann | ICF |
| Lancaster County, Little Britain Township Emergency Operations Center | Rosemary Samsel | ICF |
| Lancaster County, Martic Township Backup Route Alerting | Richard Smith | ICF |
| Lancaster County, Martic Township Emergency Operations Center | Marynette Herndon | ICF |
| Lancaster County, Penn Manor School District | Dan Rose | FEMA Region 3 |
| Lancaster County, Penn Manor High School | Lee Torres | FEMA Region 3 |
| Lancaster County, Solanco School District | Tina Lai-Thomas | FEMA Region 3 |
| Lancaster County, Solanco School District, Swift Middle School | Zach Corle | FEMA Region 3 |

| | | |
|---|---|---|
| Lancaster County, Solanco School District, Quarryville Elementary School | Kathy Duran | FEMA Region 3 |
| Lancaster County, Mass Care Center, Hempfield High School | Taylor Griffiths | FEMA Region 3 |
| Lancaster County, Mass Care Center, Penn Manor Middle School | Taylor Griffiths | FEMA Region 3 |
| Lancaster County, Mass Care Center, Garden Spot Middle School | Taylor Griffiths | FEMA Region 3 |
| Maryland Accident Assessment Center, Maryland Department of the Environment | Narvaez Stinson | FEMA HQ |
| Maryland Accident Assessment Center, Maryland Department of the Environment | Marcy Campbell | ICF |
| Maryland Joint Operations Center | Peter Judge | ICF |
| Maryland Department of Emergency Management, Emergency Operations Center | Dan Rose | FEMA Region 3 |
| Maryland Department of Emergency Management, Emergency Operations Center | Miriam Weston | FEMA Region 2 |
| Maryland Department of Emergency Management, Emergency Operations Center | Alex Hazard | FEMA Region 3 |
| Maryland Department of Emergency Management, Emergency Operations Center | Roy Smith | FEMA Region 3 |
| Maryland State Field Monitoring Team A | Kevin Robinson | FEMA Region 3 |
| Maryland State Field Monitoring Team B | Deb Blunt | FEMA Region 3 |
| Pennsylvania Accident Assessment Center, St Emergency Ops Center-Bureau of Radiation Protection | Janise Stoliarova | FEMA HQ |
| Pennsylvania Accident Assessment Center, State Emergency Ops Center-Bureau of Radiation Protection | Reggie Rodgers | ICF |
| Pennsylvania Commonwealth Response Coordination Center | Joseph Suders | FEMA Region 3 |
| Pennsylvania Commonwealth Response Coordination Center | Andy Chancellor | FEMA Region 7 |
| Pennsylvania Commonwealth Response Coordination Center | Brad DeKorte | FEMA Region 6 |
| Pennsylvania Commonwealth Joint Information Center | Lisa Rink | FEMA HQ |

| | | |
|---|---|---|
| Pennsylvania Joint Information Center/Rumor Control | Paul Nied | ICF |
| Pennsylvania State Traffic and Access Control Points, State Pol Barrack Lancaster | Michael Shuler | FEMA Region 3 |
| Pennsylvania State Traffic and Access Control Points, State Pol Barrack Lancaster | Brad DeKorte | FEMA Region 6 |
| York County Reception Center Red Lion High School | Michael Shuler | FEMA Region 3 |
| York County, Emergency Operations Center | Lee Torres | FEMA Region 3 |
| York County, Emergency Operations Center | Matthew Welshans | FEMA HQ |
| York County, Emergency Operations Center | Denny Wilford | ICF |
| York County, Delta-Peach Emergency Operations Center Back-up Route Alerting | Meg Swearingen | ICF |
| York County, Delta-Peach Emergency Operations Center Back-up Route Alerting | Herb Massie | ICF |
| York County, Fawn Grove Township Emergency Operations Center | Kevin Reed | ICF |
| York County ,Fawn Grove Township Emergency Operations Center | Tom Gahan | ICF |
| York County, Lower Chanceford Township Emergency Operations Center | Teri Engelhart | ICF |
| York County, Lower Chanceford Township Emergency Operations Center | Don Carlton | ICF |
| York County, Mass Care Center, York County 4-H Club | Meg Swearingen | ICF |
| York County, Lower Chanceford Township Emergency Operations Center | Lisa Rink | FEMA HQ |
| York County, Red Lion Area School District | Joseph Suders | FEMA Region 3 |
| York County, Red Lion Area School District | Joseph Suders | FEMA Region 3 |
| York County, Red Lion Area School District, Windsor Manor Elementary School | Joseph Suders | FEMA Region 3 |
| York County, Mass Care Center, Dallastown High School | Joseph Suders | FEMA Region 3 |

| | | |
|---|---|---|
| York County, Mass Care Center, Dallastown Middle School | Joseph Suders | FEMA Region 3 |
| York County, Mass Care Center, Spring Grove High School | Joseph Suders | FEMA Region 3 |
| York County, Mass Care Center, Spring Grove Intermediate School | Joseph Suders | FEMA Region 3 |
| York County, Mass Care Center, Spring Grove Middle School | Joseph Suders | FEMA Region 3 |
| York County, South Eastern School District | Joseph Suders | FEMA Region 3 |
| York County, South Eastern School District, Fawn Elementary | Rahuel Preciado | FEMA Region 3 |
| York County, South Eastern School District, South East Middle School - East | Taylor Griffiths | FEMA Region 3 |
| York County, Evacuee Monitoring, Southern School Complex | Joe Suders | FEMA Region 3 |
| York County, Reception, Southern School Complex | Joe Suders | FEMA Region 3 |
| York County, Emergency Work Monitor-Decon, Brogue Station | Taylor Griffiths | FEMA Region 3 |

# 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 |
| BRP | Bureau of Radiological Protection |
| BuRA | Back-up Route Alerting |
| CERT | Community Emergency Response Team |
| CFR | Code of Federal Regulations |
| CERC | Corporate Emergency Response Center |
| CNS | Commonwealth Notification System |
| CPM | Counts per Minute |
| CRCC | Commonwealth Response Coordination Center |
| DAD | Digital Alarming Dosimeter |
| DHS | Department of Homeland Security |
| DOT | Department of Transportation |
| 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 |
| EOP | Extent of Play |
| EPT | Exercise Planning Team |
| EPZ | Emergency Planning Zone |
| ESF | Emergency Support Function |
| EW | Emergency Workers |
| EWMDS | Emergency Worker Mon/Decon Station |
| FD | Fire Department |
| FEMA | Federal Emergency Management Agency |
| FMT | Field Monitoring Team |
| FRMAC | Federal Radiological Monitoring Assessment Center |
| FPE | Full Participation Exercise |
| FST | Field Sampling Team |
| FTC | Field Team Coordinator |
| GE | General Emergency |

| | |
|---|---|
| GIS | Geographic Information Systems |
| HazMat | Hazardous Materials |
| IPAWS | Integrated Public Alert & Warning System |
| IPX | Ingestion Pathway Zone |
| JIC | Joint Information Center |
| KI | Potassium Iodide |
| LOA | Letter of Agreement |
| MDEM | Maryland Department of Emergency Management |
| MDE | Maryland Department of Environment |
| MCC | Mass Care Center |
| MOC | Media Operations Center |
| MOU | Memorandum of Understanding |
| MSEL | Master Scenario Events List |
| NPP | Nuclear Power Plant |
| NRC | Nuclear Regulatory Commission |
| OOS | Out of Sequence |
| ORH | Office of Radiological Health |
| ORO | Offsite Response Organization |
| OSD | Optically Stimulated Dosimeter |
| PAD | Protective Action Decision |
| PAG | Protective Action Guide |
| PAR | Protective Action Recommendation |
| PARA | Primary Area Route Alerting |
| PBAPS | Peach Bottom Atomic Power Station |
| PDAFN | Persons with Disabilities/Access Functional Needs |
| PEMA | Pennsylvania Emergency Management Agency |
| PIO | Public Information Officer |
| PPE | Personal Protective Equipment |
| PRD | Permanent Record Dosimeter |
| RAC | Regional Assistance Committee |
| RACES | Radio Amateur Civil Emergency Services |
| RC | Reception Center |
| REA | Radiation Emergency Area |
| REPP | Radiological Emergency Preparedness Program |
| RERP | Radiological Emergency Response Plan |
| RO | Radiological Officer |
| SAC | Staging Area Coordinator |
| SAE | Site Area Emergency |
| SAV | Staff Assistance Visit |
| SEOC | State Emergency Operations Center |

| | |
|---|---|
| SEVAN | State Emergency Voice Activation Network |
| TCP | Traffic Control Point |
| TRNSDEP | Transportation Dependent |
| VHF | Very High Frequency |
| WEA | Wireless Emergency Alerts |

# APPENDIX D: EXTENT OF PLAY AGREEMENT

The 2022 Peach Bottom Atomic Power Station Plume Exercise Extent-of-Play (EOP) Agreement is a document created by the Commonwealth of Pennsylvania Emergency Management Agency and the Maryland Department of Emergency Management that sets the parameters for exercise demonstration. The EOP agreement was signed by the FEMA Region 3, Commonwealth of Pennsylvania Emergency Management, and the Maryland Department of Emergency Management Agency planning team members.

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NATIONAL EXERCISE PROGRAM

# Exercise Plan/Extent of Play

## PENNSYLVANIA FEMA EVALUATED REP EXERCISE

EXERCISE DATE: 26 APRIL 2022

PEACH BOTTOM ATOMIC POWER STATION
FEDERAL EXERCISE

**U.S. DEPARTMENT OF HOMELAND SECURITY**

FEMA

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# PREFACE

The 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise (FSE) is sponsored by the Federal Emergency Management Agency (FEMA) and the Pennsylvania Emergency Management Agency (PEMA). 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 2022 Peach Bottom Atomic Power Station exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, Controllers, and Evaluators, but Players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, 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 2022 Peach Bottom Atomic Power Station 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 Exercise Planning Director is prohibited.

3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, stored in an area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.

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# CHAPTER 1: GENERAL INFORMATION

## Introduction

The 2022 Peach Bottom Atomic Power Station exercise 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 and PEMA with the input, advice, and assistance of the EPT. The 2022 Peach Bottom Atomic Power Station exercise is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities.

## Confidentiality

The 2022 Peach Bottom Atomic Power Station exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. This ExPlan may be viewed by all exercise participants, 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 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 and PEMA is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

## Capability Targets

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

Capability Targets for this exercise have been identified from the listing below and selected by the EPT for evaluation from the Capability Targets identified in the 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 resulting from the FEMA-evaluated plume phase exercise at Peach Bottom Atomic Power Station 2020 (rescheduled for 2021):

# CHAPTER 2: EXERCISE LOGISTICS

## Exercise Summary

### General

The 2022 Peach Bottom Atomic Power Station exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a Nuclear Power Plant. The 2022 Peach Bottom Atomic Power Station exercise will be conducted over several days. Exercise play is scheduled for eight (8) hours or until the Lead Controller in consultation with FEMA and the Utility determines that the exercise objectives have been met at each venue. Out-of-Sequence Evaluations will be conducted as follows:

- The plume phase exercise for the utility, state, county, and local participants will be held on the evening of April 26, 2022
- The MS-1 hospital demonstration was federally evaluated at WellSpan York Hospital in York County on June 10, 2021 and at WellSpan Ephrata Hospital in Lancaster County on November 9, 2021
- The demonstration of reception centers, mass care centers (as indicated), monitoring and decontamination centers and emergency worker stations will be conducted between on March 30, 2022 from 7:00 p.m. – 9:30 p.m.
- The Bureau of Radiation Protection will conduct a demonstration of equipment inventory, equipment checks and air sampling on April 26, 2022 beginning at 1:00 p.m. at the South Central Department of Environmental Protection Building
- 12 mass care centers (5 in Lancaster and 7 in York County) will receive "walkdown" baseline evaluations tentatively scheduled on May 17, 2022. These 12 mass care centers <u>will not be evaluated</u> during the evening of March 30, 2022.
- The exercise window for school demonstrations will be on March 29, 2022 from 9:00 a.m. to 11:00 a.m.
- The interview of Pennsylvania State Police traffic control/access control points will be on April 27, 2022 from 10:00 a.m. to 12:00 p.m. at the Lancaster Barracks

### 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 2022 Peach Bottom Atomic Power Station exercise:

- The exercise will be graded against the REP Objectives and Capability Targets. Elements outside the scope of the REP criteria will not be graded.
- This exercise will be conducted in a no-fault learning environment wherein systems and processes, not individuals, will be evaluated (No-fault learning is being negotiated by FEMA – PEMA administration).
- 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

A Controller Handbook will not be used for this exercise.

### Extent-of-Play Agreement (EOPA)

The extent-of-play agreements will document and define the agreed-upon approach to demonstrating and evaluating the REP Program objectives/capability targets. These documents are intended to define the commitment of participants in advance and should outline those commitments, as well as the facilities to be evaluated or utilized and the anticipated level of participation. The extent-of-play agreement should also capture activities that may deviate in demonstration from plans and procedures as currently written, such as pre-staging personnel at or near a facility prior to activation during an exercise. These extent-of-play agreements will provide reliable information for developing the assessment activity and ensure appropriate evaluation.

### Master Scenario Events List

The MSEL outlines benchmarks, as well as injects that drive exercise play. It also details realistic input to the exercise players as well as information expected to emanate from simulated organizations (i.e., those nonparticipating organizations, agencies, and individuals who would usually respond to the situation). An inject will include several items of information, such as inject time, intended recipient, responsible controller, inject type, a short description of the event, and the expected player action. 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 on April 26, 2022 at approximately 4:00 p.m. 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 FEMA and the Utility.

### Exercise Rules

The following are the general rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by control staff.
- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, *"This is 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 2022 Peach Bottom Atomic Power Station exercise come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

- 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 PEMA and the Utility 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. Designated PEMA or Utility representatives and/or the Observer Controller will be present to explain the exercise program and answer questions for the observers during the exercise.

### Directions

Directions are provided by the Utility. A copy will be shared with FEMA when received.

### 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 (8) hours or until the Lead Controller in coordination with FEMA and the Utility determines that the exercise objectives have been met. The Lead

Controller will announce the exercise suspension or termination through the Commonwealth Response Coordination Center.

**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.

Joint Information Centers will be established at both the Utility Emergency Operations Facility (EOF) and the Commonwealth Response Coordination Center (CRCC). Actors will play the role of reporters "public briefings" will be given as they would for a real incident. These "public briefings" will be simulated and not broadcast for the public. The briefings will be available for viewing at the County EOCs.
Any participation by the actual media will be coordinated through the Exercise Director in conjunction with the PEMA Public Information Office.

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.

Exelon, FEMA, PEMA, and involved counties are 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. The Exercise Director for the 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise is the Regional Assistance Committee (RAC) Chair. 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. The FEMA Region III RAC Chair for the Peach Bottom Atomic Power Station has authority to make determinations concerning evaluation issues and re-demonstrations. The PEMA Peach Bottom exercise planner has responsibility to organize and lead the Exercise Planning Team.

### Lead Controller

The Lead Controller also functions as a Trusted Agent. As such he/she is involved in developing the Master Scenario Events List and is privy to the scenario used at the utility to generate exercise play. The Lead Controller is responsible for scheduling controllers at the "Out-of-Sequence" components of the exercise and the 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller will be the PEMA REP Staff designee and is stationed in the CRCC during the Exercise.

The Lead Controller is responsible for the overall organization of the 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise, The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller debriefs the Controllers after the exercise and oversees the setup and takedown of the exercise.

### Controllers

At least one observer, liaison, or controller will be onsite with every facility and field team participating in the exercise, and at each out-of-sequence activity. 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 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the 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 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

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

# CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

## Exercise Documentation

The goal of the 2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, the SimCell, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

## Exercise Evaluation Guides

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

## Players Critique

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

## 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 on Friday, April 29, 2022 at 9:00 a.m. virtually. The Public/Media Briefing will be conducted on Friday, April 29, 2022 at 10:30 a.m. virtually.

## Controller and Evaluator Debriefing

Controllers, Evaluators, and selected exercise participants may attend a facilitated Controller and Evaluator Debriefing at a time and place determined by the evaluation team. 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 Meeting

The After-Action Meeting (AAM) 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. Not planned for this exercise.

## 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.

# APPENDIX A: EXERCISE SCHEDULE

**Table A.1** *2022 Peach Bottom Atomic Power Station Evaluated Full Scale Exercise Schedule*

| Time (Tentative) | Personnel | Activity |
|---|---|---|
| **April 26, 2022** | | |
| 4:00 p.m. – 10:00 p.m. | Commonwealth, County, and Municipal EOCs; Utility EOF, DEP/BRP Field Monitoring Teams | Full Scale Exercise |

**Table A.2** *2022 Peach Bottom Atomic Power Station Out of Sequence Exercise Schedule*

| Time (Tentative) | Personnel | Activity |
|---|---|---|
| **June 10, 2021** | | |
| Completed | WellSpan York Hospital, York County | MS-1 Hospital Federal Evaluation |
| **November 9, 2021** | | |
| Completed | WellSpan Ephrata Hospital, Lancaster County | MS-1 Hospital Federal Evaluation |
| **March 30, 2022** | | |
| 7:00 p.m. – 9:30 p.m. | Selected Reception, Mon/Decon Centers/Stations and Mass Care Facilities in Chester, Lancaster, and York Counties | Mass Care, Reception Center, Decontamination Center, and Decontamination Station Demonstration Evaluations |
| **March 29, 2022** | | |
| 9:00 a.m. – 11:00 a.m. | 9 Pennsylvania schools will be evaluated in 5 school districts in Chester, Lancaster, and York Counties.<br>Note: 5 Schools will be evaluated by FEMA and 4 by PEMA | School Demonstrations |
| **April 26, 2022** | | |
| 1:00 p.m. – 3:00 p.m. | Bureau of Radiation Protection Field Teams and R3V vehicles | BRP Equipment Inventory, Equipment Check, Air Sample Demonstration |
| **April 27, 2022** | | |
| 10:00 a.m. – 12:00 noon | PSP Troop K<br>Lancaster Barracks | TCP/ACP deployment and manning interview and briefing of concepts to Evaluators |

| | | |
|---|---|---|
| 10:00 a.m. – 11:00 a.m. | York County 4-H Center | Mass Care Demonstration |
| 10:00 a.m. – 11:00 a.m. | Octorara High School | Mass Care Demonstration |
| 6:00 p.m. – 7:00 p.m. | Lancaster Manheim High School | Mass Care Demonstration |
| TBD | | |
| ??? | Lancaster Lampeter-Strausburg | Emergency Worker Monitoring and Decontamination |
| **Tentative May 17** | | |
| Morning | 8 Mass Care Facilities in Lancaster and York Counties | Mass Care Walkdown Assessments by PEMA, FEMA, American Red Cross and County Personnel. Exelon optional. |

# APPENDIX B: METHOD OF OPERATION AND EXTENT OF PLAY

**PEACH BOTTOM ATOMIC POWER STATION**
**2022 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE**

**METHOD OF OPERATION**

## I. Peach Bottom Atomic Power Station (PBAPS)

The facility normally uses off-watch section personnel to participate in the exercise. The plant's simulated events, radiation readings, and emergency classifications will trigger offsite exercise actions. A pre-approved exercise scenario will be used. PBAPS will notify the Commonwealth Response Coordination Center (CRCC), the Bureau of Radiation Protection (BRP) and Risk Counties of emergency classifications.

## II. Bureau of Radiation Protection (BRP)

Personnel from the Pennsylvania Bureau of Radiation Protection (BRP) will be present and participate in the following aspects of the exercise during the Plume Exercise:

CRCC
Exelon EOF
Field Sampling Teams & Command Vehicle (R3V)

BRP personnel field teams and R3V will be evaluated during this exercise. The BRP accident assessment center will be evaluated as part of the PEMA CRCC. BRP field teams will perform air sampling out-of-sequence prior to deploying to conduct plume activities.

In the event the scenario has no radiological release, a report of Background Radiation by the Field Monitoring Team would be considered a successful demonstration of the criterion.

## III. PEMA Operations at the CRCC

This "Method of Operation" Document includes activities for the Full-Scale Plume Exercise (April 26, 2022), and the "Out-of-Sequence" Activities (Various).

### A. Plume Exercise – April 26, 2022

PEMA Staff and Agency Representatives (AREPSs) from designated state departments/agencies will comprise initial operations at the CRCC. The CRCC will be evaluated during this exercise. PEMA will provide additional injects to drive exercise play to exercise other internal objectives with specific agencies and partners within the CRCC during the federally evaluated exercise. These internal components will not be evaluated or construed to be an element of the federal exercise and should only affect the CRCC staffing.

### B. Plume Exercise – "Out-of-Sequence" Activities – March 29, 2022

A PEMA Lead Controller will disseminate exercise-related messages from the CRCC to the risk counties for dissemination to the participating school districts on March 29, 2022 during a demonstration window of 9:00 a.m. to 11:00 a.m. The CRCC and County Emergency Operation Centers (EOCs) will participate but WILL NOT be evaluated during the "Out-of-Sequence" component. PEMA personnel will serve as Observers at the identified school districts and schools.

## IV. PEMA Area Office Operations

The PEMA Area Offices (Harrisburg-Central Area and Hamburg-Eastern Area) will not be activated nor evaluated during this exercise.

## V. Pennsylvania State Police – April 27, 2022

The Pennsylvania State Police (PSP) demonstration will take place at PSP Lancaster Barracks, located at 2099 Lincoln Highway Lancaster, Pennsylvania. The PSP briefing will be performed out-of-sequence on April 27, 2022 in a demonstration window of **9:30 a.m. – 11:30 a.m.** PEMA personnel will be on location to serve as observer/controller (There are no anticipated injects). PSP will demonstrate through a briefing in which troopers are assigned to ACP/TCP locations. FEMA evaluator may conduct an interview

for follow up questions and view equipment/supplies. Personnel will not deploy to the field.

## VI. Counties Designated to Participate

The three risk counties (Chester, Lancaster, and York), in coordination with PEMA, will demonstrate the capability to mobilize appropriate staff, activate their respective EOCs and implement emergency response operations to include sheltering and/or evacuation. County government will provide direction and coordination to risk municipalities. Actual sheltering or evacuation of the general public will be simulated.

## VII. Local Emergency Management

The risk municipalities will demonstrate mobilization of staff, activation of their EOC, and implementation of emergency response operations. See Attachment A for those municipalities being evaluated on Back-up Route Alerting or TCP/ACP operations.

## VIII. PEMA Liaison Officers

Liaison officers will be present at the participating risk county EOCs, the Exelon EOF, and Exelon Joint Information Center (JIC) to provide assistance, guidance, and support. These liaison officers will participate as players in the exercise.

## IX. Controllers

A controller will be assigned for each "out-of-sequence" exercise.

Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, to provide guidance and direction for keeping the exercise on track.

## X. PEMA Observers

PEMA staff or other qualified personnel will be assigned, if required, to "out-of-sequence" exercise locations for observing, noting response actions and conditions, and recording observations for future use. Observers *will not take an active part in the exercise*, but will interact with staff members to the extent necessary to fulfill their observer responsibilities. Coaching of players by observers is not permitted except to provide training to participants awaiting a re-demonstration. (Refer to paragraph XIV)

## XI. FEMA Evaluators

Federal evaluators will be present at the risk county EOCs, risk municipal EOCs, and at appropriate field locations to evaluate player response to the actual and simulated events in the exercise scenario. The exercise will follow REP Program Manual (December 2019).

**Plume Phase Exercise (April 26, 2022):** Federal evaluators will be present at the CRCC, risk county and municipal EOCs, and other identified locations to evaluate player response to the actual and simulated events in the exercise scenario.

**Out-of-Sequence – Schools (March 29, 2022):** Federal evaluators will be present at the identified "out-of-sequence" demonstration sites per Attachment A, Section I.B.1. These include the identified Public School Districts.

**Out-of-Sequence – Pennsylvania State Police (April 27, 2022):** PSP demonstration will take place at PSP Lancaster Barracks, located at 2099 Lincoln Highway, Lancaster, Pennsylvania. The PSP briefing will be performed "out-of-sequence" in a demonstration window of 10:00 a.m. to 12:00 p.m.

**Out-of-Sequence – Reception Center, Evacuee and Emergency Worker Monitoring and Decontamination Centers and Stations, Mass Care Locations (March 30, 2022 and others as designated):** Federal evaluators will be present for demonstrations

conducted at Reception Centers, Mass Care Centers, and Monitoring/Decontamination Centers (for evacuees) and Stations (for Emergency Workers) as identified in Attachment A, Sections I.B.3, I.B.4 and I.B.5.

## XII. Demonstration Windows

In order to provide for more effective demonstrations, as well as to permit the release of volunteers from exercise play at a reasonable hour, periods of time have been designated during which specified actions will be accomplished/demonstrated.

The "demonstration windows" for this exercise are:

### A. Plume Phase Exercise

The following out-of-sequence Medical Services (MS-1) Hospital demonstrations were federally evaluated: Ephrata Community Hospital on November 9, 2021, and York Hospital on June 10, 2021. Brandywine Hospital was unable to be federally evaluated due to COVID-19 restrictions in 2021 and closed in January 2022.

There will be an evaluation of BRP field teams and R3V for this exercise. An out-of-sequence exercise will allow FEMA evaluators to observe equipment inventory, equipment operational checks, and an air sampling demonstration on April 26, 2022 beginning at 1:00 p.m. at the South Central Department of Environmental Protection Building.

Risk county and municipal EOC operations will be conducted on the evening of April 26, 2022. (Please refer to the Extent of Play Demonstration Tables, Attachment A, Sections I.A.1 and I.A.2).

Reception Center, Evacuee Monitoring and Decontamination Centers, Emergency Worker Decontamination Stations, and Mass Care demonstration will be held on March 30, 2022 as per Attachment A.

The out-of-sequence exercise window for school demonstrations will be conducted the morning of March 29, 2022 as per Attachment A.

The out-of-sequence interview of PSP traffic control/access control points will be from 10:00 a.m. to 12:00 p.m. on April 27, 2022.

All demonstrations will commence promptly and, barring any complications, not continue beyond the time of the designated demonstration window.

### B. Post Plume Exercise

A post-plume phase exercise is not scheduled during this evaluation.

## XIII. Stand-Down

At the completion of each out-of-sequence exercise, municipalities will be allowed to stand down when the specific exercise criterion they needed to demonstrate have been demonstrated.

## XIV. General Concepts

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

## XV. Re-demonstrations

During the exercise, any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training may be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. The exercise window may be extended to allow for re-demonstrations (Extension is being negotiated by FEMA – PEMA administration). The exercise After Action Report (AAR) will denote successfully redemonstrated criteria.

## OBJECTIVE 1 – Emergency Operations Management

**Capability Target 1.1:** Mobilization *(Vice Sub-Element 1.a.1)*
**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:**

1. Alert, notify, and mobilize key personnel, to include a 24-hour staffing roster, and activate facilities in a timely manner.
   - What time was staff notified? What time did they arrive at the facility?
   - Did the ORO demonstrate the activation of facilities for immediate use by mobilized personnel upon their arrival?
   - Was activation of facilities/locations completed in accordance with plans/procedures?
   - Were key emergency personnel contacted, alerted, and mobilized in a timely manner?
   - Did the ORO demonstrate the ability to staff and maintain 24-hour operations?
   - Were position staff trained and in place for facility activation?
2. Receive and verify notifications.
   - Who notified the ORO? Licensee or other?
   - For reverse notification, how was the licensee notified?
   - Was the notification/information verified? How?
   - What was the initial ECL? Were changes to ECLs communicated in the same manner?
3. Identify and request additional resources, as needed.
   - Was the ability to identify and request additional resources demonstrated? If not, was the ability to identify compensatory measures demonstrated?
   - Were MOUs and LOAs available for review?
4. Determine a facility operational.
   - What time was the facility declared operational?
   - What criteria was used to determine if the facility was operational?
   - What was the time difference between notifications of personnel and when the facility was declared 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.

| Pennsylvania Negotiated Extent of Play: |
|---|
| • *In all instances, the demonstration of a shift change is **NOT** required. Twenty-four-hour staffing will be demonstrated by means of a roster or staffing chart.* |

- *All out-of-sequence players and equipment will be pre-positioned (School District personnel, PSP, TCP/ACP, Reception Centers, Emergency Worker Monitoring and Decontamination Stations, and Evacuee Monitoring and Decontamination Centers).*
- *Actual calls (or pager notifications) will be made to the county/municipal EOC personnel for the Plume Phase exercise per plans and procedures.*
- *Individuals working in state facilities and county EOCs may be pre-positioned for the plume phase.*
- *Pre-positioning of state emergency personnel (Liaison Officers) at the EOF, the Utility JIC and at-risk counties is appropriate due to the commuting distance from the individual's duty location or residence.*
- *Other locations including municipal EOCs will NOT pre-stage for the Plume Phase exercise but will wait for actual notification per plans and procedures before staffing their duty locations.*
- *BRP Field Teams and R3V are evaluated for this exercise.*

**Capability Target 1.2:** Direction and Control *(Vice Sub-Element 1.b.1, 1.c.1, 1.e.1)*
**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:**

1. Support protective action decision-making.
   - Who, by title and position, was in charge?
   - Who was authorized to make any PADs prior to an official PAR from the licensee?
   - Did decision-makers obtain input from their support staff?
2. Conduct briefings in a timely manner.
   - Were briefings conducted in a timely manner?
   - What information was provided?
   - How frequently were briefings held?
   - Who gave the briefing?
3. Maintain situational awareness.
   - Did the ORO maintain situational awareness? How?
4. Coordinate response activities with other organizations.
   - Were response activities coordinated with other organizations? How?
5. Obtain resources to support emergency operations.
   - Were resources obtained to support emergency operations (e.g., through MOUs or other agreements)?
   - Was just-in-time training provided, as necessary?

6. Provide and maintain adequate facilities and equipment to support the emergency response.
   - Were facilities and equipment adequate to support operations? How so?
   - Was the facility evacuated during the plume? What means of monitoring and decontamination were used?

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

| **Pennsylvania Negotiated Extent of Play:** |
|---|
| • *Radiological Survey Instruments are calibrated per manufactures' recommendations.*<br>• *Evaluation of DRD and KI quantities will be verified using inventory sheets. DRDs or KI will not be removed from storage locations and boxes/packages will not be opened; however, lot numbers and expiration dates should be visible for inspection. KI questions will be addressed through interviews.*<br>• *Annual Direct Reading Dosimeter leakage testing verification or KI extension letters (as appropriate) will be available to the evaluator.*<br>• *Pennsylvania support counties do not have DRDs or KI but those responsible for reception centers, and/or monitoring and decontamination centers will have PRDs.*<br>• *All DRDs "read" in units of Roentgens. The Commonwealth counties and municipalities do not use DRDs which read in milli-Roentgens.*<br>• *BRP Field Teams and R3V will be evaluated for this exercise* |

**Capability Target 1.3:** Protective Action Recommendations *(Vice Sub-Element 2.b.1; 3.e.1)*
**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**

1. Select and implement pre-planned precautionary protective actions.
   - Who, by title/position and organization, made decisions to implement any preplanned precautionary protective actions outlined within plans/procedures?
   - What precautionary protective actions were taken? Why?
2. 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.

- Were differences in dose projection greater than a factor of ten discussed with the licensee? If so, were the differences resolved, and timely and appropriately incorporated into the PAR?

3. Develop PARs.
   - Who, by title/position and organization, developed each PAR?
   - What information (e.g., from the licensee, field monitoring data, release data, meteorological data, etc.) was used to develop each PAR?
   - Were PARs based on the ECL?
   - Were ETEs considered?
   - Were EPA and FDA PAGs considered when making PARs? Was any other criteria, guidance, and/or methodologies used?
   - Were recommendations for KI made and on what were they based?
   - What populations or groups were included in the KI PAR (e.g. general public, institutionalized)?
4. Transmit PARs in a timely manner.
   - Who, by title/position and organization, transmitted each PAR to the decision-makers?
   - Who was the PAR provided to?

**Post Plume**

1. Assess radiological consequences and provide appropriate PARs for the ingestion exposure pathway.
   - Who had the authority to make PARs for the ingestion pathway?
   - Were precautionary actions (e.g., placing animals on stored feed and water) were considered to protect the ingestion pathway?
   - Did the ORO coordinate on PARs developed for ingestion pathway?
   - What boundaries were recommended for the restricted area? Did this include a recommendation for a buffer zone?
   - Were projected doses considered in developing recommendations for relocation? Were they compared to the EPA PAGs?
   - Were FDA PAGs (DILs as a surrogate) considered when recommending holds or embargos?
   - Were recommendations made for exposure and dose limitations for those temporarily reentering the restricted area?
   - Were recommendations developed to assist decision-makers on relaxing protective actions to allow for return?

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.

| **Pennsylvania Negotiated Extent of Play:** |
| --- |
| • *BRP will validate plant dose projections and coordinate resolution of differences if more than a factor of 10. If the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PADs can be addressed through an interview (Note: BRP field operations are evaluated for this exercise).* |

**Capability Target 1.4:** Protective Action Decisions for the Plume Phase *(Vice Sub-Element 2.b.2; 2.c.1)*
**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:**

1. Coordinate and make PADs for members of the general public.
   - Who, by title and organization, made PADs?
   - Did PADs need to be coordinated with other jurisdictions?
   - Did all appropriate OROs communicate and coordinate precautionary protective actions and/or PADs amongst each other? Who was involved?
   - What applicable Federal guidelines were utilized when making PADs?
   - Were precautionary protective actions and/or initial PADs made in a timely manner based on the scenario?
   - What were PADs based on (e.g., ETEs, predetermined actions, information/PARs from the licensee, protective action strategy, ORO assessment of plant status, weather conditions, and/or radiological releases, other incident information, input from appropriate ORO authorities, overall risk assessment of evacuation vs. shelter-in-place, considerations for those with access and functional needs, etc.)?
   - Are any supplemental resources necessary to implement a PAD (e.g., law enforcement, fire service, HAZMAT, and medical resources)? If so, who can request Federal support?
   - Were PADs coordinated with the ICP, if applicable?
   - Were all decisions communicated with all affected locations in a timely manner?
2. Coordinate and make PADs for those with access and functional needs.
   - What factors were considered for PADs made for those with access and functional needs?
   - Were there specific PADs for those with access and functional needs?
   - What was the basis of the PADs for those with access and functional needs?
3. Coordinate and make PADs for students at schools.
   - How did the ORO alert and notify all school systems/districts of emergency conditions?
   - What were protective actions for schools based on?
   - What PADs were made?
   - How were the PADs coordinated?
4. Coordinate and make subsequent or alternate PADs.
   - Were subsequent or alternate PADs made? What were they? On what were they based (e.g., changing metrological conditions, field data, updated dose projections, changes in plant conditions)?

- Was the process for making PADs during a rapidly escalating situation different?
- What were subsequent/alternate PADs based on?

5. Coordinate and make decisions on the administration of KI (where applicable) for the public and institutionalized members of the population.
   - What was the KI decision-making process?
   - Did the decision require coordination with assessment and decision-making staff? Was it based on projected thyroid dose compared with the established PAGs?
   - Was there coordination among OROs involved in the decision-making process for KI administration?
   - Was the message content clear on KI instructions?
   - How was KI information provided to those who needed to take it?

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.

| **Pennsylvania Negotiated Extent of Play:** |
|---|
| • *The Commonwealth, in developing a PAD, will base the decision upon plant recommendation and the condition, confirmation and advice of BRP, environmental data, impediments, and other factors that may impact the decision. If the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PADs can be addressed through an interview.*<br>• *The Commonwealth will include Maryland and it's affected counties in the decision-making process, but they may make a decision independent of the Commonwealth's decision.*<br>• *Whenever the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PADs can be addressed through an interview at the CRCC if required.* |

**Capability Target 1.5:** Protective Action Decision Implementation for the Plume Phase *(Vice Sub-Element 3.b.1; 3.c.1; 3.c.2)*
**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:**

1. Implement PADs, ensuring communication and coordination with all appropriate jurisdictions.
   - Were resources identified and utilized effectively?
   - Did OROs communicate and work together in an effective manner?
   - What type of coordination occurred on the implementation of protective actions?
   - Was the public kept informed and was the information provided relevant?
   - Were PADs implemented as directed?
   - What types of populations are in the plume exposure pathway EPZ (e.g., institutionalized, access and functional needs, non-English speaking, etc.)? Who is responsible for notifying each, and at what point during the incident?
   - Were there any gaps in resources identified? If so, how were they addressed?
2. Assist those with access and functional needs during the implementation of PADs.
   - What time was the order received for those with access and functional needs?
   - Were the facility/facilities receiving those with access and functional needs listed in the plans?
   - How were individuals with services animals addressed
3. Communicate, coordinate, and implement protective actions for schools.
   - What school districts are located within the plume exposure pathway EPZ?
   - Who notifies school districts? How?
   - What was the protective action that the school took?
   - With regard to processing students, faculty, and staff, what sort of PADs were made?
   - At which ECL were the school districts notified?
   - If students were moved, which reclamation centers were they sent to? Which is the host school?
   - How were parents and/or guardians notified?
   - Are there schools located outside the plume exposure pathway EPZ that have students living within the EPZ? What arrangements are made for those students?
   - What type of transportation was provided to the students (e.g., bus, etc.)?
   - Who notifies the bus drivers?
   - Were there adequate buses available? And how do they communicate with the school?
   - Do the bus drivers know where to take the students? Are they trained on what to do?
   - Was the school evacuated during the plume? What means of monitoring and decontamination were used?
4. Communicate with transportation officials.
   - What transportation needs or resources were required?
   - Was a list of the transportation providers available?
   - Were transportation providers contacted?
   - How were needs for transportation-dependent individuals met?
   - Were designated pick-up points used?
5. Identify evacuation routes for the general public.
   - What evacuation routes were selected?
   - Were the direction of the wind/plume and/or other hazardous conditions considered in determining which evacuation routes were used?
   - How was this information communicated to the media and the public?
   - How were alterations to the pre-designated routes communicated to the media and the public?

- Was the facility evacuated during the plume?

6. Make KI available to both institutionalized persons and the general public, in accordance with plans and procedures.
   - How was the decision to take KI disseminated to the public and institutionalized persons?
   - Did the ORO provide KI to the general public and institutionalized persons? If so, how was it distributed?
   - What quantities of KI are available?
   - Where is KI stored?
   - What dosages of KI are available?
   - What is the expiration date of KI? If there is an extended policy, where is the letter certifying the extension?
   - Did the ORO ensure that the KI is stored in a temperature-controlled facility?
   - What information was provided to the general public with regard to KI?
   - What instructions were provided for the use of KI?
   - Did the instructions include dosages and frequency to take KI?
   - Did the instructions include contradictions and side effects of using KI? How was it explained?
   - How was KI ingestion documented for institutionalized persons?
   - Did staff maintain lists of the institutionalized individual who ingested KI?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Within Pennsylvania, the Pennsylvania Department of Health is responsible for distribution of KI to the general public located within the EPZ. Pre-distribution is accomplished on an annual basis. Pennsylvania does not distribute KI at reception centers.*<br>• *Evaluation of emergency worker KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes will not be opened. KI questions will be addressed through interviews.*<br>• *Personnel assigned to operate monitoring/decontamination centers and stations or reception centers are not issued DRDs or KI since the centers/stations/reception centers are located outside the EPZ. Simulated PRDs with mock serial numbers may be used to simulate issue (Maximum of 6 issued).*<br>• *Whenever the scenario has no radiological release, or potential of a radiological release, the decision-making process on the need to recommend KI can be addressed through an interview if required.*<br>• *The names, locations and contact information of identified individuals with identified disabilities and access/functional needs are maintained on a list at their respective municipal EOC (based upon residential jurisdiction). Copies of these lists will not be provided to the evaluators; however, evaluators will be allowed to inspect the lists during the exercise.*<br>• *Evaluators may ask, by interview, about the transportation plans concerning transportation staging, source of vehicles, radiological protection of the* |

*drivers/emergency workers, and routes or assignments of vehicles for transportation of persons with disabilities and access/functional needs. No buses or drivers will be mobilized (The mobilization of buses is being negotiated by FEMA – PEMA administration).*

- *Initial contact, by the county, with special populations and reception facilities will be actual (One actual call required for each type – hospitals, nursing homes and correctional facilities). All subsequent calls will be simulated. Actual contacts (up to two per risk county) will be made with transportation providers as per plan. All actual and simulated contacts should be logged.*
- *School students will not be involved during the exercise. Actions and activities associated with the demonstration will be limited to the School District Administration key personnel and the County. Evacuation of students will be conducted through an interview process with School District personnel or the building principal.*
- *The role of the bus driver may be conducted through an interview with school or transportation officials (or designee) if a bus driver is not available. Actual demonstration of the bus route is not required and will not be demonstrated. Maps or route descriptions will be available for illustration purposes.*
- *Risk County school plans do not require communications between the school and vehicles.*
- *Bus drivers who are prepositioned for evacuation at GE are not considered emergency workers and therefore do not require dosimetry unless returning to the Emergency Planning Zone to fulfill additional relocation requirements.*
- *Private schools, private kindergartens, and day care centers do not participate in REP exercises. However, OROs will be prepared to show evaluators lists of these facilities that they will contact in the event of an emergency in accordance with plans and procedures. Any simulated contacts will be logged.*
- *School district have been encouraged to develop plans that provide for student relocation at Site Area Emergency. However, School Districts, as sovereign entities, may choose to perform student relocations at General Emergency. If a district chooses to relocate at General Emergency their plan must reflect having buses on location ready for immediate relocation of the students in one lift and have plans in place for student monitoring and decontamination if warranted. If school plans allow for relocation at Site Area Emergency the process should not be automatic but done at the advice of the county to prevent unneeded risk during the movement process.*

**Capability Target 1.6:** Protective Action Decisions for the Post-Plume Phase *(Vice Sub-Element 2.d.1, 2.e.1)*
**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:**

1. Make post-plume phase decisions in a timely manner.
   - Who has the authority to make ingestion exposure pathway decisions?
   - Who has the authority to make decisions for relocation, reentry, reoccupancy, or return?
   - What Federal guidance was utilized in the decision-making process?
   - What additional resources, if any, were requested or anticipated?
   - Were there any precautionary protective actions for the ingestion exposure pathway considered prior to analytical data?
   - Did ingestion exposure pathway assessment include analysis of water, food, and release characterization?
   - What times were decisions regarding the ingestion exposure pathway made, including precautionary protective actions?
   - How were boundaries of temporary embargo zones identified?
   - How were the boundaries of the deposition footprint determined (e.g., field and/or aerial measurements, deposition projections or a combination of sources)?
   - Were crops grown in affected areas identified? Was there a determination on how crops would be harvested or tracked?
   - How were water supply sources identified?
   - Were sample results obtained from specified labs? Were dose assessments based upon sample results? Were locations plotted on a map to identify areas that exceed PAGs?
   - What watershed and agricultural data was used to make decisions?
   - Did ANI participate and did they address compensation of loss?
2. Make relocation decisions for the post-plume phase in a timely manner.
   - How were integrated doses in contaminated areas estimated? Were they compared to the PAGs?
   - How were the areas to be restricted identified/determined? What factors were used to make the decision (e.g., the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, field samples of vegetation and soil analyses, etc.)?
   - Was the optional approach (230 μR/hr) to determine the restricted area boundary utilized?
   - How was access to evacuated and restricted areas controlled? What agencies have that responsibility?
   - How was the area of interest identified?

- If aerial measurements were used, what method or procedure will be used to identify the area of interest that is below the detection limit of the aircraft?
- How did the ORO relocate members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs?
- How did the ORO determine the area(s) to be restricted?
- What resources are available for providing medical and social assistance for relocated individuals?

3. Make reentry decisions for the post-plume phase in a timely manner.
   - What was the coordinated strategy for authorized reentry of individuals to the restricted zone? What was considered when forming the strategy (e.g., established exposure limits, maintenance of essential services and/or property, security, retrieval of possessions, etc.)?
   - How did the ORO determine location of control points, who should be allowed to re-enter the restricted zone, and what provisions were made to determine and control their exposure?
   - How did the ORO provide for exit from the restricted area, including monitoring of persons, vehicles, and equipment?
   - What were the exposure limits, including the time period over which the dose would accumulate?
4. Make return decisions for the post-plume phase in a timely manner.
   - What were the return boundaries based on? (e.g., political boundaries, physical boundaries)
   - Was return permitted to the boundary of the restricted area or was a buffer zone established?
   - Did decision-makers consider restoration of services for areas where return was allowed? (e.g., medical facilities, schools, utilities, roads, and intermediate housing).
5. Make re-occupancy decisions for the post-plume phase in a timely manner.
   - What considerations are made for reoccupancy?
   - What factors were taken into account to consider reoccupancy?
   - What community organizations were part of the decision-making process?
   - What instructions were provided to the population allowed to reoccupy areas?
   - Were any additional actions necessary for populations to reoccupy an area? (e.g., washing down buildings, restricting use of backyard produce gardens)
6. Coordinate PADs as appropriate.
   - What arrangements were made to coordinate potential decisions?
   - How were decisions coordinated internally and with other jurisdictions?
   - How were decisions 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.

| **Pennsylvania Negotiated Extent of Play:** |
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| This sub-element will not be evaluated during this exercise. |

**Capability Target 1.7**: Protective Action Decision Implementation for the Post-Plume Phase *(Vice Sub-Element: 3.a.1, 3.d.1, 3.e.1, 3.e.2, 3.f.1, 5.b.1)*

**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:**

1. 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.
   - How were agribusinesses notified of the PADs?
   - What coordination and communications among organizations responsible for implementing protective actions occurred? How were changes and developments communicated?
   - Were precautionary protective actions taken to prevent contamination?
   - Were Federal and other resources identified that will assist with determination and implementation of ingestion exposure pathway protective actions?
2. Formulate protective action information (e.g., brochures, email, text message, etc.) for the general public and food producers and processors.
   - Were there instructions in the protective actions provided on what foods or crops were being affected?
   - Were protective actions clearly provided and were maps provided identifying the specific areas in which to implement the protective actions by the decision-makers?
   - Were reproduction-ready information and instructions to pre-determined individuals and businesses available for production and distribution (obtain copies of available information)? Was the information on the handouts current?
3. Control, restrict, or prevent distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food controls.
   - What were the state/local requirements to implement embargos or condemnations?
   - Who delivered condemnation or embargo notices to agribusinesses?
   - How were necessary legal notices delivered?
   - Did the ORO use Federal resources as identified in the National Response Framework Nuclear/Radiological Incident Annex, if needed?
   - What coordination and communications among organizations responsible for implementing protective actions occurred?
   - What measures were taken and what strategies were developed by the ORO to implement protective actions for general public and for food producers in the ingestion exposure pathway EPZ, including preventing distribution of potentially contaminated food?
   - Was there current information on the locations of permanent agribusiness facilities available? From what source was this information obtained?

- In addition to the location of agribusiness sites, what other information (e.g., name and address of owner) was available?
- Was there current information on harvest times available? From what source was this information obtained?
- Was a plan developed to monitor transportation routes out of the affected areas and to monitor and sample foods on vehicles leaving the area?
- Who is responsible to monitor and sample foods on vehicles and where will they be located?
- Where or how were condemned food products taken for disposal?

4. Communicate instructions to the public regarding relocation decisions and intermediate-term housing for relocated persons.
   - What coordination and communications among organizations responsible for implementing protective actions occurred?
   - How were decisions and instructions for relocation communicated to organizations and the public?
   - Was a monitoring and decontamination location included in the information provided to the public?
5. Coordinate and implement decisions concerning relocation, including short- and/or long-term relocation of evacuees.
   - What coordination and communications among organizations responsible for implementing protective actions occurred?
   - How did the ORO coordinate and implement decisions concerning relocation of individuals from now-restricted areas?
   - What were the provisions of short-, intermediate-, and long-term relocation of evacuees from now-restricted areas?
   - Was the ORO prepared to provide housing?
   - What were the arrangements made to relocate those displaced as a result of contamination? What provisions were made for their care and support?
   - How were transportation-dependent evacuees transported from the restricted zone if they had not been previously evacuated? What transportation was provided? How was it communicated?
6. Control reentry and exit of individuals who are authorized by the ORO to temporarily reenter the restricted area.
   - What coordination and communications among organizations responsible for implementing protective actions occurred?
   - What coordination and implementation of decisions for temporary reentry of individuals to restricted areas occurred?
   - What instructions/information were provided prior to reentry (e.g., map and plots of radiation exposure rates, advice on areas to avoid, associated time frames, etc.)?
   - How were those individuals permitted temporary reentry to restricted areas protected from unnecessary radiation exposure?
   - Were DRDs and PRDs assigned for emergency workers and individuals permitted temporary reentry to a restricted area? What information was provided regarding dosimetry use?
   - Were persons reentering escorted by someone trained in the use of dosimetry?

- What were the procedures for exit from the restricted area(s) emergency workers and individuals?
- What were the procedures for exit from the restricted area(s) for vehicles and other equipment?
- How were dosimetry and exposure record handled upon exit from the restricted area(s)?
- Was monitoring and decontamination conducted at the exit from the restricted area or at a separate center?
- How were individuals transported into and out of the restricted area?

7. Implement policies concerning return of members of the public to areas that were evacuated during the plume phase.
   - What coordination and communications among organizations responsible for implementing protective actions occurred?
   - How were services and facilities (e.g., utilities, food store/restaurants, hospitals, schools, etc.) that require restoration within a few days identified and prioritized?
   - What resources were available to facilitate restoration?
   - Was implementation of the decision to return supported by restoration of services and facilities?
   - Were hot spots decontaminated if necessary?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| This sub-element will not be evaluated during this exercise. |

## OBJECTIVE 2 - Exposure Control

**Capability Target 2.1:** Emergency Worker Exposure Control Decision-Making Process *(Vice Sub-Element: 2.a.1)*
**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:**

1. Control emergency workers' exposure and dose, including offsite workers performing duties onsite.
   - Who was responsible for managing emergency workers' exposure and dose?
   - Were projected doses and likely exposure rate patterns considered before dispatching workers?
   - Were any of the following considered: alternate entry and exit routes; potential changes to meet conditions; area or roads to avoid; what to do in the event of equipment or vehicle failure; and previous doses?
   - Were safety issues, supplemental to radiation, considered for the locations of field teams, the ICP, and other appropriate personnel?
   - How did incoming mutual aid, including Federal or private resources, obtain dosimetry, radioprotective drugs, and subsequent just-in-time training?
   - Who briefed emergency workers? Did the briefing include the following:
     - Ensuring dosimetry are zeroed or initial reading is recorded.
     - Frequency to read and record dosimeters.
     - The process of reporting exposures.
     - Proper placement of dosimeters.
     - Proper use of PRDs.
     - Ingestion and documentation of radioprotective drugs.
     - Potential adverse effects of radioprotective drugs.
     - The location to report to for monitoring and decontamination.
2. Maintain record of dose as a result of exposure.
   - How were exposures and subsequent doses reported from the field documented?
3. Authorize exposures and dose in excess of identified limits.
   - Who authorized emergency workers to receive exposure in excess of identified limits?
   - What were the identified limits?
   - How was this authorization documented?
4. Process for considering occupational exposures and to authorize individuals to receive doses in excess of occupational dose limits.

- Was occupational exposure considered for those working during the emergency, in both the intermediate and late phases of a NPP accident?
- Who authorized occupational doses in excess of Federal limits?

5. Determine a correction factor for DRD-based isotopic release mixture.
   - What approach was used to correct DRD readings to TED (e.g., dosimeter corrections factors)?
6. Control exposure and dose for temporary reentry of emergency workers, or members of the public, to restricted areas.
   - What provisions were available for controlling exposure and dose rates for temporary reentry to restricted areas?
   - How were controlled exposure and doses documented for those reentering restricted areas?
7. Determine the need to authorize radioprotective drugs using projected thyroid doses and field measurements. Projections are compared to previously established PAGs.
   - Who authorized emergency workers to take radioprotective drugs?
   - When was the decision made to authorize emergency workers to take radioprotective drugs?
   - Was the decision to use radioprotective drugs based on projected thyroid doses?
   - Were projected thyroid doses compared to establish PAGs?
   - Did the decision-making process for use of radioprotective drugs include close coordination with assessment and decision-making staff?
   - How was the decision to authorize radioprotective drugs communicated to emergency workers?
8. Adequately protect members of the public from radiological exposure and control dose for those who are authorized to temporarily reenter a restricted area.
   - What provisions were there for dosimetry and contamination control for emergency workers and members of the public temporarily reentering a restricted area?
   - What exposure rates or limits were established for emergency workers and members of the public temporarily reentering a restricted area?
   - How were exposure and doses documented and controlled for emergency workers and members of the public temporarily reentering restricted areas?
   - What was the process for decontamination, collection of dosimetry, and recording exposures for emergency workers or members of the public exiting the restricted area following temporary reentry?
   - How was contamination monitoring and decontamination conducted for those exiting 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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Radiological briefings (which may be supported by video) will be provided to address exposure limits, procedures to replace those personnel approaching exposure limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI to emergency workers will be simulated. The Commonwealth, under* |

*direction of the Department of Health, will authorize use of KI when radiological conditions warrant its use. If the scenario has no potential for a radiological release, the decision on the distribution and administration of KI as a protective measure for emergency workers and the authorization process for emergency workers to exceed pre-authorized levels can be addressed through an interview.*

- *The completion of a "Dosimetry-KI Report Form" will be demonstrated.*

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

**Demonstration and Evaluation Guidance:**

1. Maintain an appropriate inventory of DRDs that are leak-tested or current in calibration.
   - What types of DRDs were used?
   - Were they consistent with the plans?
   - Were they current in calibration or leak test?
2. Maintain an appropriate inventory of PRDs.
   - What type of PRDs were used?
   - Was the inventory of available PRDs sufficient for the number of workers?
   - How many PRDs were available?
3. Retain an adequate supply of radioprotective drugs.
   - Was there an adequate supply of radioprotective drugs?
   - How many doses of radioprotective drugs were available?
   - Was the quantity of radioprotective drugs available sufficient for the number of individuals needing to take it?
4. Adequately distribute appropriate DRDs and PRDs.
   - Was dosimetry distributed in a timely manner?
   - Was dosimetry distributed appropriately to read identified exposure limits?
   - Did workers receive personal dosimetry or group dosimetry?
5. Adequately distribute radioprotective drugs to emergency workers.
   - Were radioprotective drugs distributed in a timely manner?
6. Record and report exposures in the field.
   - Did workers read and record dosimetry on a regular basis?
   - At what frequency were readings recorded?

- To who were the readings reported?
- Who briefed emergency workers? Did the briefing include the following:
  - Ensuring dosimetry are zeroed or initial reading is recorded.
  - Frequency to read and record dosimeters.
  - The process of reporting exposures.
  - Proper placement of dosimeters.
  - Proper use of PRDs.
  - Ingestion and documentation of radioprotective drugs.
  - Potential adverse effects of radioprotective drugs.
  - The location to report to for monitoring and decontamination.

7. Implement decisions to administer radioprotective drugs.
   - What was the quantity of the inventory of radioprotective drugs and the expiration date?
   - Was the available quantity of radioprotective drugs sufficient to support the number of emergency workers?
   - Was the supply of radioprotective drugs stored according to manufacturer recommendations?
   - How was the ingestion of radioprotective drugs documented?
   - Did emergency workers have a basic knowledge of procedures for ingesting and recording the use of radioprotective drugs, even if the scenario did not drive its use?
   - How were records of exposure and ingestion of radioprotective drugs maintained?
   - Did plans/procedures include a mechanism for identifying an emergency worker who has declined to take radioprotective drugs in advance? If so, how was this documented?
8. Report to individual responsible for managing exposure and dose when limits are reached.
   - What was the identified exposure limit?
   - What was the dosimeter correction factor and how was it communicated to emergency workers?
   - What is the process for receiving approval for exceeding exposure limits and dose limits?
   - Who authorized emergency workers to exceed limits or replace a worker who has reached exposure limits?
   - Who coordinated with offsite emergency workers who were performing duties onsite?
9. 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.
   - What exposure control decisions were implemented to members of the public? What was the control dose for those who were 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.

**Pennsylvania Negotiated Extent of Play:**

- *Radiological briefings (which may be supported by video) will be provided to address exposure limits, procedures to replace those personnel approaching exposure limits and how permission to exceed limits is obtained from the municipality and county.*
- *Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI to emergency workers will be simulated. The Commonwealth, under direction of the Department of Health, will authorize use of KI when radiological conditions warrant its use.*
- *If the scenario has no potential for a radiological release, the decision on the distribution and administration of KI as a protective measure for emergency workers and the authorization process for emergency workers to exceed pre-authorized levels can be addressed through an interview.*
- *OROs should demonstrate the use of all applicable dosimetry forms. The completion of a "Dosimetry-KI Report Form" will be demonstrated (Maximum of six (6) forms).*
- *At any time, players may ask other players or supervisors to clarify radiological information.*
- *Evaluation of emergency worker KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes will not be opened. KI questions will be addressed through interviews.*
- *Personnel assigned to operate monitoring/decontamination centers and stations are not issued DRDs or KI since the centers/stations are located outside the EPZ. Simulated PRDs with mock serial numbers shall be used to simulate issue.*
- *Emergency workers who are assigned to low exposure rate areas, e.g., at counting laboratories, EOCs, and communications centers, may have individual permanent record dosimeters or they may be monitored by dosimeters strategically placed in the work area. In Pennsylvania, this will be accomplished through the use of an area kit. The area kit process is explained in State, County and Municipal Plans.*
- *Standard issue of dosimetry and KI for each category of emergency worker is as follows:*
    - *Category A: 1 PRD, 1 DRD, and 1 unit of KI*
    - *Category B: 1 PRD and 1 unit of KI (Area Kit includes 2 DRDs)*
    - *Category C: 1 PRD*
- *In Pennsylvania, emergency workers do not have turn-back values.*
- *All locations that have dosimetry equipment indicated within their Radiological Emergency Response Plan (RERP), will make the dosimetry equipment and KI available for inspection by the Federal Evaluator. In order to demonstrate an understanding of the use of the dosimetry equipment, KI and associated forms, the location need only remove and distribute/issue a maximum of six (6) units of dosimetry from their inventory. Simulation PRDs with mock serial numbers and simulated KI may be issued. The location will demonstrate filling out a minimum of two (2) Dosimetry/KI Report Form. For those locations to which dosimetry is delivered by the county, the ORO will demonstrate their equipment by producing an inventory sheet of those items.*
- *Risk counties will have a designated staging area(s) for collection and briefing of supporting units inbound to the Emergency Planning Zone.*

## OBJECTIVE 3 - Alert and Notification

**Capability Target 3.1:** Communications *(Vice Sub-Element: 1.d.1)*
**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:**

1. Utilize communication systems that are fully functional, continuously available, and redundant.
   - What types of communications system(s) and method(s) were available? Which were demonstrated?
   - Was the communication system(s) fully functional?
   - Did personnel demonstrate familiarity of use with each system/method?
   - Was a communications check with other jurisdictions, field teams, and/or other support organizations required and completed?
2. Maintain periodic test results and corrective actions on a real time basis.
   - How were test results and corrective actions tracked in real time?
   - Was documentation of the test results and/or corrective actions made available?
3. Access at least one communication system that is independent of the commercial telephone system.
   - Which communication system(s) available was independent of commercial telephone?
   - Was it able to be accessed/utilized?
4. Manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations.
   - Were there any delays in message traffic that disrupted emergency operations? If so, how were the delays addressed/mitigated?
5. Identify and address any failures of the systems.
   - Were there any communication failures? If so, how was the failure identified?
   - What actions were taken to correct the failure and/or how was the failure overcome?
   - Did the failure affect overall performance?
6. Transmit, receive, and understand messages (i.e., “content check”).
   - Were the messages transmitted/received understood by personnel?
   - What was the message?
   - Was a “content check” (i.e., informational message that could be received during an actual radiological emergency) performed?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *The plant will communicate to the risk counties and CRCC utilizing the EMNet electronic notification system (Primary) and followed by commercial telephone system (Secondary). If the plant cannot contact the CRCC, the Power Plant will contact the York County EOC and York County EOC will fulfill the role of primary contact until such time as communications with the CRCC can be made.*<br>• *Risk counties will communicate with the CRCC via the commercial telephone system (Primary), email (Secondary) and other systems. When warranted, siren sounding will be coordinated on the phone/internet bridge line.*<br>• *Risk counties will communicate with their risk municipalities via public safety radio frequencies (EMA Radio), commercial telephone, fax, email, or Amateur Radio Communications (ACS/ARES/RACES) or other available means.*<br>• *BRP Field Teams will demonstrate two or more forms of communications (Field Teams and R3V).* |

**Capability Target 3.2:** Alert and Notification of the Public *(Vice Sub-Element: 5.a.1; 5.a.3; 5.a.4)*
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**

1. Sequentially provide an alert signal followed by an initial instructional message to populated areas.
   - Who has releasing authority of initial EAS or other notification method messaging?
   - Who made the decision to activate the alert and notification system?
   - What process is followed to activate the system?
   - Who activated the system?
   - What alert method(s) was used (siren-system, tone-alert radio, route alerting, telephone, Telecommunication Device for the Deaf/TeleType [TDD/TTY], etc.)?
2. Alert and notify the general public.
   - Was the same method used for approving and releasing subsequent alert and notification as the initial alert/ notification?
   - What alert method(s) was used (siren-system, tone-alert radio, route alerting, telephone, TDD/TTY, etc.)?
   - What message was sent out? Was it pre-scripted?
   - How often were messages repeated?

- Conduct initial messaging with, at a minimum, the following four essential elements in the message:
  - Identification of the ORO responsible and the official with authority for providing the alert and instructional message;
  - Identification of the commercial NPP and a statement that an emergency exists there;
  - Reference to REP-specific emergency information (e.g., brochures, calendars, and/or online information) for use by the general public during an emergency;
  - A closing statement asking that the affected and potentially affected population stay tuned for additional information, or that the population tune to another station for additional information.

3. Identify and address any failures of the system(s) or portion of a system(s).
   - Were there any failures of the system or a portion(s) of the system?
   - How were any failures of the system or a portion(s) of the system identified?
   - Was the failure attributed to a specific portion of the plume and/or ingestion exposure pathway EPZ or segment of the population? How?
   - What alternate means of alert and notification (e.g., simultaneous or concurrent failure models have overlapping systems which will seamlessly address failures; activation of additional system(s); route alerting; etc.) was utilized for the area of the plume and/or ingestion exposure pathway EPZ or segment of the population affected by the failure(s)? How were the alerts/notifications provided? What was the message?
   - Once the failure was identified, what actions were taken?
   - If message dissemination is identified as not being accomplished in a timely manner, what was the specific delay? What caused the message to not be provided in a timely manner?
4. Actual testing of the mobile public address system will be conducted at an agreed upon location.
   - What notification methods were tested?
   - How does the notification system deliver messages (e.g., via phone call, text message, and email based on a database of contact information associated with physical addresses)?
   - How, and how often, is the system tested?

**EAS**

1. Identify the process to activate the EAS.
   - What protocol or system was used to activate the EAS? (i.e., software, NWS, radio station, IPAWS)
   - How long did the process take to activate the system?
   - If NWS or radio station was used, was there verification between the ORO and the broadcast station of the EAS message prior to broadcast?
2. Ensure that updated emergency information is disseminated in a timely manner.
   - Were messages updated to relay the most current information concerning the incident?
3. Ensure that current emergency information is repeated at pre-established intervals.
   - What are the pre-established intervals?
   - How often was information repeated?
4. 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.
   - Did the station have a copy of current plans, procedures, and messages?

- Did station staff demonstrate the process to broadcast messages?
- If required, did the EAS station verify who the message came from and that it is the correct message?
- Was the EAS station kept updated with new information and messages? How?

5. Broadcast the message on a 24-hour basis.
   - What is the 24-hour capability of this location?
   - Is there back-up power supply or is an alternate station used?

### Route/Alternate Alerting

1. 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.).
   - Why was route/alternate alerting initiated?
   - Was this a FEMA-approved exception area?
   - What organization(s) are responsible for providing route/alternate alerting?
   - Under what conditions was route/alternate alerting initiated?
   - Who notified the resources to begin route/alternate alerting? How were they notified?
   - What resources provided route/alternate alerting?
   - How long did it take to complete the route/alternate alerting?
   - How was the message announced? What was the content of the message?
   - For exception area notification, was it completed within 45 minutes of the initial decision by authorized offsite emergency officials to notify the public of an incident?
   - What system was used for exception areas?
   - Who approves the use of the system for alerting exception areas?
   - Who deployed the system for alerting exception areas and what was the process?
   - Can individual sub-areas be activated using the system to alert FEMA approved exception areas?
   - Was a test done or was a previous tests report used as confirmation of operation in alerting exception areas?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *The Commonwealth of Pennsylvania has implemented a Statewide EAS Control system in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Pennsylvania Emergency Alert System State EAS Plan (September 23, 2010 and revised on November 2, 2011). The CRCC (PEMA) is the initiating point for the activation of the EAS. Risk counties have the control equipment for activation of sirens. Coordination will occur between the CRCC and the affected counties (with respect to the Alert and Notification System [ANS])* |

*process as to when the sirens and EAS messages will occur. Sirens will be coordinated, and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately 3 minutes following the simulated activation of the sirens. Regular Broadcasting will not be interrupted on the EAS Stations. All subsequent actions to broadcast stations will be simulated. Broadcast of the message(s) or test message(s) is **NOT** required and **NOT** requested. Counties may elect to provide Subsequent News Bulletins or County-Specific EAS messages to their EAS stations.*

- *Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting/notification. This action will be performed "with a sense of urgency and without undue delay" (REP Manual-January 2016).*
- *All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview.*
- *Each evaluated municipality per risk county will demonstrate, by interview, route alerting of the hearing impaired residents within their jurisdiction. Hearing impaired notification teams will not be deployed.*
- *Plans specify that route alerting is used as a back up to the sirens. County Liaisons will provide an inject to the risk counties that a siren has failed. The county will demonstrate contacting one municipal EOC in regard to the failed siren in that municipality. The municipal EOC will then dispatch a route alert team to cover one route alert sector affected by the failed siren. All other routes will be simulated. Route Alert Teams should finish their route in about 45 minutes from time of siren failure.*
- *OROs may utilize IPAWs or other public alerting systems in accordance with their plans but use of such systems will not negate the need to provide for route alerting by the ORO. Counties utilizing electronic notification systems will provide evaluators evidence of system operations by conducting a test message (no public notification) or documentation of real-world notification results*
- *Note that evaluators are unable to ride route alerting vehicles in any county due to insurance and policy requirements.*

**Capability Target 3.3:** Emergency Information and Instructions for the Public and News Media *(Vice Sub-Element: 5.b.1; 3.e.2)*
**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

1. Deliver coordinated, prompt, reliable, and actionable information in a timely manner.
   - Who approves the message content and authorizes the release of the message?
   - Was messaging coordinated with appropriate Federal, state, local, and tribal stakeholders prior to dissemination?
   - Were methods consistent with an established JIS?
   - How often was emergency information repeated?
2. Provide clear, concise, accessible messaging using plain language.
   - Was language clear, concise, accurate, and delivered in a timely manner?
   - Was the PAD correctly and appropriately reflected?
   - Was the ECL appropriately disclosed and adequately explained?
   - When needed, were familiar landmarks and boundaries to describe protective action areas?
   - Was there a closing statement included in the messaging? If so, what was it? How was it communicated to affected and/or potentially affected populations?
3. Messaging addresses appropriate cultural and linguistic considerations.
   - Is public information required to be available in non-English languages at this location/site? If so, how were messages translated and/or provided?
   - How are those with access and/or functional needs provided with messages and actionable information?
   - Are there any cultural and/or other linguistic considerations relevant for this area? If so, what are they and how were they implemented?
4. Ensure subsequent messaging is consistent with protective actions.
   - Are all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, shelter-in-place instructions, information concerning protective actions for schools and persons with access and/or functional needs, and public inquiry hotline telephone number) to assist the public in carrying out the PADs provided?
   - Was messaging consistent with protective actions?
5. 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.).
   - How often was information on the incident progression updated?
   - What new protective action areas were identified?
   - How was invalid information rescinded?
   - How was invalid information updated to reflect any changes?
   - Was follow-up and additional messaging coordinated and delivered? How?
6. Respond to media and public inquiries.
   - Were the appropriate PIOs or subject matter experts (SMEs) available?
   - How did PIOs or SMEs gather and verify information?
   - How did PIOs or SMEs coordinate information with appropriate personnel for approval?
   - How was exchange, discussion and coordination of information among PIOs or SMEs conducted?

- Were media briefings conducted? If so, were they frequent, timely, and was information disseminated accurately?
- Were media and public inquires handled and addressed appropriately?
- Were trends and/or rumors captured and addressed in media releases?

**Post-Plume Phase**

1. Rapidly disseminate of ingestion exposure pathway information to predetermined individuals and businesses.
   - Where there any delays or reasons why messages were not timely?
2. 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.
   - What sort of information was provided to the public addressing temporary reentry into a restricted area, permanent relocation of areas not evacuated, and return to formerly restricted areas? How was the information 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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Subsequent emergency information and instructions should be provided to the public and the media in a timely manner. This will **NOT** be subject to specific time requirements. One media briefing will be demonstrated at the Commonwealth Joint Information Center (JIC) located at the CRCC and in each risk county.*<br>• *Risk counties will receive and handle "Public Inquiry" messages via their individual "Public Inquiry" processes (in compliance with NIMS terminology, Rumor Control is now considered to be "Public Inquiry"). Counties will receive approximately ten (10) public inquiry calls from the State Exercise Cell assigned this responsibility. Counties will be expected to receive and log the calls, identify any trends, and take appropriate actions to include follow-up message development, distributions and/or briefings.* |

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

**Capability Target 4.1:** Field Monitoring Teams Management *(Vice Sub-Elements: 4.a.2)*
**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:**

1. Brief FMTs on predicted plume location and direction, plume travel speed, equipment operational checks, background measurement, and exposure control procedures before deployment.
   - What instructions or assignments were given to the FMT?
   - Who briefed the FMTs prior to deployment? Was the pre-deployment briefing adequate? Did it address predicted plume location and direction, plume travel speed, and exposure/contamination control procedures before deployment?
2. Direct the FMTs to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume.
   - Who controlled the FMTs' movement and determination of sample location?
   - Were FMTs directed to locations at times sufficient to characterize the plume?
   - What approach was used to select appropriate sampling locations, pre-designated sampling points, or plume traverse (while maintaining specified exposure limits)?
   - What time were assignments completed?
   - During a HAB incident, were there provisions for the field team management to inform Incident Command of FMT activities and location? Was this activity observed?
3. Obtain peak plume measurements from FMTs.
   - Which agency's (i.e., ORO, licensee, or other) FMTs were assigned the responsibility of finding the plume edge, obtaining peak measurements in the plume, and obtaining maximum radiation readings in the downwind areas (e.g., centerline measurements)?
4. Direct FMTs to collect air samples at locations and times sufficient to characterize the plume.
   - How were locations at which to collect air samples selected?
   - Were the samples taken sufficient to characterize the plume?
5. 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.
   - How were activities and locations communicated with Incident Command during a HAB incident?
6. Coordinate and share information amongst all FMTs (licensee, Federal, state, and local).
   - Did all FMTs (i.e., licensee, Federal, and ORO) share and coordinate plume measurement information?

- Did the ORO coordinate or use any resources from other agencies, e.g., Federal, mutual aid, or compact?

7. Coordinate sample analysis from field to those responsible for assessing radiological data.
   - How was field data coordinated with dose assessors or those responsible for assessing radiological data?
8. Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data.
   - Did coordination concerning transfer of samples, including a chain-of-custody form(s), to a radiological laboratory or laboratories occur?
9. Assist with development and modification of sampling plans, as appropriate.
   - How were sampling plans developed and maintained?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Field Team Control will be performed near the 10-mile EPZ using the DEP Radiological Rapid Response Vehicle (R3V). During the exercise, the field teams will be directed by field team control to take measurements in locations to provide information sufficient to characterize the plume and impacts.*<br>• *Measurements taken can be entered into a Rad Responder event for access by BRP.*<br>• *BRP Field Teams and R3V will be evaluated for this exercise.*<br>• *FEMA evaluators will meet the field teams at the Department of Environmental Protection's South-Central Office located at 909 Elmerton Avenue, Harrisburg, PA on April 26, 2022 at 1:00 p.m. to observe instrumentation checks, equipment inventory verification, and air sampling.*<br>• *In the event the scenario has no radiological release, a report of background radiation by the FMT will signify successful demonstration of the capability target.* |

**Capability Target 4.2:** Plume Phase Measurements and Sampling *(Vice Sub-Element: 4.a.3)*
**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:**

1. Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards.
   - Did each FMT perform an operational check on each radiation survey instrument, including a source-response check which is compared to a known range of readings to confirm the instrument can properly measure radiation?

- Did each FMT obtain a background radiation measurement with each radiation survey instrument before entering the affected area?

2. Maintain inventory for emergency kits.
   - Were kits inventoried prior to deployment?
   - Did kits contain supplies and equipment sufficient to support field team operations?
3. Operate and monitor radiation survey instruments to detect changes in radiation exposure rate while moving and in stationary positions.
   - Did FMTs operate and monitor survey instruments continuously and in a way that prevented inadvertent exposure to an active plume?
4. Use appropriate contamination control and PPE.
   - Did field teams use appropriate contamination control techniques?
   - What PPE was used?
   - How was instrumentation protected from contamination?
5. Be in location(s) at the appropriate time(s) to detect and characterize the active release (plume).
   - What agencies participated as part of the FMT?
   - Were field teams moved to potential locations where the plume was predicted to pass?
6. Obtain peak plume measurements either directly or from licensee field teams.
   - Were peak plume measurements obtained? If so, from where?
7. Correctly interpret survey instrument readings to determine submersion in the active plume.
   - What exposure rate did FMTs use to determine the possible edge of the plume?
   - Did FMTs compare waist high open-window and closed-window exposure rates to determine submersion in an active plume?
   - Did FMTs take samples? What samples were taken?
   - Did field team record and report area surveys (ambient exposure rates) at multiple locations?
8. 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).
   - Was air sampling accomplished at a flow rate between 1.5 cfm and 2 cfm to maintain maximum collection efficiencies of the particulate and iodine sampling media?
   - Was the ambient exposure rate monitored to note changes during air sampling? How often was the ambient exposure rate noted (e.g., beginning, mid-sampling, end-of-sampling, or continuously monitored)?
9. Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination.
   - What methods were used to prevent sample cross-contamination?
   - How were instruments and equipment used for sample counting handled to prevent spread of contamination?
   - How was radiologically contaminated waste handled?
10. Determine an appropriate low background location to count sample media.
    - What was the background counting rate in the low background location selected to count the samples in the field?
11. Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four hours.
    - What instrument was used to count the media in the field?
    - What means were used to ensure an effective, repeatable counting geometry?

- If samples were not counted in the field, what was the dedicated transportation means that ensured samples were analyzed by the supporting laboratory within four hours?

12. Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor.
    - Were results of surveys and, if taken, field results from air samples documented? How were they transmitted?
13. Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as 10-7 µCi/cc.
    - Were the flow rate, sample volume, counting efficiencies, and appropriate calculations performed to prove the ability to detect concentrations as low as 10-7 Ci/cc?
14. Preparation of packaging, sample identification, and chain-of-custody forms ensures integrity of samples throughout transportation and transfer.
    - Was packaging and handling adequate to prevent cross-contamination?
    - Was sample identification and chain-of-custody completed to maintain integrity of the samples?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Measurements will be made by Department of Environmental Protection (DEP) Bureau of Radiological Protection (BRP), in accordance with State Radiological Annex E, Appendix 6 and the BRP Standard Implementing Procedures (IPs). Two mobile monitoring teams from BRP will demonstrate ambient radiation monitoring and radioiodine and particulate sampling. Field Teams will be equipped with appropriate dosimetry and KI. Both teams will participate. Each team will be directed to monitoring location and perform actual radiation measurements at each location. Measurements may consist of truck installed radiation monitor or hand-held radiation instruments. An actual air sample will be taken at the out of sequence demonstration prior to field team departure to PBAPS. Field teams will discuss air sample counting procedures via an interview process. Teams will then take additional simulated air samples, as directed, at additional locations, if conditions are appropriate for radioiodine sampling and relay information to the Radiological Rapid Response Vehicle (R3V). In place of silver zeolite cartridges, charcoal cartridges will be used for the exercise. All measurements will be forwarded to the R3V immediately upon obtaining data.* <br> • *BRP Field Teams and R3V will be evaluated during the plume phase exercise.* |

**Capability Target 4.3:** Post-Plume Phase Measurements and Sampling *(Vice Sub-Element: 4.b.1)*
**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:**

1. Maintain and prepare instruments, equipment, and supplies for use, including performing pre-operational checks of radiation survey instruments.
   - Did each FMT perform an operational check on each radiation survey instrument, including a source-response check which is compared to a known range of readings to confirm the instrument can properly measure radiation?
   - Did each FMT obtain a background radiation measurement with each radiation survey instrument before entering the affected area?
2. Use appropriate contamination control and PPE.
   - What sort of contamination controls and PPE was utilized?
3. Execute the sampling plan.
   - Were samples collected consistent with samples specified in the sampling plan?
4. 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.
   - Which types of samples did FMTs collect?
   - Were samples collected at the locations identified by the field team manager?
   - Did each FMT follow the appropriate procedure for collecting each type of sample?
5. Obtain and record ambient radiation measurements at each sample location and at other locations, as directed.
   - Was an ambient radiation measurement taken at each sample location?
6. Handle sample media to avoid sample cross-contamination and equipment/personnel contamination.
   - Did each FMT properly package each sample?
   - What precautions were taken to prevent cross-contamination of samples?
   - Did each FMT properly document each sample?
   - Was a chain-of-custody record created?
   - Was each sample assigned a unique identification number?
7. 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.
   - Did each FMT properly document each sample, including creating a chain-of-custody record? Was each sample assigned a unique identification number?
   - Were samples collected by the ORO at a central location (e.g. sample control point) or delivered directly to the laboratory?
   - Did sample control point personnel follow appropriate procedures for receiving samples?
   - Were chain-of-custody records properly maintained?
   - How were samples transported to the laboratory?
   - Were any samples identified as having exposure rates or contamination levels too high to be accepted by a particular laboratory? If so, what was done with those samples?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| *This sub-element will not be demonstrated during this exercise.* |

**Capability Target 4.4:** Laboratory Operations *(Vice Sub-Element: 4.c.1)*
**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:**

1. Prepare analytical equipment for use, including performing calibrations, quality control checks, and background counts, as appropriate.
   - Was the equipment used calibrated using standards traceable to the National Institute of Standards and Technology (NIST) in the appropriate geometries? Were quality control checks and background counts performed in accordance with procedures?
2. Receive and track samples, including completing chain-of-custody records.
   - Did laboratory personnel follow their procedures for receiving samples?
   - Were samples properly documented, including completing chain-of-custody records?
   - How were samples tracked throughout the analysis process?
3. 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.
   - Which types of samples (e.g., air cartridge and filter, soil, vegetation, water, milk, crops, etc.) did the laboratory have the capability to analyze? What samples were processed during the demonstration?
   - Did laboratory personnel follow their procedures for sample preparation? What measures were taken to control contamination?
4. 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.
   - Did the gamma spectroscopy systems use high-purity germanium detectors or another type? Did the software library include the radionuclides expected to be released during a nuclear power plant incident?
   - Did the laboratory have the capability to analyze samples for strontium-90? If so, how long would that analysis take? If not, did the ORO have plans in place to obtain such analysis?

- What count times were used? Were the MDLs for various radionuclides low enough to support ORO decisions?
- For food and milk samples, were the MDLs less than the FDA DILs?
- For soil samples, were the MDLs low enough to support relocation decisions?
- For drinking water samples, were MDLs lower than the EPA DRLs?
- Did the laboratory have radiation level or contamination level limits for incoming samples? If so, what happens to samples exceeding those limits?
- How many samples could the laboratory process in one day and in what order would samples be processed? Did the ORO have a method to identify priority samples?
- How would samples be stored after counting is completed? What methods would be used to prevent spoilage of perishable samples? Were storage locations shielded or located far enough away to prevent increased radiation levels near the counting equipment?

5. Provide analysis results to the appropriate organization.
   - How were counting results processed and reported to the ORO? Were results reported in appropriate units (e.g., soil sample results reported in units of activity per area, not in units of activity per weight)? Were results decay corrected to the sample collection time or to another time? Were results transmitted electronically or by hard copy?
6. 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.
   - If the laboratory would be used to count air samples during the early phase of an incident, what would be the approximate time from when a sample is collected by FMTs to when the results would be provided to the ORO?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| *This sub-element will not be evaluated during this exercise.* |

**Capability Target 4.5:** Plume Phase Analysis and Dose Assessment *(Vice Sub-Element: 2.b.1)*
**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:**

1. Obtain adequate data to make dose projections.
   - What information was used to make dose projections?
   - Did the information include information/recommendations of the licensee, release data, and meteorological data?

2. 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.
   - What modeling system was used to make dose projections?
   - Did the ORO demonstrate the capability to use other methods, such as manual calculations?
3. Compare dose projections to members of the public to EPA PAGs.
   - Did the ORO make TED and thyroid dose projections available to members of the public based on information/ recommendations of the licensee, release data, and meteorological data?
   - Did the ORO compare dose projections to EPA PAGs and make PARs?
4. 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.
   - Were differences in dose projection greater than a factor of ten discussed with the licensee? If so, were the differences resolved and considered in the PAR?
5. Make initial PARs based on recommendations of the licensee, release data, meteorological data, and other pertinent information.
   - Were initial PARs based on recommendations from the licensee, release data, meteorological data, and any other pertinent information? If not, what were the initial PARs based on?
6. Promptly communicate PARs to decision-makers.
   - How were PARs communicated to decision-makers?
   - How quickly were PARs communicated to decision-makers?
7. Receive ambient exposure rates from FMTs and compare to model projections.
   - Were ambient exposure rates received from FMTs and compared to modeled exposure rates?
8. Calculate iodine and particulate concentrations from FMT air samples.
   - Did the ORO calculate iodine and particulate concentrations from FMT air sample data?
9. Calculate plume ratios of noble gas, iodine's, and particulates, and compare to model projections.
   - Did the ORO calculate iodine and particulate concentrations from FMT air sample data?
10. Adjust PARs, as necessary, based on analysis of field data.
    - Did the ORO adjust PARs based on exposure rates measured by iodine and particulate ratios calculated from air samples collected by FMTs?
11. Calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway EPZ.
    - Did the ORO calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway EPZ?
    - Was the correction factor adjusted for emergency workers inside the plume exposure pathway EPZ based on air sample data collected by FMTs?
    - Was the incident-specific correction factor communicated to 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.

**Pennsylvania Negotiated Extent of Play:**

| None |
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**Capability Target 4.6:** Post-Plume Phase Sampling Plan Development and Analysis *(Vice Sub-Element: New)*
**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:**

1. Periodically conduct radiological assessment of public exposure.
   - What methods were used to assess public exposure and at what frequencies?
2. Estimate projected doses in contaminated areas and identify areas where projected doses exceed relocation PAGs.
   - Did the ORO calculate projected doses based on laboratory analyses of soil samples?
   - Did the ORO calculate a DRL for relocation for each area with a homogeneous radionuclide deposition mixture?
   - Were areas exceeding DRLs identified?
3. Develop and modify sampling plan to assess the radiological consequences of a release on the food and drinking water supplies.
   - How was the area of interest identified (e.g., depositions footprint)?
   - Did the ORO's assessment include an evaluation of the radiological analyses of representative samples of drinking water, food, and other ingestible substances of local interest from potentially impacted areas?
   - Did the ORO's assessment include a characterization of the releases from the facility?
   - Did the ORO's assessment include the extent of areas potentially impacted by the release?
4. 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.
   - How were the boundaries of the deposition determined?
   - If deposition boundaries were determine by projections, how were the projected areas verified (e.g., field measurements, environmental sampling)?
5. Evaluate the radiological analyses of representative samples of drinking water, food, and other ingestible substances of local interest from potentially impacted areas.
   - Were the pre-determined DILs the same as the 1998 FDA DILs? If not what, were the differences? If other than the FDA DILs were used, what rationale was given for other decision criteria?
   - What projected doses were used to recommend protective actions for food, drinking water, and persons being relocated?

6. Compare radiological impacts of analysis on food and water and other representative samples to appropriate ingestion PAGs.
   - Did the ORO demonstrate the capability to obtain sample results from the specified laboratory?
   - Were results reported in appropriate units? (e.g., were soil sample results reported in units of activity per area—not in units of activity per weight?)
   - Were results decay corrected to the sample collection time or to some other time?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| *This sub-element will not be evaluated during this exercise.* |

## OBJECTIVE 5 - Operate

**Capability Target 5.1:** Monitoring, Decontamination, Sheltering, and Registration of Evacuees *(Vice Sub-Element: 6.a.1; 6.c.1)*
**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:

1. Set-up operations.
   - Was the facility set up and operational? Did it include route markings, instrumentation, record keeping, and contamination control measures?
   - Where did monitoring, decontamination, and registration of evacuees occur?
   - How was contamination minimized within the facility? What contamination control provisions were utilized?
   - What supplies were available to set up the facility?
   - What supplies were available to prevent and control spread of contamination?
   - What personal protective supplies were available?
2. Operationally check instruments and equipment.
   - What types of monitoring instruments and equipment were available?
   - Were the instruments current in calibration?
   - Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
   - Was an appropriate radioactive check source used to verify proper operational response for each low-range radiation measurement instrument?
   - Were background readings taken?
   - How were background radiation levels established?

### Monitoring

1. 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.
   - What is the total population, including transients, of the plume exposure pathway EPZ? What is 20 percent of that figure (the estimate of needed monitoring capability)?
   - What was the time for monitoring sequences for the first six simulated evacuees, per monitoring team (determine percentage)?
   - Were evacuees monitored using hand-held survey instruments or portal monitors?

- If portal monitors were used, was a body survey made after triggering the portal monitor using hand-held instrument to locate, quantify, and isolate the exact location of the contamination?
- Where were portal monitors used?
- Was a minimum of six simulated evacuees and one-third of the equipment (at that facility) demonstrated?
- Was the monitoring sequences for these simulated evacuees timed by the evaluators to determine whether the monitoring productivity rate per hour can be met?
- Was the facility able to maintain the rate to monitor 20 percent?
- Based on the demonstration, was the facility able to monitor 20 percent of anticipated evacuees within 12 hours? At this rate, is the facility going to meet the 20 percent goal?

2. Monitor evacuees, service animals, pets, vehicles, and possessions.
   - Was there an adequate number of personnel available to perform monitoring of vehicles and evacuees?
   - What are the provisions for monitoring service animals and pets?
   - What were the provisions for individuals who had completed monitoring (and decontamination, if needed)?
   - What means were used to indicate that evacuees, and their service animals, pets, possessions, and vehicles, have been monitored, cleared, and found to have no contamination or contamination below the trigger/action level indicated (e.g., hand stamp, sticker, bracelet, form, etc.)?
3. Utilize trigger/action levels for determining the need for decontamination.
   - Did monitoring personnel use trigger/action levels to determine the need for decontamination?
   - What trigger or action levels were identified?

### Decontamination

1. Decontaminate evacuees, and personal belongings, while limiting the spread of contamination.
   - What provisions were in place to ensure privacy?
   - What is the process for providing modesty garments to evacuees?
   - How was decontamination conducted for small areas of contamination?
   - How were contaminated individuals separated from non-contaminated individuals?
   - How are contaminated clothing and other personal belongings handled?
   - What contamination control procedures were utilized?
   - Were provisions made to collect contaminated waste and to prevent it from increasing the background radiation levels near portal monitors and survey equipment?
   - What is the process to indicate that an individual has been monitored and, if necessary, decontaminated (e.g., hand stamp, sticker, bracelet, form, etc.)?
2. Follow-up with any evacuee(s) who cannot be appropriately decontaminated for assessment; ensure the capability to provide evacuee-referrals.
   - What procedures were used if evacuees could not be adequately decontaminated?
   - What was the follow-up and associated assessment process for those evacuees who could not appropriately be decontaminated?

### Vehicles

1. Monitor and decontaminate vehicles.
   - How are vehicles monitored? Were the following monitored: air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles?
   - What procedures were demonstrated for vehicle monitoring?
   - Was at least one vehicle monitored?
   - Was there adequate space for the expected number of vehicles (space must be observed by evaluator)?
   - How are vehicles decontaminated?
   - What contamination control procedures were utilized?
2. Provide adequate, separate space for both contaminated and non-contaminated vehicles.
   - Was there appropriate space for vehicle parking of both contaminated and non-contaminated vehicles?
   - How were non-contaminated vehicles separated from contaminated or not-yet-monitored vehicles?
3. Monitor emergency worker personnel and their equipment and vehicles for contamination.
   - Was there adequate space for evacuee vehicles at the facility?
   - Were there an adequate number of personnel trained to operate monitoring equipment at the facility?
   - What provisions were in place to ensure privacy?
4. Decontaminate evacuee vehicles based on trigger/action levels.
   - What is the action level for determining the need for decontamination of vehicles?
   - What process is used to decontaminate vehicles?
   - What was done when an evacuee's vehicle could not be successfully decontaminated?

### Sheltering and Congregate Care

1. Coordinate for incoming evacuees who have been monitored and, if necessary, decontaminated.
   - How was coordination amongst and between congregate care facilities/mass care for those evacuees that have already been monitored and, if necessary, decontaminated?
   - What identifier was used for those evacuees (and where applicable, service animals, pets, and vehicles) who had been monitored, decontaminated as appropriate, and registered?
2. Establish shelter operations.
   - What is the process for determining if evacuees, service animals, and pets had been monitored for contamination, decontaminated as appropriate, and registered before entering the facility?
   - Did the staff check for arriving individual's confirmation of monitoring/decontamination?
   - Did the ORO appropriately plan for the population expected at this location?
3. Congregate care centers and operations in host/support jurisdictions are sufficient to support the expected number of evacuees.
   - What agency (or agencies) is responsible for managing the congregate care center?
   - What is the capacity of the congregate care center?
   - What resources were available for evacuees (real or simulated) arriving at the congregate care center?

### Registration

1. Register evacuees.
   - What is the process to register evacuees after they have completed the monitoring and decontamination process?
   - Did the record contain the individual's name, address, results of monitoring, and time of any decontamination needed?
   - What organization(s) registered evacuees upon completion of monitoring and decontamination?
   - What is the process for registering evacuees?
   - Was a registration record established for each individual?
2. Ensure the registration area is clean and controlled.
   - Was the access to the clean registration area controlled adequately? How?

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.

| **Pennsylvania Negotiated Extent of Play:** |
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| • *Radiological monitoring demonstration sites should possess a roster of the monitored personnel/population, as well as, providing a means by which mass care or others could verify that the person has been monitored and has been deemed free of contamination. The Radiological Monitoring station(s) should be prepared to monitor 20 percent of the risk population within a 12-hour period as allocated to that location. Reception Centers, Monitoring and Decontaminations Centers, and/or Mass Care centers may or may not be collocated.*<br>• ***At each <u>reception center (stand-alone – non-mon/decon activity sites)</u>*** *a minimum of three volunteer evacuees will be processed, briefed, issued the appropriate strip map or directions, and instructed to proceed to a mass care center designated for demonstration of monitoring, decontamination, and registration. A sample of the appropriate strip maps or directions will be made available for the demonstration. <u>Note: Co-located facilities do not require strip maps or written directions.</u>*<br>• *One mass care center and one public monitoring/decontamination center will be demonstrated per risk or support county during the out-of-sequence window. These counties will provide space for operation of monitoring/decontamination centers. Schematics of these monitoring/decontamination centers will be available to show the organization within the facility and space management for monitoring and decontamination. Procedures will be demonstrated to evidence the separation of contaminated and non-contaminated (clean) individuals.*<br>• ***At the evacuee monitoring/decontamination center,*** *a minimum of six (6) volunteer evacuees will be monitored (or one volunteer evacuee may be monitored six times). Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). Those individuals found to be free of "contamination", based upon scenario injects, will be directed to the mass care registration point for further processing.* ***Note:*** *Actual radiological sources will not be attached to or hidden upon* |

*the volunteer evacuees, but sources may be used by operators to verify proper equipment calibration.* ***Note:*** *If portal monitors are used, the Portal Monitor Extent-of-Play described below shall be used.*

- *One of the simulated evacuees, based upon controller injects, will not be able to be decontaminated. Discussions concerning the processing of contaminated personnel will include capabilities and written procedures for showering females separate from males (separate facilities may or may not be used). Showers will be set up but showering will be simulated, water will not be used.*
- *Evaluated locations will demonstrate the following areas: Staff briefing (including radiological briefing and issuing of dosimetry as appropriate), direction and control of staff and evacuees, operational check of one piece of each type of radiological detection equipment, operation of the portal monitor (if so equipped), operation of hand held radiological scanning device and recording of findings (vehicle and people), set up of signage/traffic control/personnel control devices, and having evacuees traverse the appropriate paths (clean or dirty). Other activities will be described by interview as evacuees or vehicles follow the clean or dirty paths. Evaluated locations will show supplies of personnel protective gear, contamination control materials (plastic/paper runners, etc.), modesty garments, containment devices (trash cans, liners, etc.), items for contamination removal (tape, HEPA vacuum, wet wipes, soap, car wash brushes, etc. as required per procedures), and other equipment/supplies as required. Plans, procedures, and set up maps will be on site for evaluator review. Demonstration should include documentation of persons or vehicles and marking methods for decontaminated people or items.*
- *Monitoring/decontamination centers are not issued DRDs or KI since the centers and stations are outside the EPZ. Category "C" Dosimetry applies. Permanent Record Dosimeters (PRD's) shall be simulated.*
- *Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads. Long runs of plastic covered with paper will not be demonstrated, but the materials shall be available and explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.*
- *Participants should be able to describe how vehicles are identified for radiological screening and plans or layouts should show the locations and movements of vehicles. Public vehicles may be quarantined and not decontaminated.*
- *Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment.*
- *Portal Monitor Use: Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and/or emergency workers. The monitoring/decontamination team requirements will be based on the portal monitor capabilities as applicable based on the procedure/guidelines, and the recommendations of the manufacturer.* ***Note:*** *PEMA guidance shall apply. Note that most Portal Monitors are verified to be calibrated by an operator passing through the Portal*

*Monitor with a radioactive source at head, mid, and ankle heights. For locations utilizing multiple portal monitors only one working portal monitor needs to be demonstrated.*

- *Each location will provide a site plan with layout and equipment list. 1/3 of equipment will be demonstrated.*
- *Each county with mass care centers will demonstrate the operation of one mass care center during the out-of-sequence window. Floor plans with flow diagrams of the mass care centers will be available to show organization within the facility and space management during a real emergency. Mass care center locations are listed in the demonstration tables "Demonstration of Mass Care Centers (Attachment A, Section I.B.4)".*
- *Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The evaluator will expect to see sources and quantities of equipment and supplies, as well as* ***a staffing chart by job title for 24-hour staffing****. Necessary signs, directional arrows and forms will be available and used to demonstrate registration of least three evacuees requiring emergency housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators.*

**Capability Target 5.2:** Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles *(Vice Sub-Element: 6.b.1*)
**Core Capabilities:** Operational Coordination; Environmental Response/Health and Safety; Planning
**Recommended Evaluation Frequencies:** Biennially
**Recommended Assessment Activities:** Exercise; Drill
**Planning Reference:** NUREG-0654/FEMA-REP-1, Rev. 2 (K.4 and O.1)
**Intent:** The capability to implement radiological monitoring and decontamination of emergency workers, equipment, and vehicles.

**Demonstration and Evaluation Guidance:**

1. Set-up operations.
   - Where will monitoring and decontamination of emergency workers occur?
   - Where will emergency workers' equipment be monitored and decontaminated?
   - Was the facility set up and operational? Did it include route markings, instrumentation, record keeping, and contamination control measures?
   - What supplies were available to set up the facility?
   - What supplies were available to prevent and control spread of contamination?
   - What personal protective supplies were available?
   - How was contamination minimized within the facility?
   - What contamination control provisions were utilized?
2. Operationally check instruments and equipment.
   - Were the instruments current in calibration?

- Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
- Was an appropriate radioactive check source used to verify proper operational response for each low-range radiation measurement instrument?
- Were background readings taken?
- How were background radiation levels established?

3. Monitor emergency worker personnel and their equipment and vehicles for contamination.
   - Was there adequate space for emergency workers at the facility?
   - Were there an adequate number of personnel trained to operate monitoring equipment at the facility?
   - During vehicle monitoring, were the following monitored: air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles?
   - What provisions were in place to ensure privacy?
4. Decontaminate emergency worker personnel and their equipment and vehicles based on trigger/action levels.
   - What is the action level for determining the need for decontamination of personnel, equipment, and vehicles?
   - What process is used to decontaminate personnel, equipment, and vehicles?
   - How was decontamination conducted for small areas of contamination?
   - What was done when an emergency worker could not be successfully decontaminated?
5. Control the spread of contamination.
   - What procedures are used to minimize contamination within the facility?
   - How are contaminated emergency workers separated from non-contaminated emergency workers?
   - How are contaminated clothing and other personal belongings addressed? Will clean clothing be provided to emergency workers?
   - Were contamination control procedures, including storage of contaminated clothing and possessions followed?
6. Create and maintain a record of monitoring and decontaminating workers upon completion of monitoring and decontamination activities.
   - Was a record of monitoring and decontamination (if necessary) kept for each emergency worker?
7. Process for prioritizing emergency workers and equipment before the public in facilities where the public and emergency workers are both processed for contamination.
   - What is the 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.

**Pennsylvania Negotiated Extent of Play:**

- *At the emergency worker monitoring/decontamination stations schematics of these monitoring/decontamination stations will be available to show organization and space management. One emergency worker will be monitored. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males (separate facilities may or may not be used). Showering will be simulated; water will not be used. Suitable radiological monitoring instruments will be issued to the initial monitoring team.* ***Note:*** *If portal monitors are used, the Portal Monitor Extent-of-Play described below shall be used.*
- *Emergency worker station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. The evaluator will request the vehicle monitoring and decontamination procedures and that vehicle decontamination procedures be explained after the vehicle (with simulated contamination) has been monitored. One radiological survey meter will be issued to each vehicle monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package and injected by a controller. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place.*
- *Evaluated locations will demonstrate the following areas: Staff briefing (including radiological briefing and issuing of dosimetry as appropriate), direction and control of staff and evacuees, operational check of one piece of each type of radiological detection equipment, operation of the portal monitor (if so equipped), operation of hand held radiological scanning device and recording of findings (vehicle and people), set up of signage/traffic control/personnel control devices, and having evacuees traverse the appropriate paths (clean or dirty). Other activities will be described by interview as evacuees or vehicles follow the clean or dirty paths. Evaluated locations will show supplies of personnel protective gear, contamination control materials (plastic/paper runners, etc.), modesty garments, containment devices (trash cans, liners, etc.), items for contamination removal (tape, HEPA vacuum, wet wipes, soap, car wash brushes, etc. as required per procedures), and other equipment/supplies as required. Plans, procedures, and set up maps will be on site for evaluator review. Demonstration should include documentation of persons or vehicles and marking methods for decontaminated people or items.*
- *Decontamination capabilities and provisions for vehicles and/or equipment that cannot be decontaminated will be simulated and conducted by interview. Water will NOT be used.*
- *Radiation readings/contamination data for the emergency worker and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads. Long runs of plastic covered with paper will not be demonstrated, but the materials shall be available and*

*explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.*

- *Portal Monitor Use: Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated emergency workers. The monitoring/decontamination team requirements will be based on the portal monitor capabilities as applicable based on the procedure/guidelines, and the recommendations of the manufacturer.* ***Note:*** *PEMA guidance shall apply. Note that most Portal Monitors are verified to be calibrated by an operator passing through the Portal Monitor with a radioactive source at head, mid, and ankle heights. For locations utilizing multiple portal monitors only one working portal monitor needs to be demonstrated.*
- *Emergency Worker monitoring and decontamination station personnel are not issued DRDs or KI since the centers and stations are outside the EPZ. Category "C" Dosimetry applies. Permanent Record Dosimeters (PRD's) shall be simulated.*
- *Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment.*

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

**Demonstration and Evaluation Guidance:**

**Transportation**

1. Transport contaminated, injured individuals to medical facilities.
   - Who dispatched the medical transport provider and what information was provided?
   - Did the appropriate briefings occur? What was contained in the briefings?
   - Which agency or agencies demonstrated the transportation of contaminated, injured individuals to appropriate medical facilities?
   - What type of vehicle was used for the transportation of the contaminated, injured individuals?
   - Was the site of pick-up in a potentially contaminated area? If so, what precautions were taken?

- How did the medical transport provider know to take radiological precautions with the contaminated, injured individual?
- Was the contaminated, injured individual monitored for radiological contamination before arrival or during initial evaluation by the transport provider?
- Who did the monitoring?
- What survey instruments were used?
- Were the instruments current in calibration?
- Did medical care take priority over monitoring?
- Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
- What contamination control measures were taken by the medical transport crew?
- How was the patient transferred from the medical transport vehicle to the medical facility?
- Were accident scene survey records transferred to the medical facility staff? Was the transfer made taking care not to spread contamination?
- Was the medical transport crew knowledgeable about where the medical transport vehicle (or other transport vehicle) and crew would be monitored and decontaminated?
- Where and by whom will the medical transport crew and medical transport vehicle (or other transport vehicle) be monitored and decontaminated, if required?

2. Maintain communications between the medical transportation provider and the receiving medical facility.
   - What communications occurred between the medical transport crew and the receiving hospital? How?

### Medical Facility

1. Operationally check instruments and equipment.
   - How were background measurements obtained on a continuous basis?
   - What survey instruments were used?
   - Were the instruments current in calibration?
   - Were instruments and equipment operationally checked using an appropriate check source against a known range of reading to verify proper operation?
   - Was an appropriate radioactive check source used to verify proper operational response for each low-range radiation measurement instrument?
   - Did the receiving facility personnel don the appropriate PPE in accordance with procedures and in a manner to prevent the spread of contamination?
2. Set-up, activate, and operate an REA.
   - How was the hospital notified to establish a REA? With regard to the REA, what information was provided to the medical facility by the medical transport crew?
   - Were staff, equipment, and supplies readily available for monitoring and decontamination, and setting up the REA?
   - How was access into the REA controlled?
   - Did urgent medical care take precedence over monitoring, decontamination, and contamination control efforts by facility medical staff?
   - Who performed and/or supervised treatment of contaminated, injured individuals?
   - What equipment and supplies were available for treatment of contaminated, injured individuals?

- How were items assured to be free of contamination before they were transferred out of the REA to the clean area?
- After treatment and decontamination, how was the individual transferred out of the REA?
- How did the staff exit the REA?
- Was a doffing procedure correctly implemented?
- Was the REA, and equipment within, monitored for contamination prior to returning it to normal operations?

3. Monitor and decontaminate the individual, equipment, and other items.
   - How were monitoring (i.e., survey measurements and samples) results documented and recorded?
   - Did the medical staff make decisions on the need for decontamination of the individual and follow appropriate decontamination procedures?
   - What contamination threshold triggers the need for decontamination of the individual?
   - What methods were used to decontaminate the potentially contaminated individual (once that person is medically stabilized)? Were decontamination methods progressive (e.g., mild decontamination used prior to scrubbing)?
   - What procedure was used if decontamination was not successful?
   - What methods were used to collect and analyze samples, including swabs and skin wipes?
   - Who did the monitoring? What equipment was used?
   - What records were maintained with regard to survey and decontamination?
   - What was the procedure for handling, decontaminating, and storage of contaminated items?
   - What was the action level to determine if equipment was contaminated or not?
   - Who decontaminated the equipment and other items?
   - How was waste water from decontamination operations handled?
   - What contamination control measures were taken?

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

| **Pennsylvania Negotiated Extent of Play:** |
| --- |
| • *EMS units operating outside of the EPZ are not required to have dosimetry, KI, or attend radiological briefings.*<br>• *NOTE: This sub-element evaluated at Ephrata Community Hospital on November 9, 2021 and York Hospital on June 10, 2021.* |

**Capability Target 5.4:** Traffic and Access Control *(Vice Sub-Element: 3.d.1; 3.d.2)*
**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:**

1. Select, establish, and staff appropriate TCP/ACPs, consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation), in a timely manner.
   - Were there pre-identified TCPs/ACPs in the plan?
   - What was the basis for determining the location of TCPs/ACPs (e.g., evacuation of area, danger in area, etc.)?
   - At what ECL were TCPs/ACPs established?
   - Who was responsible for establishing traffic routes and/or TCPs/ACPs?
   - Who deployed TCP/ACP personnel to the assigned location?
   - Were necessary resources available when needed?
   - Were there any gaps identified between the TCP/ACP resources needed and the resources available? If so, what alternate resource providers were identified and resources provided?
   - Were TCPs/ACPs identified, staffed, and established in timely manner?
2. 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.
   - Did the TCP/ACP staff receive an emergency worker briefing? If so, what did the briefing include?
   - When PADs expanded into the affected area, were TAC personnel relocated?
   - Were instructions provided to TCP/ACP staff on the modification of PADs?
   - Were TCP/ACP personnel able to provide the following information:
     - Location of TCPs/ACPs.
     - Location of reception/registration centers.
     - Location of emergency worker monitoring and decontamination center.
     - Equipment available (e.g., cones) to establish TCPs/ACPs.
     - The means used to verify emergency worker identification and access.
     - Their roles and responsibilities.
   - What plans/procedures were in place for verifying emergency worker identification and access authorization?
3. Contact the state or Federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic).
   - Who notified which agency for control of water, rail, and air traffic?
   - Were times and ECLs documented when rail, water, and air traffic access control were notified by the ORO?

- What actions were requested? How were actions coordinated?

4. Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes.
   - Were there impediments to evacuation? If so, where did the impediment occur on the evacuation route? Was the impediment on the evacuation route left in place for the remainder of the demonstration or was it removed?
   - Were appropriate actions for impediments that affected evacuation routes identified?
   - How were the resources to remove impediments to evacuation identified and coordinated? Was this done in a timely manner? What organizations assisted in impediment removal?
5. 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.
   - What key decision-makers were involved in the coordinated effort to re-route traffic?
   - Who made the decision to re-route traffic?
   - What coordination occurred among various OROs, such as local law enforcement, state law enforcement, National Guard, and/or state and/or local transportation departments?
   - What coordination occurred to alert the public of the need to take an alternate route?
   - How and when was the public alerted to take an alternate route?
   - Were decisions made in coordination with all agencies (both internal and external) involved?
   - Was the messaging coordinated and consistent?
6. Establish procedures to control access to and monitor people and vehicles from the evacuated and restricted areas.
   - How did the ORO determine location of ACPs?
   - How was the area identified (e.g., ropes, fences, gates, etc.)?
   - What did the ORO do to control access to the restricted areas?
   - Which agencies have the responsibility to establish procedures to control access to evacuated and restricted areas?
7. Authorize reentry of individuals into the restricted areas.
   - What was the process to approve individuals to reenter the restricted areas?
   - How were individuals authorized to reenter the restricted areas?
   - What provisions were made to determine and control their exposure?
   - How were these individuals tracked to ensure they returned out of the restricted areas?
8. Establish exit procedures.
   - How were individuals, vehicles, and equipment monitored?
   - What was the decision-making guidance for decontamination?
   - What was the disposition of dosimeters, maintenance of the reentry radiation exposure records of dosimetry, and maintenance of emergency worker radiation exposure records?

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.

| **Pennsylvania Negotiated Extent of Play:** |
| --- |
| • *Municipal traffic and access control will be demonstrated by interview at the applicable EOC of jurisdiction. The traffic/access control personnel will not be deployed to the* |

*traffic/access control point(s). If the designated assignment is a location within the EPZ, a radiological briefing will be provided to the assigned individuals.*

- *Reception Centers shall provide a traffic control plan for the location being evaluated.*
- *County EOCs will demonstrate the ability to identify and take appropriate actions concerning impediments to evacuation by inject or interview. Actual dispatch of resources to deal with impediments, such as tow trucks, need not be demonstrated; however, simulated contacts will be logged. If the scenario does not lead to evacuation the criteria shall be deemed complete if the ORO can describe to the evaluator the actions they would take to overcome a major traffic impediment during an evacuation and how such actions would be communicated to the public and affected OROs. (Risk counties only)*
- *Municipal EOCs have limited actions to evacuation impediments. They advise county of the impediment, take appropriate immediate actions, and participate in resolution as part of the county response and / or traffic detour.*
- *Post Plume capabilities will not be evaluated during this exercise.*

| **ATTACHMENT A**<br>2022 Peach Bottom Atomic Power Station Exercise<br>Extent of Play Demonstration Tables | | |
|---|---|---|
| **PLUME PHASE EXERCISE**<br>April 26, 2020 – 4:00 p.m. to 10:00 p.m. | | |
| **1. COUNTY EOCS**<br>• Chester<br>• Lancaster<br>• York | | |
| **2. MUNICIPAL EOCS**<br>• Chester County<br>• Lancaster County<br><br><br><br><br><br>• York County | West Nottingham Township<br>Drumore Township<br>Fulton Township<br>Little Britain Township<br>Martic Township<br>Solenco Regional (East Drumore Township / Providence Township / Quarryville Borough)<br>Delta / Peach Bottom Township<br>Fawn Grove Township / Fawn Borough<br>Lower Chanceford Township | |
| **3. BACK-UP ROUTE ALERTING**<br>• Chester County<br>• Lancaster County<br>• York County | West Nottingham Township<br>Fulton Township<br>Delta / Peach Bottom Township | |
| Back -up route alerting will be demonstrated in one municipality in each risk county. | | |
| **4. MUNICIPAL / REGIONAL TCP/ACP UNITS**<br>• Chester County | West Nottingham Township | Union Fire Company Station 21 |

**5. BUREAU OF RADIATION PROTECTION**

- Field Teams will demonstrate instrument checks, and equipment inventory verification, and air sampling on April 26, 2022 at 1:00 p.m. at the Department of Environmental Protection office at 909 Elmerton Avenue Harrisburg, PA 17010.
- Field Teams will deploy from the above location to an advance location determined based on atmospheric conditions. FEMA evaluators may ride along with the field teams from the office location or from the advance location.

| OUT OF SEQUENCE EXERCISES | |
|---|---|
| **RECEPTION CENTERS**<br>March 30, 2022 – 7:00 p.m. to 9:30 p.m. | |
| • Chester County | Octorara Middle School |
| • Lancaster County | Lampeter-Strausburg School Complex |
| • York County | Southern School Complex (demonstrated at York County Office of Emergency Management) |
| **EMERGENCY WORKER MONITORING AND DECONTAMINATION STATION**<br>March 30, 2022 – 7:00 p.m. to 9:30 p.m. | |
| • Chester County | Penns Grove Middle School |
| • York County | Southern York EMS (Brogue Station) |
| **EMERGENCY WORKER MONITORING AND DECONTAMINATION STATION**<br>TBD. | |
| • Lancaster County | Lampeter-Strausburg School Complex (Field House) |
| **PUBLIC MONITORING AND DECONTAMINATION CENTER**<br>March 30, 2022 – 7:00 p.m. to 9:30 p.m. | |
| • Chester County | Octorara Middle School |
| • Lancaster County | Lanpeter-Strausburg School Complex |
| • York County | Southern School Complex (demonstrated at York County Office of Emergency Management) |

| | | |
|---|---|---|
| **MASS CARE CENTERS**<br>March 30, 2022 – 10:00 a.m. to 11:00 a.m. | | |
| • Chester County | Octorara High School | |
| **MASS CARE CENTERS**<br>April 27, 2022 – 10:00 a.m. to 11:00 a.m. | | |
| • York County | York 4-H Center | |
| **MASS CARE CENTERS**<br>April 27, 2022 – 6:00 p.m. to 7:00 p.m. | | |
| • Lancaster County | Manheim High School (Note main gym is viewable but not available for the exercise. Alternate gym will be used for setup) | |
| **MASS CARE CENTERS - WALKDOWN**<br>TENTATIVE MAY 17 | | |
| • Lancaster County | Penn Manor High School | |
| • Lancaster County | Manheim Township School Complex | |
| • Lancaster County | Hempfield Senior High School | |
| • Lancaster County | Manor Middle School | |
| • Lancaster County | Garden Spot High / Middle Complex | |
| • York County | Spring Grove High and Intermediate Complex | |
| • York County | Spring Grove Middle School | |
| • York County | Dallastown High and Middle Complex | |
| **SCHOOL DISTRICTS**<br>March 29, 2022 – 9:00 a.m. to 11:00 a.m. | | |
| **FEMA EVALUATED SCHOOLS** | | |
| • Lancaster County | Penn Manor | Penn Manor High School |
| • Lancaster County | Solanco | Swift Middle School |
| • Lancaster County | Solanco | Quarryville Elementary School |
| • York County | South Eastern | South Eastern Middle School |
| • York County | South Eastern | Fawn Elementary School |
| **PEMA EVALUATED SCHOOLS** | | |
| • Chester County | Oxford | Jordon Bank Elementary |
| • Chester County | Oxford | Nottingham Elementary School |
| • York County | Red Lion | Red Lion Junior High School |
| • York County | Red Lion | Pleasant View Elementary |
| Redemonstrating Schools<br>TBD | | |
| • Lancaster County | Penn Manor | Martic Elementary School |
| **PENNSYLVANIA STATE POLICE – ACP / TCP**<br>April 27, 2022 – 10:00 a.m. to 12:00 a.m. | | |

- Lancaster Barracks

# APPENDIX C: PARTICIPATING AGENCIES AND SITE MAPS

See PEMA Extent of Play in Appendix B.

# APPENDIX D: DIRECTIONS/ADDRESSES

See Action Location Addresses Document provided by the Utility.

# APPENDIX E: OPEN ISSUES

## No Open Issues

| Issue Number | Capability Target | Location | Assessment Date | Brief Description |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

# APPENDIX F: ACRONYMS

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

| | |
|---|---|
| DAD | Digital Alarming Dosimetry |
| DAS | Director of Auxillary Services |
| DCPM | Disintegrating Counts Per Minute |
| DDHS | U.S. Department of Health and Human Services |
| DEMA | Delaware Emergency Management Agency |
| DHS | U.S. Department of Homeland Security |
| DIL | Derived Intervention Level |
| DIR | Disaster Initiated Review |
| DOE | U.S. Department of Energy |
| DOT | U.S. Department of Transportation |
| DRD | Direct Reading Dosimeter |
| DRF | Dosimetry Record Form |
| DRL | Derived Response Level |
| DSP | Delaware State Police |
| EA | Exception Area |
| EA | Exclusion Area |
| EA | External Affairs |
| EAC | Evacuation Assembly Center |
| EAL | Emergency Action Level |
| EARA | Exception Area Route Alerting |
| EAS | Emergency Alert System |
| EC | Emergency Coordinator |
| EEG | Exercise Evaluation Guide |
| ECL | Emergency Classification Level |
| ECO | Exposure Control Officer |
| EDE | Effective Dose Equivalent |
| EMC | Emergency Management Coordinator |
| EMD | Emergency Management Director |
| EMnet | Emergency Management Network |
| EMS | Emergency Medical Services |
| ENS | Emergency Notification System |
| EOC | Emergency Operations Center |
| EOF | Emergency Operations Facility |
| EOP | Extent of Play |
| EPA | U.S. Environmental Protection Agency |
| EPT | Exercise Planning Team |
| EPZ | Emergency Planning Zone |
| ER | Emergency Room |
| ERDS | Emergency Response Data System |
| ERM | Emergency Response Manager |
| ERO | Emergency Response Organization |
| ERV | Emergency Response Vehicle |
| ESC | Emergency Services Coordinator |
| ESF | Emergency Support Function |

| | |
|---|---|
| ESP | Early Site Permit |
| ETA | Estimated Time of Arrival |
| ETE | Evacuation Time Estimate |
| EW | Emergency Workers |
| EWMDS | Emergency Worker Monitoring and Decontamination Station |
| ExPlan | Exercise Plan |
| FBI | Federal Bureau of Investigation |
| FCC | U.S. Federal Communications Commission |
| FD | Fire Department |
| FDA | U.S. Food and Drug Administration |
| FE | Functional Exerise |
| FEMA | Federal Emergency Management Agency |
| FMT | Field Monitoring Team |
| FPE | Full Participation Exercise |
| FPM | Final Planning Meeting |
| FRMAC | Federal Radiological Monitoring Assessment Center |
| FRPCC | Federal Radiological Preparedness Coordinating Committee |
| FSE | Full Scale Exercise |
| FST | Field Sampling Team |
| FTC | Field Team Coordinator |
| GE | General Emergency |
| GIS | Geographic Information Systems |
| GM | Guidance Memorandum |
| G-M | Geiger-Mueller |
| GPS | Global Positioning System |
| Gy | Gray |
| HAB | Hostile Action Based |
| HAN | Health Alert Network |
| HHS | U.S. Health and Human Services |
| HazMat | Hazardous Materials |
| HF | High Frequency |
| HP | Health Physicist |
| HSEEP | Homeland Security Exercise and Evaluation Program |
| HSPD | Homeland Security Presidential Directive |
| IC | Incident Commander |
| ICP | Incident Command Post |
| ICS | Incident Command System |
| IP | Improvement Plan |
| IPAWS | Integrated Public Alert and Warning System |

| | |
|---|---|
| IPM | Initial Planning Meeting |
| IPZ | Ingestion Pathway Zone |
| IWP | Initial Warning Point |
| JIC | Joint Information Center |
| JIS | Joint Information System |
| KI | Potassium Iodide |
| LCD | Liquid Crystal Display |
| LEOF | Local Emergency Operations Facility |
| LGS | Limerick Generating Station |
| LHD | Local Health Department |
| LOA | Letter of Agreement |
| MCC | Mass Care Center |
| MDDT | Mobile Data Display Terminal |
| MDE | Maryland Department of Environment |
| MDEM | Maryland Department of Emergency Management |
| MDT | Mobile Data Terminals |
| MJOC | Media Joint Operations Center |
| MHz | Megahertz |
| MIDAS | Meteorological Information Dose Assessment System |
| MOU | Memorandum of Understanding |
| MS-1 | Medical Services Hospital |
| MSEL | Master Scenario Events List |
| MSP | Maryland State Police |
| NAPS | North Anna Power Station |
| NAWAS | National Warning System |
| NEP | National Exercise Program |
| NGO | Non-Governmental Organization |
| NIMS | National Incident Management System |
| NNSA | National Nuclear Security Administration |
| NOAA | National Oceanic and Atmospheric Administration |
| NPD | National Preparedness Directorate |
| NOUE | Notification of Unusual Event |
| NPP | Nuclear Power Plant |
| NPS | National Preparedness System |
| NRC | U.S. Nuclear Regulatory Commission |
| NRIA | Nuclear Radiological Incident Annex |
| NUREG | Nuclear Regulatory |
| NWS | National Weather Service |
| OCA | Owner Controlled Area |
| OJT | On-The-Job Training |
| OOS | Out of Sequence |
| ORH | Office of Radiological Health |
| ORO | Offsite Response Organization |

| | |
|---|---|
| OSC | Operations Support Center |
| OSD | Optically Stimulated Dosimeter |
| OSHA | U.S. Occupational Safety and Health Administration |
| OSLD | Optically Stimulated Luminescence Dosimeter |
| PA | Public Affairs |
| PAD | Protective Action Decision |
| PAG | Protective Action Guideline |
| PAR | Protective Action Recommendation |
| PARA | Primary Area Route Alerting |
| PAZ | Protective Action Zone |
| PCA | Preliminary Capabilities Assessment |
| PBAPS | Peach Bottom Atomic Powers Station |
| PD | Police Department |
| PDAFN | Persons with Disabilities/Access and Funtional Needs |
| PED | Personal Electronic Dosimeter |
| PEMA | Pennsylvania Emergency Management Agency |
| PII | Personally Identifiable Information |
| PIO | Public Information Officer |
| PPD | Presidential Policy Directive |
| PPE | Personal Protective Equipment |
| PPP | Post-Plume Phase |
| PRA | Primary Route Alerting |
| PRD | Permanent Record Dosimeter |
| PS | Planning Standard |
| PSP | Pennsylvania State Police |
| R | Roentgen |
| RA | Regional Administrator |
| R/h | Roentgen per hour |
| RAC | Regional Assistance Committee |
| RACES | Radio Amateur Civil Emergency Services |
| RAD | Radiation Absorbed Dose |
| RAO | Radiation Assessment Officer |
| RC | Reception Center or Relocation Center |
| RDO | Radiation Defense Officer |
| REA | Radiation Emergency Area |
| REC | Radiation Exposure Control |
| REM | Roentgen Equivalent Man (rem) |
| REP | Radiological Emergency Plan |
| REPP | Radiological Emergency Preparedness Program |
| RERP | Radiological Emergency Response Plan |
| RHP | Radiological Health Program |
| RML | Radiological Mobile Laboratory |

| | |
|---|---|
| RO | Radiological Officer |
| ROO | Radiological Operations Officer |
| RPM | Radiological Emergency Preparedness Program Manual |
| RSO | Radiation Safety Oficer |
| RTF | Radiological Task Force |
| SA | Staging Area |
| SAC | Staging Area Coordinator |
| SAE | Site Area Emergency |
| SAIC | Science Applications International Corporation |
| SAM | Staging Area Manager |
| SAV | Staff Assistance Visit |
| SCBA | Self-Contained Breathing Apparatus |
| SEOC | State Emergency Operations Center |
| SERS | State Emergency Radio System |
| SEVAN | State Emergency Voice Activation Network |
| SFMT | State Field Monitoring Team |
| SHC | Salem Hope Creek |
| SIP | Shelter In Place |
| SIRS | Statewide Interoperability Radio System |
| SME | Subject Matter Expert |
| SO | State Official |
| SOP | Standard Operating Procedure |
| SPS | Surry Power Station |
| SRO | School Resources Officer |
| SSES | Susquehanna Steam Electric Station |
| SSO | Social Services Officer |
| STARS | Statewide Area Radio System |
| SPS | Surry Power Station |
| Sv | Sievert (sv) |
| SWAN | State Warning Alert Notification |
| TAC | Technical Assistance Center |
| TACP | Traffic and Access Control Point |
| TCP | Traffic Control Point |
| TED | Total Effective Dose (whole body dose) |
| TEDE | Total Effective Dose Equivalent |
| TEP | Training and Exercise Plan |
| TEPW | Training and Exercise Planning Workshop |
| THD | Technological Hazards Division |
| THIRA | Threat and Hazard Identification and Risk Assessment |
| TLD | Thermoluminescent Dosimeter |
| TMI | Three Mile Island |
| TO | Transportation Officer |

| | |
|---|---|
| TSC | Technical Support Center |
| TTD/TTY | Telecommunication Device for the Deaf/TeleType |
| TTX | Tabletop Exercise |
| UEM | Utility Emergency Manager |
| USDA | U.S. Department of Agriculture |
| UTL | Universal Task List |
| VDEM | Virginia Department of Emergency Management |
| VDH | Virginia Department of Health |
| VDOT | Virginia Department of Transportation |
| VEOC | Virginia Emergency Operations Center |
| VERT | Virginia Emergency Response Team |
| VEST | Virginia Emergency Support Team |
| VHF | Very High Frequency |
| VMS | Variable Message Sign |
| VSP | Virginia State Police |
| VOAD | Voluntary Organizations Active in Disaster |
| VOIP | Voice Over Internet Protocol |
| WEA | Wireless Emergency Alerts |
| WVDEP | West Virginia Department of Environmental Protection |
| WVDHHR | West Virginia Department of Health and Human Resources |
| WVDHSEM | West Virginia Division of Homeland Security and Emergency Management |
| WVSP | West Virginia State Police |

pennsylvania EMERGENCY MANAGEMENT AGENCY

FEMA

# PEACH BOTTOM PLUME EXERCISE

By signing this Extent of Play Agreement, the Commonwealth of Pennsylvania and the FEMA Region III exercise planning team confirm that all conditions have been met to satisfy the requirements to drive exercise play and satisfy the Demonstration Criteria as agreed upon for the April 26,2022 Peach Bottom Plume Exercise.

TAYLOR S GRIFFITHS Digitally signed by TAYLOR S GRIFFITHS Date: 2022.04.22 14:07:18 -04'00'

FEMA Site Specialist — April 22, 2022 Date

Lead State Planner — 4/25/22 Date

JOSEPH A SUDERS Digitally signed by JOSEPH A SUDERS Date: 2022.04.25 17:17:03 -04'00'

FEMA Team Leader — Date

# State of Maryland

# 2022 Peach Bottom Atomic Power Station Full Participation Exercise Plan

## April 2022 – FINAL

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# PREFACE

The Peach Bottom Evaluated Exercise (PBEX) is sponsored by Constellation Energy. 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 Radiological Emergency Preparedness (REP) exercise design and development process will include establishing an EPT led by the state(s) (or designee), with representatives from the licensee, offsite response organization (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 (NPP) 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 PBEX 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 the Controller Handbook will be treated as a restricted document intended for Controllers. This is done to prevent compromise on exercise activities.

All exercise participants will 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 the Department of Homeland Security (DHS) and the EPT.

# HANDLING INSTRUCTIONS

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 Maryland Department of Emergency Management (MDEM) is prohibited.

At a minimum, materials will be disseminated only on a need-to-know basis. When unattended, they will be stored in an area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure. For further information, please consult the following Points of Contact (POCs):

Table 1 Points of Contacts

| Points of Contacts | Name | Email | Cell Phone |
|---|---|---|---|
| **Federal Points of Contact** | | | |
| FEMA Region III Emergency Management Specialist | Taylor Griffiths | Taylor.Griffiths@FEMA.DHS.Gov | [202] 735-6823 |
| FEMA Region III Senior Technological Hazards Specialist | Joseph Suders | Joseph.Suders@FEMA.DHS.Gov | [215] 478-2925 |
| **State of Maryland Points of Contact** | | | |
| Senior Technological Hazards Preparedness Specialist | Marci Catlett | Marci.Catlett@Maryland.Gov | [443] 379-7891 |
| Technological Hazards Preparedness Specialist | Conor Glynn | Conor.Glynn@Maryland.Gov | [443] 381-4050 |
| **Offsite Response Organization (ORO) Points of Contact** | | | |
| Lead EP Specialist Constellation Energy Group | Sara Schmidt | Sara.Schmidt@Constellation.com | [443] 945-2826 |
| **Local Jurisdictions Points of Contact** | | | |
| Harford County Emergency Preparedness and Planning Branch Manager | Linda Ploener | LjPloener@Harfordpublicsafety.Org | [410] 808-6986 |
| Cecil County Department of Emergency Services Planner | Ashleigh Bothwell | Ashleigh.Bothwell@CCDPS.Org | [443] 945-2826 |

# CHAPTER 1: GENERAL INFORMATION

## Introduction

The Peach Bottom Plume Exercise (PBEX) 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 (NPP) 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 Technological Hazards Unit with the input, advice, and assistance of the Exercise Planning Team (EPT). The Peach Bottom Plume Exercise is evidence of the growing partnership between State and Local Jurisdictions for response to the threats our Nation and communities.

## Confidentiality

PBEX 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 is not a restricted document but is for use for Exercise participants only. The Controller Handbook is a restricted document intended for Controllers only. The Controller Handbook contains the site-specific scenario information, including the injects and Out of Sequence (OOS) exercise materials designed to drive exercise play. It must be treated as confidential to avoid compromising exercise activities and is limited to use by the 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 MDEM 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 (NPP)-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 2019 Radiological Emergency Preparedness (REP) Program Manual to develop this exercise.

The objective of the MDEM is to demonstrate reasonable assurance that our citizens can be protected during a NPP emergency.

The objective of the PBEX 2022 Dress Rehearsal is to demonstrate reasonable assurance that Local and State Emergency managers and Responders can protect the public during a NPP emergency. This ExPlan is developed solely for Harford and Cecil Counties, Maryland Department of the Environment (MDE), MDEM, and our other Maryland State Agency Partners to use.

## 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 Maryland's 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.

Table 2 Capability Targets

| Capability Target Number | Capability Target |
|---|---|
| Capability Target 1.1 | Mobilization |
| Capability Target 1.2 | Direction and Control |
| Capability Target 1.3 | Protective Action Recommendations (PAR) |
| Capability Target 1.4 | Protective Action Decisions (PAD) 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 4.6 | 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 Control: Appropriate traffic and access control is established. |

## 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 one (1), Level two (2), or Planning Issues as a result of the last FEMA-evaluated plume-phase exercise at the Maryland Department of the Emergency Management in September of 2021 for the Calvert Cliffs Full Scale Exercise (CALVEX).

This exercise will take place at various State and local Emergency Operations Centers (EOCs). The MDEM will begin improvements and a total renovation to our offices and the State Emergency Operations Center (SEOC) starting in Late March of 2022 and continuing through 2024. The entire MDEM staff will vacate the building and will either telework or occupy temporary office space as needed. To prepare for this temporary move, the SEOC staff will implement the MDEM Continuity of Operations Plan (COOP) to relocate the SEOC for the PBEX Full Participation Exercise to the MDE Accident Assessment Center (AAC). The MDE AAC houses the Electronic Offsite Notification System (EONS) and the Emergency Network (EMnet) System and contains the same hardware and software equipment used in the Maryland Department of Emergency Management's SEOC and Maryland Joint Operations Center (MJOC) for a radiological incident. Using MDE's space is beneficial because the entire MDE AAC Team and their decision makers are present. The MDE AAC was evaluated by FEMA in 2019, so it will not need to be evaluated again.
The MJOC will not be in the Maryland Department of Emergency Management's facility for this exercise and will be relocating to a yet to be determined facility in April. All the 2019 REP Program computer software and hardware, including the EONS and the EMnet, will travel to the temporary relocation COOP site.

# CHAPTER 2: EXERCISE LOGISTICS

## Exercise Summary

### General

The Peach Bottom Plume Exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at an NPP. The Peach Bottom Plume Exercise will be conducted on April 26th, 2022. Exercise play is scheduled for four (4) hours or until the MDEM determines that the exercise objectives have been met at each venue.

### Assumptions

In any exercise, assumptions and artificialities may be necessary to complete play in the time allotted. During this exercise, the following apply:

- 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.
- There is no hidden agenda.
- There are no trick questions.
- Only communication methods listed in the Communications Directory are available for players to use during the exercise.
- The exercise is conducted in an environment wherein capabilities, plans, systems, and processes will be evaluated.
- Exercise communication and coordination is limited to participating exercise organizations, venues, and the Simulation Cell (SimCell).

### 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:

- The Public Inquiry SimCell will be staged at the MDE AAC. They will call the Local Jurisdictions and the Maryland Public Inquiry phone numbers acting as concerned citizens to ensure that Public Information Group (PIO) Groups are able to identity trends in public questions regarding the radiological incident.
- Out-of-Sequence play is authorized based on prior approval.
- Certain simulations are allowed based on prior approval.

- All siren sounding will be simulated during the exercise.
- Any siren failures included in the exercise will be artificial.
- Any road impediments included in the exercise will be artificial and used to demonstrate certain exercise objectives.

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.

- **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.
- **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. 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 Master Scenario Events List (MSEL).
- **Lead Controller:** The Lead Controller is responsible for the overall organization of the Peach Bottom Plume Exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller debriefs the Controllers after the exercise and oversees the setup and takedown of the exercise.

- **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:** SimCell Participants 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 MSEL. All simulators are ultimately accountable to the Exercise Director and/or the Lead Controller.

- **Lead Evaluator:** The Lead Evaluator is responsible for the overall evaluation of the Peach Bottom Plume Exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Extent of Play. The Lead Evaluator debriefs the Evaluators after the exercise and oversees the entire evaluation and After-Action process.

- **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 Homeland Security and Exercise and Evaluation (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.
- **Observers:** Observers for this exercise will be MDEM employees, who will be shadowing certain participants in the exercise. Observers will view selected segments or all of the exercise. Observers do not play in the exercise, and do not perform any control or evaluation functions.

## Exercise Tools

### Controller Handbook

The Peach Bottom Plume Exercise Controller Handbook is designed to help exercise Controllers conduct an effective exercise. This Handbook also enables Controllers to

understand their roles and responsibilities in exercise execution. Should a Player, Observer, or media representative find an unattended Controller Handbook, it should be delivered to the nearest Controller.

**Extent-of-Play Agreement (EOPA)**

The EOPA 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 EOPA 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 EOPA for each Capability Target are in Appendix B and will provide reliable information for developing the assessment activity and ensure appropriate evaluation.

**Master Scenario Events List (MSEL)**

The MSEL outlines benchmarks, as well as injects that drive exercise play. It also details realistic input to the exercise players as well as information expected to emanate from simulated organizations (i.e., those nonparticipating organizations, agencies, and individuals who would usually respond to the situation). An inject will include several items of information, such as inject time, intended recipient, responsible Controller, inject type, a short description of the event, and the expected player action. To avoid compromise to exercise play, the MSEL will not be provided to exercise players.

## Exercise Implementation

**Exercise Play**

Exercise play will begin at the utility at 1600hrs. The ORO's will not receive a notification until the plant reaches an Alert Emergency Classification Level (ECL). Once the EONS for the Alert ECL is sent to the ORO's, the exercise will begin for the Local Jurisdictions, MDE, the MJOC, MDEM Staff, State Agency SEOC Representatives and the SEOC. The exercise will proceed according to the events outlined in the MSEL, in accordance with established plans and procedures. Even though the exercise may have ended on the plant, the ORO portion will not end until completion of operations and attainment of the exercise objectives as determined by the MDEM Controllers and FEMA Evaluators at the AAC and in the EOCs. The exercise will end with a notification from the plant to the MDEM Lead Controller. The Lead Controller will notify the other Controllers that the exercise has concluded via a group chat.

# Safety Requirements

### General

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

- 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.

### Exercise Setup

Exercise setup involves the pre-staging and dispersal of exercise materials, including registration materials, documentation, signage, and other equipment as appropriate. The local EOCs may set up their facilities and equipment prior to the exercise.

### Accident Reporting and Real Emergencies

- Anyone who observes a participant who is seriously ill or injured will immediately notify emergency services and the closest Controller. They can render aid if necessary.
- Any Controller who is made aware of a real emergency will notify all Controllers of the emergency via phone. They will provide the following information to the Lead Controller:
    - Venue/function
    - Location within the venue/function
    - Condition
    - Requirements
- If the nature of the emergency requires a suspension of the exercise at the venue/function, all exercise activities at that facility will immediately cease as per the Controller. 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.

# Site Access

### Directions

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

### Exercise Identification

All SEOC Exercise Participants exercise personnel will gain access into the parking lot of MDE via the gate, which will be opened from inside the AAC. MDEM Observers will

assist by escorting SEOC Exercise Participants into the AAC. The Local EOC representatives will pre-stage outside their local EOCs and gain access into the building by local exercise personnel upon arrival.

## Communications Plan

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

### Player Communication

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, text messaging, emailing, and face-to-face conversations. A list of key telephone and email addresses will be available as a Staffing List before the start of the exercise. Players will use their routine, in-place agency communication systems. Additional communication assets may be made available as the exercise progresses.

### Player Briefing

Controllers may be required to read specific exercise details to the participants during 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. The Player briefing for the in-sequence components was completed on February 2nd, 2022, and the out-of-sequence Controller briefing will occur prior to April 27TH, 2022.

### Public Affairs

This exercise enables Players to demonstrate an increased readiness to deal with a NPP incident. Any NPP 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 of a story as possible while ensuring they do not compromise the exercise realism, safety, or objectives. FEMA will provide a Press Release to the Offsite Response Organization (ORO's) to disseminate out to their citizens and the media about the exercise.

# CHAPTER 3: PLAYER GUIDELINES

## Player Instructions

### Before the Exercise

- Review the appropriate emergency plans, procedures, and exercise support documents.
- Arrive 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 this ExPlan, which includes information on exercise safety.
- Please sign in electronically or on the physical sign-in sheet.
- Respond to the scenario using your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from your training.
- Identification of issues is not as valuable as suggestions and recommended actions that could improve resource management efforts. Problem-solving efforts should be the focus.
- Exercise players will comply with real-world emergency procedures, unless otherwise directed by the control staff.

### During the Exercise

All communications (including written, telephone, and e-mail) during the exercise will begin and end with the statement "**THIS IS AN EXERCISE"**

Respond to the exercise events and information as if the emergency were real, unless otherwise directed by an exercise Controller.

- Controllers can only provide 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.
- The practice of consulting REP Plans is a real-world solution to problems. When Players are asked a question, they do not know the answer to, they do not have to provide a quick response. Rather, they can inform the Evaluator that they will check the State Fixed Nuclear Facility (FNF) Plan or the Local Emergency Plans to provide an answer.
- Parts of the scenario may seem implausible. Recognize that the exercise has objectives to satisfy and may require the incorporation of unrealistic aspects.

**Note:** Every effort has been made by the trusted agents to balance realism with safety and the creation of an effective learning and evaluation environment.

- The SimCell will need to identify themselves as a concerned citizen when calling both State and Local PIO Groups.
- Verbalize aloud to the Evaluator 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**

- After the Exercise at your facility, participate in the brief critique with the Controllers and Evaluators.
- Participants will enter their feedback and comments into the After-Action Review (AAR) section of WebEOC. The EPT and Analysts will review the comments as part of the AAR process.

# CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

## 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 thirty (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 Regional Assistance Committee (RAC) Chair may combine the participant briefing with the public meeting at his or her discretion. The Post Participants Briefing will be conducted virtually via a phone call on April 29th, 2022, at 0900hrs. The Public Meeting will be conducted on April 29th, 2022, at 1030hrs.

## 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 thirty (30) days and finalized no more than ninety (90) days after the assessment activity is conducted.

## Exercise Documentation

The goal of the Peach Bottom Plume Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential NPP 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. Such examples of documents collected after the Exercise will be the EONS forms, State Support Plans, Incident Briefings, Emergency Alert System (EAS) messaging, email correspondence, and the Protective Action Decision (PAD) forms.

## Exercise Evaluation Guides

FEMA recommends that REP exercise planners utilize Exercise Evaluation Guides (EEGs). These EEGs are designed to maintain the integrity of the REP Objectives/Capability Targets and to ensure provision of useful information that support the creation and maintenance of OROs' core capabilities. The FEMA REP Program EEG templates will be available for download from the Prep Toolkit once the

system is updated to accommodate the revised Part III of the 2019 Radiological Preparedness Manual (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.

## Improvement Plan

The Improvement Plan (IP) is an outcome of the evaluation report. The IP contains information on how OROs will correct or improve Level one (1) Findings, Level (2) Findings, and Plan Issues, who is responsible, and an anticipated timeline for correction/improvement. As FEMA documents each Level one (1) Finding, Level two (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 an After-Action Meeting (AAM) held by FEMA, 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 two (2) Findings, or Plan Issues identified by FEMA are met. FEMA will discuss their findings and the IP after the Exercise to all Participants.

# APPENDIX A: EXERCISE SCHEDULE

Table 3 Peach Bottom Plume Exercise Schedule In-Sequence

| Date/Time | Personnel | Activity |
|---|---|---|
| 4/26/2022 at 1600hrs. | MDEM SEOC Personnel at MDE | Full Participation Exercise |
| 4/26/2022 at 1600hrs. | Cecil County EOC | Full Participation Exercise |
| 4/26/2022 at 1600hrs. | Harford County EOC | Full Participation Exercise |
| 4/26/2022 at 1600hrs. | MJOC Staff at Maryland State Highway Administration (SHA) | Full Participation Exercise |
| 4/26/2022 at 1600hrs. | MDEM PIO Group at MDE | Press Briefings, Public Messaging |
| 4/26/2022 at 1600hrs. | MDE's AAC | Full Participation Exercise; Dose Assessment |
| 4/26/2022 at 1600hrs. | Field Monitoring Teams (FMTs) (One in Harford; One in Cecil) | Air Sampling, Operations Checks, Dose Collection |
| 4/26/2022 at a Site Area Emergency (SAE) | Cecil County Route Alerting Personnel | Route Alerting from Water Witch Fire Company |
| 4/26/2022 at a SAE | Harford County Route Alerting Personnel | Route Alerting from EOC |
| 4/26/2022 at a SAE | Cecil County Emergency Worker Brief | Safety Briefing, Potassium Iodide (KI) Instructions, Emergency Worker Kits |
| 4/26/2022 at an SAE | Harford County Emergency Worker Brief | Safety Briefing, KI Instructions, Emergency Worker Kits |
| 4/26/2022 at 1600hrs. | Cecil County PIO Group | Public Messaging |
| 4/26/2022 at 1600hrs. | Harford County PIO Group | EAS Messaging |
| 4/26/2022 at an SAE & General Emergency (GE) | Cecil County Public Inquiry/Rumor Control | Public Inquiry Phone Station |
| 4/26/2022 at a SAE & GE | Harford County Public Inquiry/Rumor Control | Public Inquiry Phone Station |
| 4/26/2022 at 1600hrs. | Cecil County EOC Directors/Control Rooms | Full Participation Exercise; Direction and Control |
| 4/26/2022 at 1600hrs. | Harford County EOC Directors/Control Rooms | Full Participation Exercise; Direction and Control; Protective Action Decision-Making |
| 4/26/2022 at 2100hrs. | All Exercise Personnel | End of Exercise (ENDEX) |

Table 4 PBEX Out-of-Sequence Schedule

| Harford County | | |
|---|---|---|
| **Date/Time** | **Activity** | **Personnel** |
| 4/27/2022 at 0830hrs. | Risk School Evaluation at:<br>• North Harford Elementary School<br>• North Harford Middle School<br>• North Harford High School | • School Nurse<br>• School Principal<br>• Facilities Personnel<br>• Bus Driver |
| 4/27/2022 at 1900hrs. | Harford County Community Reception Center (CRC) at Fallston High School:<br>• Monitoring and Decontamination of Citizens and Emergency Workers<br>• Monitoring and Decontamination of an Emergency Worker Vehicle | • CRC Staff<br>• CRC Controllers<br>• Emergency Workers<br>• An Emergency worker Vehicle |
| 4/27/2022 at 1900hrs. | Harford County Mass Care at:<br>• Patterson Mill High School | • Mass Care Staff |
| **Cecil County** | | |
| **Date/Time** | **Activity** | **Personnel** |
| 4/27/2022 at 0830hrs. | Risk School Evaluation at:<br>• Conowingo Elementary School | • Cecil County School Nurse<br>• School Principal<br>• Facilities Personnel<br>• Bus Driver |
| 4/27/2022 at 1900hrs. | Cecil County Citizen Monitoring and Decontamination, and Sheltering, at:<br>• Rising Sun High School | • Cecil County CRC Staff<br>• CRC Controllers<br>• Mass Care Staff<br>• Mass Care Controllers |
| 4/27/2022 at 1900hrs. | Cecil County Decontamination of Emergency Workers and one Vehicle at:<br>• Perryville High School | • Emergency Worker Monitoring and Decontamination Staff<br>• Emergency Worker Monitoring and Decontamination Controllers |
| **MDE AAC FMT** | | |
| **Date/Time (Tentative)** | **Activity** | **Personnel** |
| 4/27/2022 at 1300hrs. | At the MDE AAC:<br>• Equipment Checks, Calibrations, and air sampling demonstration<br>• Emergency Worker Brief<br>• Discussing PPE<br>• Distribution of Emergency worker Kits | • Field Monitoring Teams<br>• AAC Staff |

# APPENDIX B: METHOD OF OPERATION AND EXTENT OF PLAY

## OBJECTIVE 1 – Emergency Operations Management

**Capability Target 1.1:** Mobilization *(Vice Sub-Element 1.a.1)*
**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:**

5. Alert, notify, and mobilize key personnel, to include a twenty-four (24) hour staffing roster, and activate facilities in a timely manner.
6. Receive and verify notifications.
7. Identify and request additional resources, as needed.
8. 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.

| State of Maryland Negotiated Extent of Play: |
|---|
| • Players and Controllers will pre-stage at various locations to reduce the amount of travel time to the respective Emergency Operations Centers (EOCs).<br>• Pre-staging within the facility is permitted, however EOCs will not initiate activation until notification to mobilize and respond has been received.<br>• The MJOC staff will receive the EONS form and email copies to the PIO Group, the Executive Liaison, SEOC Commander, Planning Section and Operations Section Chiefs.<br>• The MJOC will perform a content check via an EMnet phone call with the plant and the Local Jurisdictions.<br>• The MJOC will create a WebEOC event for all the State Coordinating Functions (SCFs), Local Jurisdictions, and MDEM Staff.<br>• The MJOC will upload a copy of the EONS form onto WebEOC. This will enable all participants to have access to the documents. |

- The MJOC will notify the State Duty Officer (DO) and the MDEM Director on Call (DoC), Executive Director, Deputy Executive Director, Chief of Staff, Executive Staff, Liaison Officer, and the PIO.
- The DO will instruct the MJOC to send out the alert of the incident and raise the State Activation Level (SAL).
- The MJOC will send out an Everbridge message to all the risk Jurisdictions, MDEM staff, SCFs, the Governor's office, and others on the SEOC activation list.
- If possible, FEMA Evaluators will be added to the EverBridge System.
- Upon receipt of the notification messages pre staged SEOC staff will report to the SEOC at the MDE AAC from the staging areas.
- The MJOC will provide the "Bridge Line" phone number to the Local Jurisdictions, and the SCF decision makers.
- PEMA will provide the phone number for the State-to-State Bridge line (Maryland and Pennsylvania) to the MJOC, will then provide the information to the SEOC Commander.
- The MJOC and SEOC participants can discuss back up conference call platforms with the FEMA Evaluator.
- The MJOC will not be in the Maryland Department of Emergency Management's facility for this exercise. They will be relocating to the SHA State Operations Center (SOC), the designated Continuation of Operations (COOP) alternative facility.
- The following MDEM Staff SEOC Positions and State Agencies will be in Person at the MDE AAC. These are:
    - SEOC Commander/Duty Office
    - Executive Liaison.
    - Executive Director
    - Executive Administrative Assistant
    - Joint Information Center (JIC) Manager
    - PIO
    - PIO Assistant
    - Operations Section Chief (OSC)
    - Planning Section Chief (PSC)
    - Liaison Unit Leader
    - AAR Analyst
    - Rumor Control SimCell
    - MDE
    - MDEM
    - Maryland Department of Health (MDH)
    - Maryland Department of Natural Resources (DNR)

- Maryland Department of Agriculture (MDA)
- Maryland Department of Transportation (MDOT)
- Maryland State Police (MDSP)
- United States Coast Guard Sector Maryland-NCR (USCG)
- The Maryland Institute for Emergency Medical Services Systems (MIEMSS)

- The Following MDEM SEOC staff positions and State Agencies will be activated virtually:
  - Deputy PSC
  - Situation Unit Leader
  - Geographic Information Systems (GIS) Officer
  - Resource & Logistics Section Chief
  - Deputy Resource & Logistics Section Chief
  - Finance & Admin Section Chief
  - The Maryland Department of Human Services (MDHS)
  - Maryland Department of Disability (MDOD)
  - Maryland Department of Education (MSDE)
  - Maryland Department of General Services (DGS)
  - Maryland Energy Administration (MEA)
  - Maryland Military Department (MMD)
  - The American Red Cross (ARC)
  - The Maryland Department of Panning (MDP)
  - The Public Service Commission (PSC)
  - The Department of Homeland Security- Cybersecurity and Infrastructure Security Agency (DHS-CISA)
- The Operations Section Chief will provide a designated Google Meet to the virtual SCF's, which will be created after all representatives have received the "Activation" message and all in-person representatives are present in the SEOC. There will also be an open Google Chat to maintain situational awareness.
- The information for the SCF Google Meet will be sent via email to our State Partners.
- The Planning Section Chief will open a Google Chat and maintain contact with the virtually activated SEOC General Staff.
- A MDEM Liaison Officer (LO) will be in person at the Cecil and Harford County EOCs.
- The SEOC Commander will maintain contact with the MJOC via Google Chat.
- MDEM will not deploy any staff to the Emergency Operations Facility (EOF) in Coatesville.
- The MDEM PIO Group will establish contact with the EOF JIC.

- The MDEM Planning Section and the Local Jurisdictions will provide the FEMA Evaluators with a twenty-four (24) hour staffing roster.
- Twenty-four (24) hour staffing rosters will be available for the FMTs.
- The MDE will also receive notification of an incident from the plant via the EONS.
- FMTs will receive an email and phone call from the AAC to report to the AAC for their emergency worker briefings and equipment.
- The MJOC and Local Jurisdictions will provide FEMA Evaluators with all electronic notification records.

Locations Evaluated

- MDEM SEOC at the MDE AAC
- State AAC (MDE)
- MDEM JIC (MDE)
- MJOC at the SHA SOC

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

The Local Jurisdictions may set-up their EOCs prior to the exercise.

Local Jurisdiction EOC staff can stage outside of the EOC or designated staging area.

The Local Jurisdictions will use their own notification systems to notify their staff of the exercise incident.

Once they receive the notification of the incident, they can enter the EOC.

The Local Jurisdictions will receive the EONS notification and electronic form from the Plant.

The Local Jurisdictions will participate on the EMnet phone call from the plant.

Local Jurisdictions that wish to have a hybrid staff will also create a designated phone line for those staff not physically located in their EOC.

All Local staff, virtual and in-person, will log onto WebEOC once the EOC has been operationalized.

Local Jurisdictions will call into both the State to State Bridge Line (MDEM and PEMA), and the Bridge Line with Maryland.

The Local Jurisdictions will provide FEMA Evaluators with electronic notification records.

The Local Jurisdictions will provide FEMA Evaluators with twenty-four (24) hour staffing rosters.

The Local Jurisdictions OOS demonstrations will not include the notification process. However, personnel will describe their notification and mobilization process.

Locations Evaluated

Cecil County EOC

| |
|---|
| Harford County EOC |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 1.2:** Direction and Control *(Vice Sub-Element 1.b.1, 1.c.1, 1.e.1)*
**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:**

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

| State of Maryland Negotiated Extent of Play: |
|---|
| All activities associated with direction and control will be performed based on the OROs plans and procedures and completed as they would be in an actual emergency.<br>The MJOC and the DO will follow the MDEM radiological incident checklist to direct the exercise after operationalizing the SEOC at the MDE AAC.<br>The Duty Officer will make the decision to raise the SAL and activate the SEOC. They will then notify the Advance Team Leader to staff the SEOC.<br>The MJOC will create a WebEOC event for the incident.<br>The SEOC Commander will conduct an initial "All Staff Brief" to provide an overview on what is known about the incident.<br>The Planning Section Chief will set the Operational Tempo and set a timeline for all meetings and briefings that will take place.<br>An initial Command Briefing will take place between all the Command Staff to maintain situational awareness.<br>The Operations Section Chief will have a Google Meet open with all virtual SCFs to maintain open communication with our virtual supporting State Agencies.<br>The Planning Section Chief and SEOC Commander will craft the Executive Order (EO) from the template in WebEOC and email a copy over to the Executive Liaison to be send to the Governors Officer to sign. |

Once the EO is signed, an announcement will be made by the SEOC Command Staff and the document will be uploaded to WebEOC and provided to PEMA.

All in-person SCF's will be co-located with the SEOC Commander at the SEOC at the MDE AAC and will support the Protective Action Decision (PAD).

Local Jurisdictions and PEMA will be on the open Bridge Line throughout the exercise for discussions, the PAD, and to maintain situational awareness.

The Resource Section Chief will be tracking all resource requests on our WebEOC Resource Dashboard.

MDE's AAC has all the necessary hardware and software capabilities to support mobilization and operationalization for all radiological incidents.

Locations Evaluated

MDEM SEOC at the MDE AAC

State AAC (MDE)

MDEM JIC (MDE)

MJOC at the SHA SOC

**Risk Jurisdictions Negotiated Extent of Play:**

All activities associated with direction and control will be performed based on the ORO's plans and procedures and completed, as they would be in an actual emergency.

The Emergency Management directors will notify their County Executives and recall staff.

Staff will utilize position specific checklists to guide behavior during exercise. These playbooks will guide players through their roles and responsibilities during the exercise.

Local Emergency Managers will brief their EOC representatives.

The Local Jurisdictions will have their County Executive sign a local Emergency Declaration from their template on WebEOC.

One signed an announcement will be made in their respective EOCs, and the document will be uploaded to WebEOC.

Local decision-makers will then call into the MDEM and PEMA Bridge Line and open WebEOC to the event that is created by the MJOC.

Locations Evaluated

Cecil County EOC

Harford County EOC

**Support Jurisdictions Negotiated Extent of Play:**

N/A

**Outstanding Issues:**

N/A

**Capability Target 1.3:** Protective Action Recommendations *(Vice Sub-Element 2.b.1; 3.e.1)*
**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

5. Select and implement pre-planned precautionary protective actions.
6. 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.
7. Develop Protective Action Recommendations (PARs).
8. Transmit PARs in a timely manner.
9. Transmit PARs in a timely manner. Who, by title/position and organization, transmitted each PAR to the decision makers.

Post Plume

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

| State of Maryland Negotiated Extent of Play: |
|---|
| • All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency.<br>• All activities are based on the plant conditions and information generated from the MDE AAC, FMTs and the EOF.<br>• PARs and PADs will be based on the 2017 Environmental Protective Agency (EPA) Protective Actions Guidelines (PAGs).<br>• Preplanned precautionary protective actions are listed on our State PAD forms. These precautionary measures will be discussed at a SAE and GE ECL.<br>• PAR discussions for the State begin at a SAE ECL prior to Peach Bottom Atomic Power Station (PBAPS) issuing a PAR for the States and their Local Jurisdictions. |

- MDEM will establish a primary conference Line (The MDEM Conference Bridge Line) with the risk counties, MDE, MDH, and other decision-making SCF's to discuss the PARs and to decide on the PADs.
- The State-to-State Bridge Line, and the Maryland to Local Jurisdictions Bridge Line, will remain open throughout the incident to discuss any PARs as the need arises.
- Maryland, as a proactive State, will begin with PAR discussions at a SAE ECL, even without a specific PAR from PBAPS.
- If the plant issues a PAR at an SAE, Maryland will discuss this information with both the Local Jurisdictions, stakeholders, and PEMA.
- If the plant does not issue a PAR at an SAE, Maryland will read the ECL and EAL from the EONS form over the Bridge Line so that PAR discussions can begin at both the State and Local level.
- PEMA will hold their PAR to PAD discussions initially on the State to State Bridge Line and then Maryland will take that PAD information onto the Maryland Bridge Line to form the Maryland PAD.
- The MDEM Executive Liaison or Lead MDE Health Physicist will lead the PAR to PAD process by utilizing the MDEM Bridge Line checklist.
- Maryland will then discuss State-level recommendations over the Bridge Line and gain concurrence with the Local Jurisdictions to form the PAD.
- PEMA will invite MDEM to Pennsylvania's Senior State Official call as part of the PAR process between both states.
- Relocating Risk Schools to Host Schools is an early Protective Action that Maryland considers, as it frees up the Local Jurisdictions buses to evacuate the general population at a GE.
- There are no post-plume/ingestion graded criteria for this exercise.

Locations Evaluated:

- MDEM SEOC at the MDE AAC
- State AAC (MDE)

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

- The Local Jurisdictions will be on both Bridge Lines, the State to State Bridge Line and the Maryland to Local Jurisdiction Bridge Line for the PARs and PADs.
- The Local Jurisdictions will play an active role in the PAR to PAD discussions.
- Maryland as a proactive State will begin with PAR to PAD discussions at a SAE ECL, even without a specific PAR from the PBAPS.
- The Local Jurisdictions may decide on different PAD than what the Decision-Makers for the State have recommended since Maryland is a Home Rule State.
    - If the Local Jurisdictions do not accept the State PAD they are still required to provide reasonable assurance that their populations will be protected.
- The Local Jurisdictions will receive electronic versions of the PAD forms from MDE so that the EAS messaging can follow the PAD.

Locations Evaluated:

- Cecil County EOC
- Harford County EOC

**Support Jurisdictions Negotiated Extent of Play:**

N/A

**Outstanding Issues:**

N/A

**Capability Target 1.4:** Protective Action Decisions for the Plume Phase *(Vice Sub-Element 2.b.2; 2.c.1)*
**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:**

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

State of Maryland Negotiated Extent of Play:

- All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.
- PAR discussions leading to a PAD for Maryland will begin at a SAE prior to PBAPS issuing a PAR for the States and Local Jurisdictions.
- MDE is the lead decision-making State Agency in PADs.
- The decision makers on the Bridge Line will review and verbalize information regarding plant conditions, wind direction, weather conditions, and field data from the FMTs.
- MDEM will use the Maryland Bridge Line with the risk counties, MDE, MDH, and other decision-making SCFs to discuss the PARs and to decide on the PADs.
    - These State Agencies and Local Jurisdictions will coordinate together and arrive at a decision on the PAD based on all available information. This includes plant conditions, as described by the Emergency Action Level (EAL) and ECL given, and information generated from the MDE AAC, FMTs and EOF.
- The decision makers will decide on the following PADs, which are listed on the PAD Form, for a SAE during the PAR to PAD call:
    - Shelter livestock, companion animals & poultry and place them on stored feed and water from zero (0) to ten (10) miles radius from PBAPS.
    - Emergency workers ingest KI.

  - Relocate risk schools to host schools that are located outside the ten (10)-mile Emergency Planning Zone (EPZ).
  - Restrict Marine Zones and waterways in certain zones.
  - Close all or certain parks, marinas, and other recreation areas.
- The decision makers will decide on the following PADs, which are listed on the PAD Form, for a GE during the PAR to PAD call:
  - Public within certain Evacuation Zones will either shelter-in-place or evacuate.
  - Public within certain Evacuation Zones will ingest their KI.
  - Shelter livestock, companion animals and poultry, place on stored feed and water, up to fifty (50) miles from the plant.
  - Emergency workers ingest KI (If not already ordered to do so).
  - Restrict airspace, ten (10)-mile radius of plant (up to 10,000 feet).
  - Restrict Rail.
- The decision making SCFs, along with Harford County, and Cecil County on the Maryland Bridge Line will transition to the PEMA Bridge Line to decide on the simultaneously timing for the simulated "sounding of the sirens" and the timing to disseminate the EAS message.
- Harford, Cecil, and PEMA will all simulate sounding their own sirens.
- Additional PAR and PAD discussions will occur with a change in an ECL or an airborne release under an SAE and GE.
- The PAD will be communicated to the in-person and virtual SEOC staff, the Local Jurisdictions, and PEMA.
- Local Jurisdictions will be responsible for communicating these protective actions to their citizens including those with disabilities and access and functional needs.
- The MDE Lead will enter the PAD decisions onto the electronic PAD form, and then distribute via email to the:
  - SEOC Commander
  - The Executive Liaison
  - PSC
  - OSC
  - The MDEM PIO Group
  - The SCFs
  - Executive Liaison's Administrative Assistant.
  - The Emergency Managers from Harford and Cecil County.
  - PEMA
  - The FEMA Evaluator.

- Additionally, the PAD form will then be uploaded to WebEOC by the Executive Liaison's Administrative Assistant.
- Harford County will use the information from the PAD Form to craft the EAS message.

Locations Evaluated:

- MDEM SEOC at the MDE AAC
- State AAC (MDE)
- MDEM JIC (MDE)

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

- PAR discussions leading to a PAD for Maryland begin at a SAE ECL prior to PBAPS issuing a PAR for Maryland and Local Jurisdictions.
- Local Jurisdictions will be responsible for communicating these protective actions to their citizens including those with disabilities and access and functional needs
- Populations at risk schools will be evacuated to host schools outside the ten (10)-mile EPZ at a SAE, so that buses can be freed up to move people at a GE.
- During the OOS Risk School Evacuation Drill, the Principal, school facilities employee, a bus driver, or the school nurse will be available to discuss their evacuation procedures.
    - This will include information about ensuring KI is provided to the children and bus drivers.
    - One bus driver will be available to discuss the evacuation route with a FEMA Evaluator.
    - The OOS Risk School evaluations will occur on April 27, 2022, at the Risk schools, at 0900hrs.

  **Note:** Harford and Cecil County do not have any institutionalized populations within the ten (10)-mile EPZ.

- Mass Care, staff will demonstrate that the sheltering facilities in Cecil and Harford County are equipped to accommodate those with disabilities and access and functional needs during the OOS exercises.
- Cecil and Harford County will discuss means of transportation to the Mass Care facility for those with disabilities and access and functional needs.

Locations Evaluated:

- Cecil County EOC
- Harford County EOC

Support Jurisdictions Negotiated Extent of Play:

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|---|
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 1.5:** Protective Action Decision Implementation for the Plume Phase *(Vice Sub-Element 3.b.1; 3.c.1; 3.c.2)*
**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:**

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

State of Maryland Negotiated Extent of Play:

- All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.
- MDOT is a decision maker for restricting air space and railways in the area. If the population of the ten (10)-mile EPZ is evacuated, MDOT and the MSP will only assist in the evacuation efforts if requested by the Local Jurisdictions.
- All implementation of PADs will be executed at the local level.

Locations Evaluated:

- MDEM SEOC at the MDE AAC

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

- Protective actions for risk schools, including the evacuation to host schools, will be implemented at the Local level.
- Both Cecil and Harford County will discuss their measures for implementing PADs, including communicating and implementing these protective actions for those with disabilities and access and functional needs.
- Local Jurisdictions will discuss their plans for communicating with transportation officials and how evacuation routes are identified.
- These evacuation routes will be shown on a map at the local's EOC.
- KI distribution for the Emergency Workers will be discussed.
    - KI is made available to the public through distribution events held throughout the year.
- Risk Schools will be evacuated to Host schools at an SAE, so that bus drivers and buses can then assist in the evacuation of the General public with the PAD.
- Both school bus drives and school representatives will be interviewed as part of the evaluation in the OOS School Drill. This will cover the implementation of the school-based protective actions.
- During the OOS CRC Drill on April 27, 2022, Harford and Cecil County will discuss how citizens that require transportation will reach the CRC.

Locations Evaluated:

- Cecil County EOC
- Harford County EOC

| Support Jurisdictions Negotiated Extent of Play: |
| --- |
| N/A |
| Outstanding Issues: |
| N/A |

## OBJECTIVE 2 - Exposure Control

**Capability Target 2.1:** Emergency Worker Exposure Control Decision-Making Process *(Vice Sub-Element: 2.a.1)*
**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:**

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

| State of Maryland Negotiated Extent of Play: |
|---|
| • All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency.<br>• Distribution of KI tablets to the emergency workers, after their Emergency Worker brief, will be simulated by the MDE FMTs.<br>  ○ This will be demonstrated in the OOS FMT Drill.<br>  ○ Emergency Workers take KI in the PAD for a SAE ECL.<br>• Dose projections will be compared to previously established PAGs by the AAC. The AAC will discuss this process. |

- The AAC will discuss how they will authorize radioprotective drugs using projected thyroid doses and field measurements.
- The AAC will discuss their process for considering occupational exposures and dose limits and how they authorize individuals to re-enter restricted areas.
- MDE will discuss how they would determine a correction factor for a Direct Reading Dosimeter (DRD) Permanent Recording Dosimeter (PRD)-based isotopic release mixture.
- The AAC FMTs will discuss their process for periodic checking of DRD's and PRD's.
- FMTs will discuss how they record their exposure and dose in the field.
- The FMTs will discuss the process of reporting their exposure levels.
- The AAC can discuss their process for authorizing exposures and doses in excess of identified limits.
- Actual DRD and PRD issuance will be demonstrated.
- The Annual Letter of Certification (ALC), which is presented to FEMA annually, contains information including calibration, expirations dates, and leakage checks.
- State of Maryland can discuss the criteria for allowing temporary re-entry into restricted areas.
- Protective actions will be discussed and implemented by the Local Jurisdictions, as the exercise progresses from a PAR to a PAD at both the ECLs of a SAE and GE.
    - All protective actions are based on the 2017 EPA PAGs.

Locations Evaluated:

- State AAC (MDE)

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

Emergency Workers will receive an Emergency Worker briefing.

The Local Jurisdictions will provide information on the contents of the Emergency Worker kits.

The Local Jurisdictions will perform the Emergency Worker briefing and provide instructions on the ingestion of KI which includes the use of the KI form.

The Local Jurisdictions will present the FEMA evaluator with one Emergency Worker field kit that contains their KI, Dosimetry, and forms.

Emergency Workers will discuss with the FEMA Evaluator how they would gain Re-entry permission from the Radiological Officer (RO).

The Local Jurisdictions will discuss the reentry and escorting of pre-approved citizens back into the EPZ.

Locations Evaluated

Harford County EOC

| |
|---|
| Cecil County EOC |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

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

**Demonstration and Evaluation Guidance:**

10. Maintain an appropriate inventory of DRDs that are leak-tested or current in calibration.
11. Maintain an appropriate inventory of PRDs.
12. Retain an adequate supply of radioprotective drugs.
13. Adequately distribute appropriate DRDs and PRDs.
14. Adequately distribute radioprotective drugs to emergency workers.
15. Record and report exposures in the field.
16. Implement decisions to administer radioprotective drugs.
17. Report to individual responsible for managing exposure and dose when limits are reached.
18. 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.

| State of Maryland Negotiated Extent of Play: |
| --- |
| • All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency.<br>• The ALC, which is presented to FEMA annually, contains information including calibration, expirations dates, and leakage checks.<br>• The AAC will discuss their supply of radioprotective drugs, and their process for distributing DRDs and PRDs, including discussing the contents of the Emergency Worker kits.<br>• The decision to administer radioprotective drugs to the Emergency Workers will occur at a SAE.<br>• The AAC will demonstrate the Emergency Worker Brief for the FMTs and discuss the distribution of the KI and forms. |

- FMTs will discuss and demonstrate their KI, Dosimetry, sampling forms, how they manage exposures and who they report to when dose limits are reached.
- All these demonstrations will be completed OOS on the morning of the exercise.
    - The MDE AAC FMTs will demonstrate their operational checks and air sampling the day of the Full Participation Exercise on April 26, 2022, at 1300hrs.
    - There will be two (2) teams deployed for the Full Participation Exercise. FMT "A" will be at Harford County and FMT "B" will be in Cecil County.

Locations Evaluated:

- State AAC (MDE)
- FMTs A and B in the Local Jurisdictions

Risk Jurisdictions (Cecil & Harford) Negotiated Extent of Play:

- Actual KI will not be transported. KI will be available for inspection at the respective storage location. (Note – this may be demonstrated during the OOS evaluations).
- Emergency Workers will receive an Emergency Worker briefing, equipment, KI, and protective gear before heading out into the field. The Emergency Workers will not take the KI until instructed to.
- Emergency Workers will demonstrate basic knowledge of procedures by discussing what they learned in the Emergency Worker brief to the FEMA Evaluator.
- Harford and Cecil County EOC will discuss their inventory of dosimetry and radio protective drugs. The Local Jurisdictions will not perform an inventory count during the exercise. All inventory counts are in the 2022 ALC.
    - Local Jurisdictions can discuss their KI inventory, but no inventory counts will be performed.
    - Both Cecil and Harford can show that they have two (2) days' worth of KI.
- Harford and Cecil County will demonstrate their Emergency Worker Brief.
- Harford and Cecil County will discuss:
    - The contents of the Emergency Worker Kits (KI, Personal Protective Equipment, Dosimetry, paperwork, and forms).
    - The Emergency Workers will discuss the procedures for contacting the RO of the Local Health Department.
    - Discuss accountability and charting the receipt of KI, and when it was ingested, on the KI form.

Locations Evaluated:

- Harford County EOC

| |
|---|
| • Cecil County EOC |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

## OBJECTIVE 3 - Alert and Notification

**Capability Target 3.1:** Communications *(Vice Sub-Element: 1.d.1)*
**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").

State of Maryland Negotiated Extent of Play:

- All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency.
- All communication, both written and electronic, will begin with **"THIS IS AN EXERCISE".**
- The MJOC will send out an Everbridge message to all the Local Jurisdictions, MDEM staff, SCFs, the Governor's office, and others on the SEOC activation list.
- The MJOC will keep an electronic log of all of EOC representatives that receive the EverBridge Alerts and present it to the FEMA Evaluator. This includes the initial notification messages about the NPP Incident, activation of the SEOC, and an increase of ECLs.
    - The MJOC and SEOC staff will discuss the back-up to this system.
- WebEOC is the platform used for the exercise that the State and locals utilize for situational awareness and status updates.
- Important exercise documents will be uploaded to the State of Maryland's Incident Log on WebEOC.
- Backup communications are available for WebEOC which will be discussed.

- If WebEOC fails, Maryland will use email Google Chat and the Google Drive.

- The MDE FMTs will use Google Sheets and radios as their primary communication method. Cell phones are the backup method.
- The MJOC staff will complete a content check with the plant.
- The MJOC staff will also ensure that the Local Jurisdictions are on the EMnet call and have received and understand the information provided to all of them.
- Primary communication failures will not be injected into the scenario.
- Back up communications methods will only be discussed at their respective locations.
- MDEM will demonstrate to the FEMA Evaluator their use of the Bridge Line, Google Meet, Google Chat, and WebEOC as primary communication methods.
- MDEM Staff and certain State Agencies will be co-located in one room.
  - Face-to-face communication will be utilized throughout the exercise.
- Communication tests are held throughout the year and results were recorded in the 2022 ALC, which has been submitted to, and approved by, FEMA.

Locations Evaluated

- MJOC at the SHA SOC
- MDEM SEOC at the MDE AAC

Risk Jurisdictions (Cecil & Harford) Negotiated Extent of Play:

Local Jurisdictions will use their own Alert and Notification systems.

Staff will communicate with each other via WebEOC, text, email, and phones. Radio contact with those in the field will occur as normal.

All communication, both written and electronic, will begin with **"THIS IS AN EXERCISE".**

Cecil County utilizes face-to-face communication in their EOC. They also have a desk phone set up at each position station with a phone list for each Agency.

Harford County will utilize face-to-face communication with their EOC representatives in the EOC. Each position in the EOC also has a phone extension that can be called.

Both Cecil and Harford County can discuss their backup communications methods should the primary communication method fail.

Local Jurisdictions perform periodic communications tests. The results from these tests are in the 2022 ACL.

Locations Evaluated

Cecil County Public Safety Answering Point (PSAP)/911 Center

Harford County PSAP/911 Center

Harford County EOC

Cecil County EOC

| Support Jurisdictions Negotiated Extent of Play: |
|---|
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 3.2:** Alert and Notification of the Public *(Vice Sub-Element: 5.a.1; 5.a.3; 5.a.4)*
**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

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

EAS

14. Identify the process to activate the EAS.
15. Ensure that updated emergency information is disseminated in a timely manner.
16. Ensure that current emergency information is repeated at pre-established intervals.
17. 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.
18. EAS/National Warning System (NAWS) Station.
19. 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.)

State of Maryland Negotiated Extent of Play:

- These activities are based on the ORO's plans and procedures and are completed as they would be in an actual emergency.
- Alert and Notification of the Public will commence once a PAD has been agreed upon at the State and Local Level. Harford County is responsible for creating, approving, and disseminating the EAS message for the Counties and the State.
- The decision making SCFs, along with Harford and Cecil County on the Maryland Bridge Line, will transition to the PEMA Bridge Line to decide on the simultaneously timing for the simulated "sounding of the sirens" and the timing to disseminate the EAS message.

Locations Evaluated:

- MDEM SEOC at the MDE AAC

Risk Jurisdictions (Cecil & Harford) Negotiated Extent of Play:

- Siren sounding and demonstration will be simulated by both Harford and Cecil Counties.
- Harford County will develop and simulate sending the EAS message for the respective Maryland Local Jurisdictions and will describe the process of using EMnet to the Evaluator.
- Harford County will discuss their process for scripting and approving EAS messages, including sending updated Public Information messaging to the public.
- Harford County will demonstrate the approval process of the EAS message and show the sharing of the message with MDEM and other Agencies.
- The method of sending the message will be verified by a FEMA Evaluator however, the actual message will not be broadcasted.
- Harford County will contact one EAS station and send a simulated EAS through the EMnet to that Station.
- Both Local Jurisdictions will have a failed siren inject to demonstrate the route alerting.
- The announcement of the failed siren message will be simulated by the MDEM Controller at the Local Jurisdiction's EOCs.
- Both Local Jurisdictions will demonstrate Route Alerting.
- The Route Alerting participants will receive their Emergency Worker Briefings at their EOCs prior to going to the Route Alerting demonstration.
- Harford and Cecil County will discuss, with the FEMA Evaluator, where their confidential and secure list of citizens that have disabilities, access, and functional needs are located.

- These lists provide information to Local Jurisdictions as to which homes have people with disabilities, access, and functional needs.
- The Sheriff Deputy demonstrating the route alerting will discuss knocking on doors to alert this population.

- **Harford County Route Alerting:**
  - Harford County's Sheriff's Office (HCSO) will demonstrate the route alerting for the simulated siren failure.
  - Harford County will dispatch one (1) team consisting of a lead Sheriff's Deputy and two (2) staff/team members as driver and back-up.
  - Timing of the back-up routes will only begin after the designated participants receive notification of the failed sirens from the County EOC.

- **Cecil County Route Alerting:**
  - Cecil County Sheriff's Office (CCSO) will demonstrate the route alerting for the simulated siren failure.
  - The Sheriff's Deputy will receive the Emergency Worker briefing and then drive to the Water Witch Fire Company and meet the FEMA Evaluator.
  - The FEMA Evaluator will drive directly to the Water Witch Fire Company and await the arrival of the CCSO Deputy.
  - The Address for the Water Witch Fire Company is:
    - 15 North Main Street, Port Deposit MD., 21904.
  - The demonstration will not begin until the CCSO Deputy receives the failed siren location information from the Sheriff in the EOC.
  - The Sheriff's Deputy will demonstrate to the FEMA evaluator where that is and proceed with the route alerting.

Locations Evaluated:

- Harford County EOC
- Cecil County EOC
- Harford County Route Alerting Teams (Harford County EOC)
- Cecil County Route Alerting Staging (Water Witch Fire Company)

| Support Jurisdictions Negotiated Extent of Play: |
| --- |
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 3.3:** Emergency Information and Instructions for the Public and News Media *(Vice Sub-Element: 5.b.1; 3.e.2)*
**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

3. Rapidly disseminate of ingestion exposure pathway information to predetermined individuals and businesses.
4. 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.

| State of Maryland Negotiated Extent of Play: |
| --- |
| • All activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.<br>• Upon declarations of an SAE, the MDEM PIO will operationalize the JIC, call the Constellation EOF, and set up a conference line with the Local Jurisdiction's PIOs. |

- This conference line will remain open for the duration of the exercise to ensure coordinated and timely public messaging.
- All public messaging will be written in clear, plain language to ensure accessibility.

- There are no populations in the ten (10)-mile EPZ that meet the criteria for our public messaging to be translated.
- The MDEM External Affairs Lead will be responsible for drafting press releases throughout the exercise. Each press release will be edited by the External Affairs support position and sent to the SEOC Commander and Executive Liaison for review and approval before publishing.
  - All post-declaration of emergency press releases will be cleared through the JIC before being released.
  - The actual publishing of these press releases will be simulated or explained to the Evaluator.
- MDEM will have rumor control staff to field all public inquiries made directly to Maryland.
  - The Public inquiry SimCell will make no less than eight phone calls to MDEM (Four [4] at an SAE and four [4] at a GE). Public inquiry calls will be initiated at an SAE.
  - The rumor control staff will identify any trends in the public inquiry calls and report them to the External Affairs Lead.
  - The External Affairs Lead and the PIO will determine if any public messaging is necessary to correct these rumors.
- Each press release will clearly identify the protective actions being given, and which zones are affected by these protective actions.
  - Press releases will be issued with any changes to protective actions during the exercise. This includes new protective actions that are decided upon declaration of a GE from an SAE.
  - Each press release will use the PAD form as a reference for the protective actions being given.
  - All press releases will contain contact numbers for any public and media inquiries.
  - Press releases will correct any information that is no longer valid, if necessary.
  - MDEM will not handle releases for risk and host school transfers, parks, and emergency worker KI ingestion. The Local Jurisdictions will send these out.
- Any post-plume criteria listed will not be demonstrated during this exercise.

Locations Evaluated:

- MDEM SEOC at the MDE AAC

Local Jurisdictions Negotiated Extent of Play

- The Local Jurisdictions will join the JIC conference line with MDEM and the EOF to ensure coordinated and timely public messaging.
- All press release will be written in clear, plain language to ensure accessibility.
- There are no populations in Harford or Cecil County that meet the criteria for translated public messaging.
- All press releases will accurately capture the protective actions being taken for the public, using the PAD forms and the JIC conference line.
    - Subsequent press release will be issued upon any changes to protective actions. This includes new protective actions that are decided upon escalating to a GE from an SAE.
    - Press releases will correct any information that is no longer valid, if necessary.
- The Local Jurisdictions will handle all public messaging for risk and host school transfers, parks, and emergency worker KI ingestion.
- The Local Jurisdictions SHA representative, along with the Local Jurisdiction's Department of Works will monitor any road impediments or evacuation concerns and coordinate with Local Jurisdictions EOCs to provide accurate information for public messaging.
    - Each press release by the Local Jurisdictions will clearly detail the protective actions being taken.
    - All evacuation routes to be taken will be clearly detailed in the press releases.
- The Local Jurisdictions will release their phone numbers for any media and public inquiries with each press release.
- Both Harford and Cecil County will have no less that eight (8) public inquiry phone calls made to them during the exercise.
    - Four (4) at an SAE and four (4) at a GE.
    - The public inquiry staff will be responsible for identifying trends in any rumors and report those trends to the local PIO's.
    - These phone calls will be made by the public inquiry SimCell located at the MDEM SEOC.
- Any post-plume criteria listed will not be demonstrated during this exercise.

Locations Evaluated:

- Cecil County EOC
- Harford County EOC

Support Jurisdictions Negotiated Extent of Play:

N/A

| Outstanding Issues: |
| --- |
| N/A |

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

**Capability Target 4.1:** Field Monitoring Teams Management *(Vice Sub-Elements: 4.a.2)*
**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:**

10. Brief FMTs on predicted plume location and direction, plume travel speed, equipment operational checks, background measurement, and exposure control procedures before deployment.
11. Direct the FMTs to monitoring locations, predesignated points or otherwise, at times and locations sufficient to characterize the plume.
12. Obtain peak plume measurements from FMTs.
13. Direct FMTs to collect air samples at locations and times sufficient to characterize the plume.
14. Keep Incident Command informed of FMTs activities and location(s) during a Hostile Action Based (HAB) incident or other instances when an Incident Command Post (ICP) or other may be in use.
15. Coordinate and share information amongst all FMTs (licensee, Federal, state, and local).
16. Coordinate sample analysis from field to those responsible for assessing radiological data.
17. Coordinate transfer of sample media to locations and organizations responsible for assessing radiological data.
18. Assist with development and modification of sampling plans, as appropriate.

| State of Maryland Negotiated Extent of Play: |
| --- |
| • These activities will be based on the ORO's plans and procedures and completed, as they would be in an actual emergency.<br>• The FMTs will demonstrate their operational checks and air sampling the day of the Full Participation Exercise on April 26, 2022, at 1300hrs. |

- The FMTs will pre-stage in the counties for the Full Participation Exercise. There will be two (2) teams deployed for the Full Participation Exercise. FMT "A" will be at Harford County and FMT "B" will be in Cecil County.
- At least six (6) readings will be obtained by each team at one (1) or more survey point locations. This will be demonstrated OOS.
- Delivery of samples for additional analysis will not be demonstrated.
- One (1) sample will be obtained in an area that exhibits above ambient background radiation levels (plume edge) if applicable.
- This is not a HAB exercise, so there will be no Incident Command Post (ICP).
- The FMTs will discuss their process for information sharing with the licensee, or any Federal or State Agencies.

Locations Evaluated:

- State AAC (MDE)
- FMT's A and B in the Local Jurisdictions

| Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play: |
|---|
| N/A |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 4.2:** Plume Phase Measurements and Sampling *(Vice Sub-Element: 4.a.3)*
**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:**

15. Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards.
16. Maintain inventory for emergency kits.
17. Operate and monitor radiation survey instruments to detect changes in radiation exposure rate while moving and in stationary positions.
18. Use appropriate contamination control and PPE.
19. Be in location(s) at the appropriate time(s) to detect and characterize the active release (plume).
20. Obtain peak plume measurements either directly or from licensee field teams.
21. Correctly interpret survey instrument readings to determine submersion in the active plume.
22. 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).
23. Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination.
24. Determine an appropriate low background location to count sample media.
25. Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four (4) hours.
26. Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor.
27. Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as 10-7 µCi/cc.

State of Maryland Negotiated Extent of Play:

- These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency.
- At least six (6) readings will be obtained by each team at a one (1) survey point at different times in the scenario or at different survey point locations.
- In accordance with (IAW) agreements with Constellation Energy Group and State and Local organizations, State teams will not measure plume centerline radiation levels.
- Airborne radioactivity samples will be counted the morning of the exercise on April 26, 2022, and not in the field.
- The FMTs will demonstrate and discuss their operational checks the morning of the exercise on April 26, 2022.
- The FMTs will discuss the PPE gear they use and their process for avoiding cross contamination and contamination of equipment.
- FMTs will demonstrate the contents of their Emergency Worker kits.
- The AAC can discuss the inventorying of the Emergency Worker kits.
- All communications will be between the AAC and FMTs and can be demonstrated using their primary communications methods (Google Sheets and radios).
- All measurements collected by the FMTs will be delivered to the FMT's Leader and then to the AAC.
- All data will be entered into RadResponder for the AAC to analyze.
- One (1) sample will be obtained in an area that exhibits above ambient background radiation levels (plume edge) if applicable.
- Scenario data location may not result in access to plume dose.
- The FMTs can discuss the counting of iodine and particulate media if applicable, but this will not be demonstrated.
- Procedures for the detection of low airborne radioactive iodine concentrations can be discussed, if applicable.
- Delivery of samples for additional analysis will not be demonstrated.
- Only the State FMTs will demonstrate this objective.

Locations Evaluated:

- State AAC (MDE)
- FMT's A and B in the Local Jurisdictions

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

N/A

Support Jurisdictions Negotiated Extent of Play:

N/A

| Outstanding Issues: |
| --- |
| N/A |

**Capability Target 4.5:** Plume Phase Analysis and Dose Assessment *(Vice Sub-Element: 2.b.1)*
**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:**

12. Obtain adequate data to make dose projections.
13. 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.
14. Compare dose projections to members of the public to EPA PAGs.
15. 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.
16. Make initial PARs based on recommendations of the licensee, release data, meteorological data, and other pertinent information.
17. Promptly communicate PARs to decision-makers.
18. Receive ambient exposure rates from FMTs and compare to model projections.
19. Calculate iodine and particulate concentrations from FMT air samples.
20. Calculate plume ratios of noble gas, iodine's, and particulates, and compare to model projections.
21. Adjust PARs, as necessary, based on analysis of field data.
22. Calculate an incident-specific correction factor for emergency workers inside the plume exposure pathway EPZ.

| State of Maryland Negotiated Extent of Play: |
| --- |
| • These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency.<br>• At least six (6) readings will be obtained by each team at a one (1) survey point at different times in the scenario or at different survey point locations.<br>• State teams will not measure plume centerline radiation level IAW existing agreements between Constellation Energy, Maryland, and the Local Jurisdictions. |

- The AAC can, if applicable, discuss the comparison of their dose projections with those of the Licensee. Processes for explaining or mitigating any difference in dose projections can be discussed.
- Collecting airborne radioactivity samples will be simulated in the field.
- Chain of custody procedures to deliver samples for additional analysis will be described to the Evaluator.
- The FMTs can discuss how they calculate any iodine and particulate concentrations from their air samples, if applicable.
- MDE and MDH will look at all available field data while discussing PARs and changing them into PADs.
- One (1) sample will be obtained in an area that exhibits above ambient background radiation levels (plume edge) if applicable.
- Scenario data location may not result in access to plume dose.
- Delivery of samples for additional analysis will not be demonstrated.
- The AAC can discuss how they calculate an incident-specific correction factor for emergency workers inside the ten (10)-mile EPZ, if applicable.

Locations Evaluated:

- State AAC (MDE)
- FMT's A and B in the Local Jurisdictions

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

- During the OOS Monitoring and Decontamination Drills, the Local Jurisdictions will demonstrate thyroid monitoring only for the Emergency Workers. A Ludlum reader will be used for this.
    - Any data gathered from this process will be shared with MDH to assist in the analysis of field data.
- All data collected from the monitoring of the general public and Emergency Workers will be provided to MDH.
- The Local Jurisdiction's Health Departments can discuss their role in dose projections for the public.

Support Jurisdictions Negotiated Extent of Play:

N/A

Outstanding Issues:

N/A

## OBJECTIVE 5 - Operate

**Capability Target 5.1:** Monitoring, Decontamination, Sheltering, and Registration of Evacuees *(Vice Sub-Element: 6.a.1; 6.c.1)*

**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:**

3. Set-up operations.
4. 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

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

Vehicles

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

Sheltering and Congregate Care

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

Registration

5. Register evacuees.
6. 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 (8) years.

State of Maryland Negotiated Extent of Play:

- The Local Jurisdictions will demonstrate the operation of the CRC including monitoring, decontamination, and sheltering.
- State Agencies do not participate in CRC Drills except to provide MDEM Controllers.
- These OOS Drills will be held on April 27th, 2022.

Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:

- The setup of the CRC for monitoring, decontamination, and sheltering will be prior to the OOS Drill.
- These activities are based on the ORO's plans and procedures and are completed as they would be in an actual emergency.

**Harford County OOS Drills**:

- CRC Monitoring and Decontamination for Citizens
  - Fallston High School on April 27, 2022, at 1900hrs.
  - Need to demonstrate at least six (6) people or one (1) person going through six (6) times through.
  - Harford County will have an inject for one (1) contaminated person at this CRC.
  - The monitoring sequences for the first six (6) simulated evacuees per monitoring team will be timed by the Evaluators to determine whether the twelve (12)-hour requirement can be met.
  - Players will not shower during the exercise. The decontamination process will be discussed.
- Monitoring and Decontamination for Emergency Workers and an Emergency Worker Vehicle will be at the Harford County CRC:
  - Fallston High School on April 27, 2022, at 1900hrs.
  - They will demonstrate a simulation of one (1) contaminated Emergency Worker Vehicle.
  - CRC staff will discuss and demonstrate that Emergency Workers will take priority in monitoring and decontamination over citizens in the CRC.

- The actual **flow of water** for the decontamination of an Emergency Worker vehicle will **Not** be demonstrated but discussed with the Evaluator

- The Mass Care Drill will be at Patterson Mill High School on April 27, 2022, at 1900hrs.

**Cecil County OOS Drills:**

- The CRC Monitoring and Decontamination for Citizens:
  - Rising Sun High School on April 27, 2022, at 1900hrs.
  - Need to demonstrate at least six (6) people or one (1) person going through six (6) times through.
  - The monitoring sequences for the first six (6) simulated evacuees per monitoring team will be timed by the Evaluators to determine whether the twelve (12)-hour requirement can be met.
  - Cecil County will have an inject for one (1) contaminated person at this CRC.
  - Players will not shower during the exercise. The decontamination process will be discussed.
- Monitoring and Decontamination for Emergency Workers and one (1) Emergency Worker Vehicle will be at:
  - Perryville High School on April 27, 2022, at 1900hrs.
  - Cecil County will have an inject for one (1) contaminated Emergency Worker.
  - They will demonstrate a simulation of decontamination of one (1) contaminated Emergency Worker Vehicle.
  - The actual **flow of water** for the decontamination of an Emergency Worker vehicle will **Not** be demonstrated but discussed with the Evaluator
- The Mass Care Drill will be at Rising Sun High School on April 27, 2022, at1900hrs.

**Cecil and Harford County OOS CRC Drills:**

- The personnel will have one-third of the resources (e.g., monitoring teams, instrumentation, portal monitors) available at the CRC as necessary to monitor twenty (20) percent of the population within a twelve (12)-hour period.
- CRC staff will demonstrate the process of checking their instruments.
- CRC Staff will demonstrate the capability to register evacuees upon completion of the monitoring and decontamination activities.

- The CRC Staff will discuss the forms that are used to track and record evacuees. The CRC Staff will discuss their recording of radiological monitoring and decontamination data.
- CRC and Mass Care Personnel will discuss their procedures for service animals.
- Those individuals who are found to be contaminated will have their vehicles held in a secure area until their vehicle can be monitored and decontaminated, as per their REP Plans. This will be explained not demonstrated.
    - Individuals found to be clean after monitoring do not need to have their vehicle monitored.
- Estimated monitoring rates and teams required for demonstration are listed below:
    - The number of teams is based on ten (10%) of the population arriving at the CRC with some contamination.
    - Portal monitors can process four (4) persons/min or 240 persons/hr.
    - Hand-held monitors process twelve (12) persons/hr.
- The monitoring staff must demonstrate the capability to make decisions on the need for decontamination of people based on trigger/action levels and procedures stated in ORO plans.
- Decontamination of evacuees will be simulated and discussed with the FEMA Evaluator.
- Provisions for separate showering and same-sex monitoring will be discussed..
- Personnel will discuss the provisions for limiting the spread of contamination.
    - CRC personnel will discuss provisions that could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas.
    - CRC personnel will also be able to demonstrate or discuss their cleaning procedures for preventing any cross-contamination.
- Provisions that separate contaminated and uncontaminated individuals will be demonstrated.
- CRC Staff will discuss providing changes of clothing for those with contaminated clothing.
- Personnel will discuss the storage and monitoring of contaminated clothing and personal belongings.
    - Players will not disrobe during the exercise.
- Monitoring personnel will explain the procedures for contacting Emergency Medical Services (EMS) for transporting contaminated evacuees and Emergency Workers to the hospital for a technical decontamination.

**Mass Care Extent of Play:**

- OROs will set-up stations for various services and providing those services to simulated evacuees.
- Mass Care staff will demonstrate the capability to ensure that evacuees, service animals, and vehicles have been monitored for contamination, decontaminated as appropriate, and registered before entering the facility.
- The Local Jurisdictions will demonstrate that individuals arriving at Mass Care facilities will have means (e.g., hand stamp, sticker, bracelet, form, etc.) indicating that they, and their service animals and vehicles, where applicable, have been placed in a secured area or monitored, cleared, and found to have no contamination, or contamination below the trigger/action level.
- Mass Care Staff will provide the Evaluator a list of sources with locations and estimates of quantities of cots, blankets, toiletries, food, and other billeting items for evacuees.

Table 5 Local Jurisdiction Monitoring and Decontamination Data

| **Cecil County** | |
|---|---|
| Total Population Est. | 102,000 |
| Est. Population Within EPZ | 7,400 |
| Est. @ Reception (~20% of Risk Population) | ~1,500 |
| Time to monitor population (no contaminations) using 1 portal monitor | >10 minutes |
| Time to monitor population (10% contaminations) using hand-held instruments | 30 minutes / team |
| Teams required for hand-held monitoring in 24 hours | 1 |
| Teams required for exercise demonstration (1/3) | 1 |
| | |
| **Harford County** | |
| Total Population Est. | 250,000 |
| Est. Population Within EPZ | ~12,000 |
| Est. @ Reception | ~2,400 |
| Time to monitor population (no contaminations) using 1 portal monitor | >10 minutes |
| Time to monitor population (10% contaminations) using hand-held instruments | 30 minutes / team |
| Teams required for hand-held monitoring in 24 hours | 1 |
| Teams required for exercise demonstration (1/3) | 1 |

| |
|---|
| Locations Evaluated:<br>• Rising Sun High School-Cecil County<br>  ○ CRC, Monitoring, and Decontamination, and Mass Care<br>  ○ 100 Tiger Drive, North East, MD 21901<br>• Perryville High School-Cecil County<br>  ○ Monitoring and Decontamination for Emergency Workers<br>  ○ Emergency Worker Vehicle Monitoring and Decontamination<br>  ○ 1696 Perryville Road, MD, 21903<br>• Fallston High School-Harford County<br>  ○ CRC, Monitoring and Decontamination for Emergency Workers<br>  ○ Emergency Worker Vehicle Monitoring and Decontamination<br>  ○ 2301 Carrs Mill Road, Fallston, MD 21047<br>• Patterson Mill High School-Harford County<br>  ○ Mass Care<br>  ○ 85 Patterson Mill Road, Bel Air, MD 21015 |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 5.2:** Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles *(Vice Sub-Element: 6.b.1*)
**Core Capabilities:** Operational Coordination; Environmental Response/Health and Safety; Planning
**Recommended Evaluation Frequencies:** Biennially
**Recommended Assessment Activities:** Exercise; Drill
**Planning Reference:** NUREG-0654/FEMA-REP-1, Rev. 2 (K.4 and O.1)
**Intent:** The capability to implement radiological monitoring and decontamination of emergency workers, equipment, and vehicles.

**Demonstration and Evaluation Guidance**:

8. Set-up operations.
9. Operationally check instruments and equipment.
10. Monitor emergency worker personnel and their equipment and vehicles for contamination.
11. Decontaminate emergency worker personnel and their equipment and vehicles based on trigger/action levels.
12. Control the spread of contamination.
13. Create and maintain a record of monitoring and decontaminating workers upon completion of monitoring and decontamination activities.

14. 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 (8) years.

| State of Maryland Negotiated Extent of Play: |
|---|
| • All evaluation criteria for this Capability Target will be demonstrated by the Local Jurisdictions. |
| Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play: |
| The setup of for monitoring, decontamination of Emergency Workers and a monitoring and decontamination of one (1) emergency vehicle will be an OOS Drill which will take place at a different location and times than the Graded Full Participation Exercise. Please see below for dates, times, and locations for both Cecil and Harford County:<br>Harford County:<br>15. Monitoring and Decontamination for Emergency Workers and one (1) Emergency Worker Vehicle at Fallston High School on April 27, 2022, at 1900hrs.<br>o Emergency Workers will be included with the general population.<br>o Emergency Worker vehicles will be at the same location as general population vehicles, but in a different area of the property.<br>Cecil County:<br>16. Monitoring and Decontamination for Emergency Workers and one (1) Emergency Worker Vehicle at Perryville High School on April 27, 2022, at 1900hrs.<br>o Cecil County has Monitoring and Decontamination at different locations for Emergency Workers and the general population.<br>Both Risk Counties:<br>17. Facilities will be staffed, set up, and operational prior to the evaluation.<br>18. The actual **flow of water** for the decontamination of an Emergency Worker vehicle will **Not** be demonstrated but discussed with the Evaluator.<br>19. These activities will be based on the ORO's plans and procedures and completed as they would be in an actual emergency.<br>20. Personnel will demonstrate equipment checks.<br>Emergency Worker Monitoring and Decontamination Extent of Play. |

21. Personnel will demonstrate the monitoring of the emergency workers.
- Decontamination of emergency workers will be simulated and conducted via interview. Players will not shower during the exercise. The decontamination process will be discussed.

22. Provisions for separate showering and same-sex monitoring will be demonstrated or explained.
23. Personnel will discuss their provisions to prevent cross contamination. These could include:
    - Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas.
    - Provisions must also exist to separate contaminated and uncontaminated individuals where applicable describing where the storage of the contaminated clothing and personal belongings will be contained.
24. Staff will discuss the use of trigger/action levels for determining the need for decontamination.
25. Monitoring Personnel will discuss the procedures for sending any emergency workers who cannot be decontaminated to a medical facility for technical decontamination and treatment.
26. The Controller will provide an inject for the contaminated actor.

Emergency Worker Vehicle Monitoring and Decontamination Extent of Play:

27. Monitoring procedures must be demonstrated for a minimum of one (1) vehicle.
    - It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as radiator grills, bumpers, wheel wells, tires, and door handles will be demonstrated.
    - There will not be any actual flow of water for this portion of the exercise.
28. Interior surfaces of vehicles that were in contact with contaminated individuals must also be checked.
29. The monitoring staff will demonstrate the capability to make decontamination decisions on equipment and vehicles based on their plans.

Locations Evaluated:

30. Fallston High School-Harford County
    - Monitoring and Decontamination for Emergency Workers
    - Emergency Worker Vehicles Monitoring and Decontamination
    - 2301 Carrs Mill Rd, Fallston, MD 21047
31. Perryville High School -Cecil County
    - Monitoring and Decontamination for Emergency Workers
    - Emergency Worker Vehicles Monitoring and Decontamination

| |
|---|
| ○ 1696 Perryville Road, MD, 21903 |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

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

**Demonstration and Evaluation Guidance:**

Transportation

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

Medical Facility

5. Operationally check instruments and equipment.
6. Set-up, activate, and operate a Radiation Emergency Area (REA).
7. 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.

| State of Maryland Negotiated Extent of Play: |
|---|
| • This will be assessed during the OOS Medical Service (MS-1) Drills. |
| Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play: |
| • This will be assessed during the OOS MS-1 Drills.<br>• Cecil County's MS-1 Drill will be at the Christiana Care Union Hospital, on May 4th, 2022, at 0900hrs.<br>• Harford County's MS-1 Drill will be at the University of Maryland Upper Chesapeake Medical Center on May 5, 2022, at 0900hrs.<br>• A separate ExPlan and Extent of Play will be developed for both Drills.<br><br>Locations Evaluated:<br>• Christiana Care Union Hospital |

| |
|---|
| • University of Maryland Upper Chesapeake Medical Center |
| Support Jurisdictions Negotiated Extent of Play: |
| N/A |
| Outstanding Issues: |
| N/A |

**Capability Target 5.4:** Traffic and Access Control *(Vice Sub-Element: 3.d.1; 3.d.2)*
**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:**

9. Select, establish, and staff appropriate TCP/ACPs, consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation), in a timely manner.
10. 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.
11. Contact the state or Federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic).
12. Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes.
13. 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.
14. Establish procedures to control access to and monitor people and vehicles from the evacuated and restricted areas.
15. Authorize reentry of individuals into the restricted areas.
16. 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.

| State of Maryland Negotiated Extent of Play: |
|---|
| • MDOT is the decision maker for restricting air space and railways in the area.<br>• MDOT and MSP will assist in evacuation efforts if requested by the Local Jurisdictions.<br>• Implementation of all PADs will be executed at the local level. |
| Locations Evaluated: |

- MDEM SEOC at the MDE AAC

**Risk Jurisdictions (Cecil & Harford County) Negotiated Extent of Play:**

- The Local Jurisdictions are responsible for the decision of evacuation routes for their citizens.
- Transportation representatives in the Local Jurisdiction EOCs will discuss their routes, and how they will ensure they don't send traffic through the EPZ with the FEMA Evaluator.
- The Local Jurisdictions will discuss their Access Control Points/Traffic Control Points (ACP/TCP) process through an interview with a FEMA Evaluator.
    - EOC representatives will discuss the process to allow citizens re-entry, if re-entry is needed, with the FEMA Evaluator.
- The ACP/TCP will be discussed with the FEMA Evaluator in the EOC and will be based on scenario conditions. This will not be physically demonstrated.
- Communications with the ACP/TCP (law enforcement) will occur as they would in an actual emergency.
- There is one (1) road impediment inject for both Cecil and Harford County.
- Both Local Jurisdictions will discuss the alternate evacuation routes with a FEMA Evaluator based on the road impediment inject.
- Both of the Local Jurisdictions will demonstrate their public messaging during the Exercise. This will include providing updates to citizens about changes to evacuation routes as necessary.
- The PIOs in both of the Local Jurisdictions will demonstrate the coordination of all messaging between themselves, the State JIC and the EOF JIC during the exercise.
    - The PIOs will demonstrate sharing of public messaging and press released.

Locations Evaluated:

- Cecil County EOC
- Harford County EOC

**Support Jurisdictions Negotiated Extent of Play:**

N/A

**Outstanding Issues:**

N/A

# APPENDIX C: PARTICIPATING AGENCIES

Table 6 Participating Agencies

| Federal Agencies |
|---|
| Federal Emergency Management Agency (FEMA) |
| Nuclear Regulatory Commission (NRC) |
| United States Coast Guard- Baltimore |
| The Department of Homeland Security- Cybersecurity and Infrastructure Security Agency (DHS-CISA) |
| State Agencies |
| Maryland Department of Emergency Management (MDEM) |
| Maryland Department of Agriculture (MDA) |
| Maryland Department of Environment (MDE) |
| Maryland Department of Health (MDH) |
| Maryland Department of Human Services (DHS) |
| Maryland Department of Disabilities (MDOD) |
| Maryland State Department of Education (MSDE) |
| Maryland Department of General Services (DGS) |
| Maryland Department of Information and Technology (DoIT) |
| Maryland Department of Natural Resources (DNR) |
| Maryland Department of Planning (MDP) |
| Maryland Department of Transportation (MDOT) |
| Maryland Energy Administration (MEA) |
| Maryland Institute for Emergency Medical Services Systems (MIEMSS) |
| Maryland Military Department (MMD)/ Maryland National Guard (MDNG) |
| Maryland Public Service Commission (PSC) |
| Maryland Coordination and Analysis Center (MCAC) |
| Maryland State Police (MDSP) |
| Local Jurisdictions |
| Cecil County |
| Harford County |
| Support Jurisdictions |
| N/A |
| Private Sector Organizations |
| Peach Bottom Atomic Power Station (PBAPS) |
| Constellation Energy Group |
| Volunteer Organizations/NGO |
| American Red Cross (ARC) |

# APPENDIX D: ADDRESSES

Table 7 State Locations for Full Participation Exercise

| State Locations for Full Participation Exercise | |
|---|---|
| **Venue** | **Address** |
| MDE AAC | 1800 Washington Boulevard, Baltimore, Maryland 21230 |
| Maryland Joint Operations Center (SHA SOC) | 7491 Connelley Drive Hanover, MD 21076 |

Table 8 Risk Locations for the Full Participation Exercise

| Risk Locations for the Full Participation Exercise | |
|---|---|
| **Venue** | **Address** |
| Harford County EOC | 2220 Ady Road, Forest Hill, MD 21050 |
| Cecil County EOC | 107 Chesapeake Blvd. Suite 108, Elkton, MD 21921 |

Table 9 Support Locations for the Full Participation Exercise

| Support Locations for the Full Participation Exercise | |
|---|---|
| **Venue** | **Address** |
| Water Witch Fire Company (Route Alerting Staging) | 15 N Main Street, Port Deposit, MD 21904 |
| Emergency Operations Facility | 175 N Caln Rd., Coatesville, PA 19320 |

Table 10 Out-of-Sequence Locations

| Out of Sequence Locations | |
|---|---|
| **Harford County** | |
| **Venue** | **Address** |
| Harford County Risk Schools Evaluation Drills<br>April 27, 2022, at 0900hrs. | North Harford Elementary<br>• 120 Pylesville Road, Pylesville, MD 21132<br>North Harford Middle School<br>• 112 Pylesville Road, Pylesville, MD 21132<br>North Harford High School<br>• 211 Pylesville Road Pylesville, MD 21132 |
| Harford County CRC Monitoring and Decontamination for Citizens<br>April 27, 2022, at 1900hrs. | Fallston High School<br>• 2301 Carrs Mill Road, Fallston, MD 21047 |
| Harford County Monitoring and Decontamination for Emergency Workers and one (1) Emergency Worker Vehicle<br>April 27, 2022, at 1900hrs. | Fallston High School<br>• 2301 Carrs Mill Road, Fallston, MD 21047 |
| Harford County Mass Care<br>April 27, 2022, at 1900hrs. | Patterson Mill High School<br>• 85 Patterson Mill Road, Bel Air, MD 21015 |
| Harford County MS-1 Drill<br>May 5,2022 at 0900hrs. | University Of Maryland Upper Chesapeake Medical Center<br>• 500 Upper Chesapeake Drive, Bel Air, MD 21014 |
| Harford County Emergency Medical Services (EMS) unit for the MS-1 Drill | Whiteford EMS<br>• 1407 Pylesville Road, Whiteford, MD 21160 |

| | |
|---|---|
| May 5, 2022, at 0900hrs. | |
| **Cecil County** | |
| **Venue** | **Address** |
| Cecil County Risk School Drills<br>April 27, 2022, at 0900hrs. | Conowingo Elementary<br>• 471 Rowlandsville Rd, Conowingo, MD 21918 |
| Cecil County CRC Monitoring and Decontamination for Citizens<br>April 27, 2022, at 1900hrs. | Rising Sun High School<br>• 100 Tiger Dr, North East, MD 21901 |
| Cecil County Mass Care<br>April 27, 2022, at 1900hrs. | Rising Sun High School<br>• 100 Tiger Dr., North East, MD 21901 |
| Cecil County Monitoring and Decontamination for Emergency Workers and one (1) Emergency Worker Vehicle<br>April 27, 2022, at 1900hrs. | Perryville High School<br>• 1696 Perryville Rd, Perryville, MD 21903 |
| Cecil County MS-1 Drill<br>May 4, 2022, at 0900hrs. | ChristianaCare Union Hospital<br>• 106 Bow St, Elkton, MD 21921 |
| Cecil County EMS unit for the MS-1 Drill<br>May 4, 2022, at 0900hrs. | Community Company of Rising Sun EMS<br>• 300 Joseph Biggs Memorial Hwy, Rising Sun, MD 21911 |

# APPENDIX E: ACRONYMS

| Acronym | Description |
|---|---|
| AAC | Accident Assessment Center |
| AAM | After-Action Meeting |
| AAR | After-Action Report |
| ACP | Access Control Point |
| ALC | Annual Letter of Certification |
| ANS | Alert and Notification System |
| ARC | American Red Cross |
| CALVEX | Calvert Cliffs Full Participation Exercise |
| CCSO | Cecil County Sheriffs Office |
| CFR | Code of Federal Regulations |
| COOP | Continuity of Operations Plan |
| CRC | Community Reception Center |
| CTL | Capability Target List |
| DHS | Department of Homeland Security |
| DNR | Maryland Department of Natural Resources |
| DOE | Department of Energy |
| DoIT | Maryland Department of Information Technology |
| DO | Duty Officer |
| DoC | Director on Call |
| DRD | Direct Reading Dosimeter |
| EA | External Affairs |
| EAL | Emergency Action Level |
| EAS | Emergency Alert System |
| EC | Emergency Coordinator |
| EEG | Exercise Evaluation Guide |
| ECL | Emergency Classification Level |
| EMS | Emergency Medical Services |
| EMnet | Emergency Management Network |
| EO | Executive Order |
| EOC | Emergency Operations Center |
| EOF | Emergency Operations Facility |
| EONS | Electronic Offsite Notification Program |
| EOPA | Extent of Play Agreement |
| EOP | Extent of Play |
| EPA | Enivironmental Protection Agency |

| | |
|---|---|
| EPT | Exercise Planning Team |
| EPZ | Emergency Planning Zone |
| ETE | Evacuation Time Estimate |
| EW | Emergency Workers |
| ExPlan | Exercise Plan |
| FEMA | Federal Emergency Management Agency |
| FMT | Field Monitoring Team |
| FSE | Full Scale Exercise |
| GE | General Emergency |
| HAB | Hostile Action Based |
| HAZMAT | Hazerdours Materials |
| HCSO | Haford County Sheriffs Office |
| HSEEP | Homeland Security Exercise and Evaluation Program |
| HSIN | Homeland Security Information Network |
| IAW | In Accordance With |
| ICP | Incident Command Post |
| ICS | Incident Command System |
| IP | Improvement Plan |
| IPW | Integrated Preparedness Workshop |
| IPZ | Ingestion Pathway Zone |
| JIC | Joint Information Center |
| JIS | Joint Information System |
| KI | Potassium Iodide |
| LO | Liaison Officer |
| MCAC | Maryland Coordination and Analysis Center |
| MCC | Mass Care Center |
| MDA | Maryland Department of Agriculture |
| MDOD | Maryland Department of Disability |
| MDE | Maryland Department of Environment |
| MDEM | Maryland Department of Emergency Management |
| MDH | Maryland Department of Health |
| MDHS | Maryland Department of Human Services |
| MDNG | Maryland National Guard |
| MDOT | Maryland Department of Transportation |
| MDP | Maryland Department of Planning |
| MEA | Maryland Energy Administration |
| MIEMSS | Maryland Institute of Emergency Medical Services Systems |
| MMD | Maryland Military Department |

| | |
|---|---|
| MSDE | Maryland Department of Education |
| MSP | Maryland State Police |
| MJOC | Media Joint Operations Center |
| MOU | Memorandum of Understanding |
| MS-1 | Medical Services Hospital |
| MSEL | Master Scenario Events List |
| MSP | Maryland State Police |
| NPP | Nuclear Power Plant |
| NPS | National Preparedness System |
| NRC | U.S. Nuclear Regulatory Commission |
| NUREG | Nuclear Regulatory |
| OOS | Out of Sequence |
| ORH | Office of Radiological Health |
| ORO | Offsite Response Organization |
| PA | Public Address (System) |
| PA | Public Affairs |
| PAD | Protective Action Decision |
| PAG | Protective Action Guideline |
| PAR | Protective Action Recommendation |
| PBAPS | Peach Bottom Atomic Powers Station |
| PBEX | Peach Bottom Full Participation Exercise |
| PEMA | Pennsylvania Emergency Management Agency |
| PIO | Public Information Officer |
| POC | Points of Contact |
| PPE | Personal Protective Equipment |
| PPP | Post-Plume Phase |
| PRD | Permenant Record Dosimeters |
| PSAP | Public Safety Answering Point |
| PSC | Maryland Public Service Commision |
| RAC | Regional Assistance Committee |
| RAD | Radiation Absorbed Dose |
| REA | Radiation Emergency Area |
| REP | Radiological Emergency Plan |
| REPP | Radiological Emergency Preparedness Program |
| RO | Radiological Officer |
| RPM | Radiological Emergency Preparedness Program Manual |
| SAE | Site Area Emergency |
| SAL | State Activation Level |

| | |
|---|---|
| SCF | State Coordinating Function |
| SEOC | State Emergency Operations Center |
| SHA | State Highway Administration |
| SimCell | Simulation Cell |
| SME | Subject Matter Expert |
| SO | State Official |
| SOC | State Operations Center |
| SOP | Standard Operating Procedure |
| TACP | Traffic and Access Control Point |
| TCP | Traffic Control Point |
| UTL | Universal Task List |