



Surry Power Station

Surry, Virginia

After Action Report

Exercise Date – July 18, 2023

Radiological Emergency Preparedness (REP) Program

October 3, 2023



FEMA

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Executive Summary

On July 18, 2023, a full participation Plume Exposure Pathway exercise was conducted and evaluated for the 10-Mile Emergency Planning Zone (EPZ) around the Surry Power Station (SPS) 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 October 26, 2021.

Out-of-Sequence demonstrations were conducted on June 21-22, 2023. 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 SPS. 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, five Level 2 Findings, and four Plan Issues. The five Level 2 Findings were successfully resolved following remedial demonstrations and are now closed. A Level 2 finding assessed to the Virginia Department of Emergency Management Joint Information Center during the 2022 North Anna Power Station Exercise and a separate Level 2 finding assessed to the James City County Emergency Operations Center during the 2021 Surry Power Station Exercise were also successfully resolved and are now closed.

A Level 1 Finding is defined by the FEMA Radiological Emergency Preparedness (REP) Program Manual as follows: “An observed or identified inadequacy of organizational performance in an assessment activity that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in 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 assessment activity 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 Virginia, and the six risk jurisdictions of the City of Newport News, the City of Williamsburg, Isle of Wight County, James City County, Surry County and York County, and the support jurisdiction of New Kent 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 Details,” “Planning Team Leadership,” and the “Participating Organizations.”

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

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

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.

Section 1: Exercise Overview

1.1. Exercise Details

Exercise Name

Surry Power Station Radiological Emergency Preparedness Exercise

Type of Exercise

Plume

Exercise Date

July 18, 2023

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Release

1.2. Planning Team Leadership

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1.3. Participating Organizations

Agencies and organizations of the following jurisdictions participated in the SPS exercise:

State Jurisdiction

Commonwealth of Virginia

- Virginia 211
- Virginia Cooperative Extension
- Virginia Department of Agriculture & Consumer Services
- Virginia Department of Emergency Management
- Virginia Department of Emergency Management Joint Information Center (JIC)
- Virginia Department of Emergency Management Situational Awareness Unit (SAU)
- Virginia Department of Health, Office of Radiological Health (VHD/ORH)
- Virginia Department of Social Services
- Virginia Department of Transportation (VDOT)
- Virginia Emergency Support Team (VEST)
- Virginia Information Technologies Agency

Risk-Area Jurisdictions

City of Newport News

- Newport News Department of Emergency Management
- Newport News Emergency Communications Center
- Newport News Engineering/Traffic Engineering
- Newport News Fire Department
- Newport News Fire Marshal's Office
- Newport News General Services
- Newport News Hazmat
- Newport News Human Services
- Newport News IT/GIS
- Newport News Police Department
- Newport News Public Schools
- Newport News Public Works Department
- Newport News Radio Communications
- Newport News Water Works Department
- Denbigh High School

City of Williamsburg

- City of Williamsburg City Manager
- City of Williamsburg Fire Chief
- City of Williamsburg Fire & Emergency Medical Services
- City of Williamsburg Police Department
- City of Williamsburg Department of Public Works
- City of Williamsburg Human Services Department
- City of Williamsburg Public Safety Answering Point
- City of Williamsburg College of William & Mary
- Colonial of Williamsburg
- Hampton Peninsula Health District
- Coastal Virginia American Red Cross

- City of Williamsburg Community Emergency Response Team
- City of Williamsburg Amateur Radio Emergency Services
- City of Williamsburg Riverside Doctors Hospital
- City of Williamsburg - James City County Public Schools
- City of Williamsburg Department of Transportation

Isle of Wight County

- Isle of Wight County Emergency Management Office
- Isle of Wight County Sheriff's Office
- Isle of Wight County Administrator
- Isle of Wight County Department of Emergency Services
- Isle of Wight County School District
- Isle of Wight County Public Information Officer
- Isle of Wight County GIS
- Virginia Tech Cooperative Extension
- Isle of Wight Amateur Radio Emergency Services District 5
- Isle of Wight County Department of Social Services
- Isle of Wight County Department of Human Resources
- Isle of Wight Emergency Medical Services Unit 64
- Isle of Wight Health Department
- Portsmouth Fire Department

James City County

- James City County Emergency Management
- James City County Administration
- James City County Geographic Information System
- James City County Police Department
- James City County Department of Social Services
- James City County Fire Department
- James City County Service Authority
- James City County Facilities
- James City County Information Resources Management
- James City County General Services
- James City County Human Resources
- James City County Parks & Recreation
- Amateur Radio Emergency Services / Radio Amateur Civil Emergency Service
- Clara Byrd Baker Elementary School
- Williamsburg – James City County Public Schools Transportation

Surry County

- Surry County Office of Emergency Services
- Surry County Department of Social Services
- Surry County School District
- Surry County School District Transportation Department
- Surry County Parks and Recreation

- Surry County Sheriff's Office
- Surry County Department of Youth and Family Resources

York County

- York County Fire and Life Safety
- York – Poquoson Sheriff's Office
- York County 911
- York County School Division
- York County Radio Amateur Civil Emergency Services
- Colonial Behavioral Health
- York County Emergency Communications
- York County Public Affairs
- York County Social Services
- York Poquoson Department of Social Services
- Hampton Peninsula Health District
- CERT
- York County Department of Health

Support Jurisdictions

New Kent County

- New Kent County Sheriff's Office
- New Kent County Fire-Rescue
- New Kent County Parks & Recreation
- New Kent County Administration
- New Kent County Attorney
- New Kent County Emergency Management
- York – Poquoson Sheriff's Office

Private/Volunteer Organizations

- Dominion Energy
- Riverside Regional Medical Center
- Virginia Commonwealth University (VCU) Hospital
- Henrico County Division of Fire
- Radio Amateur Civil Emergency Services (RACES)

Federal Jurisdictions

- Federal Emergency Management Agency
- Federal Bureau of Investigation

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 radiological planning and response. FEMA's activities were conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island accident in March 1979.

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

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

Representatives of these agencies serve on the Region 3 Regional Assistance Committee (RAC), which is chaired by FEMA. A Radiological Emergency Preparedness Plume Exposure Pathway Exercise was conducted on July 18, 2023, to assess the capabilities of State and local emergency preparedness organizations in implementing their Radiological Emergency Response Plans (RERP) and procedures to protect the public health and safety during a radiological emergency involving the SPS.

The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency. The findings presented in this report are based on the evaluations of the Federal evaluation team, with final determinations made by the FEMA Region 3 RAC Chairperson and approved by FEMA Headquarters.

These reports are provided to the NRC and participating States. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency response capabilities.

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

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

Emergency Planning Zone Description:

The SPS, located on the James River in Surry County, Virginia, is owned and operated by Dominion Energy. Two pressurized water reactors generate an electrical output of 855.2 megawatts each. Unit 1 received its license in July 1972 and began commercial operation in December 1972. Unit 2 was licensed in March of 1973 and began commercial operation in May 1973. An Independent Spent Fuel Storage Installation at SPS is used to store the spent fuel produced by the two units. The spent fuel is stored in sealed dry storage surface casks placed on concrete slabs within the fenced-in area onsite.

The site encompasses 840 acres south of, and adjacent to, the Hog Island Wildlife Management Area and is bordered by the James River on both sides of the peninsula. The site is at the end of State Route 650, eight miles from the town of Surry, seven miles south of Colonial Williamsburg, and four and a half miles west-northwest of Fort Eustis.

The topography within 10-miles of the site covers parts of Surry, Isle of Wight, York, and James City counties and parts of the independent cities of Newport News and Williamsburg. Surry and Isle of Wight counties are predominantly rural and characterized by farmland, wooded tracts, and marshy wetlands. York and James City counties along with the cities of Newport News and Williamsburg are more urban.

The 10-mile EPZ contains an estimated residential population of 162,426. Several large tourist-oriented sites lie within the 10-mile EPZ, such as historic Williamsburg, Jamestown, Busch Gardens, and Water Country USA. Busch Gardens and Water Country USA could have more than 50,000 visitors daily.

The SPS 50-mile Ingestion Pathway Zone encompasses 45 Ingestion jurisdictions, which includes 6 jurisdictions in North Carolina. The population within the affected jurisdictions is approximately 3,241,926.

The tip of the peninsula, north of the site, is very marshy and nearly divided from the remainder of the peninsular by numerous streams and creeks. The ground surface at the site is generally flat, with banks sloping down to the river and to a wildlife management area. Preconstruction elevation within the site boundaries ranges from river level to a maximum of 39 feet. Station ground level has been established at an elevation of 26.5 feet about the U.S. Coast Guard and U.S. Geological Survey mean sea-level datum at Hampton Roads, Virginia. Beyond the site boundaries, elevation within a five-mile radius range from 40 to 60 feet. Farther away, the countryside is generally flat, with few elevations higher than 200 feet within 50-miles. Much of the region is characterized by marshes, extensive swamps, small streams, and pocosins. Water tables are very near the surface throughout the entire area, accounting for the large amount of surface water. Drainage throughout the

area is toward Hampton Roads and the mouth of the Chesapeake Bay. The regions to the north, south, and west of the site, except for the Williamsburg area, are principally rural and agricultural.

The Commonwealth of Virginia has adopted the FEMA Integrated Public Alert and Warning System (IPAWS)-Wireless Emergency Alerts (WEA) as the primary method to alert and notify the public in the event of an emergency at SPS.

2.2. Exercise Objectives and Core Capabilities

The objectives of the SPS 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 EPZ. Core capabilities-based planning allowed the exercise planning team to develop the objective and observe associated outcomes through a framework of specific action items. Additionally, the objective and capability target assessed met Radiological Emergency Preparedness Program Manual guidance.

The core capabilities demonstrated during this drill were:

- Operational Coordination
- Planning
- Environmental Response/Health and Safety
- Public Information and Warning
- Mass Care Services
- Public Health
- Healthcare and Emergency Medical Services
- Situational Assessment
- Critical Transportation
- Housing
- Natural and Cultural Resources
- Operational Communications
- Access Control/Identity Verification
- On-Scene Security
- Protection
- Law Enforcement

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 FEMA IPAWS-WEA. All these communication resources were employed and evaluated, and non-public exercise messages were generated via IPAWS-WEA and EAS. Media information was prepared but not actually released.

An essential capability of the REP Program 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 REP Program. 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. Exercise Scenario Summary

The metrological conditions remain unchanged throughout the scenario. The wind direction was from 7 degrees, north to south, the wind was 14 miles per hour (mph) and the atmospheric stability class was E.

At 0800 the exercise begins. For the postulated event, the loss of two fission product barriers and loss or potential loss of a third fission product barrier.

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

At 0825 SPS declares a NOTIFICATION OF UNUSAL EVENT Emergency Classification Level (ECL).

At 0855 SPS declares an ALERT ECL due to the loss of Reactor Coolant System boundaries. OROs mobilize personnel and staff emergency facilities.

At 1025 the SPS declares a SITE AREA EMERGENCY due to a loss or potential loss of two barriers, however, did not exceed Environmental Protection Agency Protective Action Guidelines. OROs may make protective/precautionary actions in accordance with plans and procedures.

At 1145 SPS declares a GENERAL EMERGENCY based on utility dose assessment indicating doses greater than 1 rem Total Effective Dose Equivalent (TEDE) or 5 rem adult and child thyroid CDE at or beyond the site boundary.

At 1200 the Licensee makes a Protective Action Recommendation (PAR) to the Commonwealth of Virginia to evacuate 0-5 miles all sectors and 5-10 miles in sectors H, J, K. Decision makers consider the PAR and make protective actions based on plans and procedures.

At 1457 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 SPS Biennial Plume Exposure Pathway REP Exercise on July 18, 2023. The Exercise was conducted 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 SPS.

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

3.2. Exercise Summary Results of Evaluation

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

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

Tables 3.1 - Summary of Exercise Evaluation

Table 3.1a: Exercise Evaluation Findings and Issues by Classification

Location	Capability Target	Capability Target Description	Status
Corporate Emergency Response Center (VDEM & VHD/ORH)	2.1	Emergency Worker Exposure Control Decision Making – Process	P – Open
	4.5	Plume Phase Analysis and Dose Assessment	
Smithfield Middle School Evacuation Assembly Center	1.2	Direction and Control	L2 – Closed
	3.1	Communications	
	5.1	Monitoring, Decontamination, Sheltering and Registration of Evacuees	
	5.2	Monitoring, and Decontamination of Emergency Workers, Equipment	
	2.2	Emergency Worker Exposure Control Management	P – Open
	5.1	Monitoring, Decontamination, Sheltering and Registration of Evacuees	
Virginia Commonwealth University Hospital	5.3	Transport and Treatment of Contaminated, Injured Individuals	L2 – Closed

Table 3.1b: Exercise Evaluation Assessments Met

Location	Capability Target	Capability Target Description	Status
Objective 1: Emergency Operations Management			
City of Newport News EOC - Emergency Operations Center, City, Risk	1.1	Mobilization	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	1.1	Mobilization	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	1.1	Mobilization	M
Corporate Emergency Response Center (CERC) – VDH/VDEM	1.1	Mobilization	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
James City County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
New Kent County EOC – Emergency Operations Center, County, Support	1.1	Mobilization	M
Surry County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
State Field Monitoring Team 1 – Field Monitoring, State	1.1	Mobilization	M
State Field Monitoring Team 2 – Field Monitoring, State	1.1	Mobilization	M

Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	1.1	Mobilization	M
Virginia Joint Information Center (JIC) – Joint Information Center, State	1.1	Mobilization	M
York County EOC - Emergency Operations Center, County, Risk	1.1	Mobilization	M
City of Newport News Traffic & Access Control Points - City, Risk	1.1	Mobilization	M
City of Newport News Transportation Dependent - City, Risk	1.1	Mobilization	M
City of Williamsburg Traffic & Access Control Points - City, Risk	1.1	Mobilization	M
City of Williamsburg Transportation Dependent - City, Risk	1.1	Mobilization	M
Isle of Wight County Traffic & Access Control Points – County Risk, Risk	1.1	Mobilization	M
Isle of Wight County Transportation Dependent - County, Risk	1.1	Mobilization	M
James City County Traffic & Access Control Points – County Risk, Risk	1.1	Mobilization	M
James City County Transportation Dependent - County, Risk	1.1	Mobilization	M
Surry County Traffic & Access Control Points – County Risk, Risk	1.1	Mobilization	M
Surry County Transportation Dependent - County, Risk	1.1	Mobilization	M
York County Traffic & Access Control Points – County Risk, Risk	1.1	Mobilization	M
York County Transportation Dependent - County, Risk	1.1	Mobilization	M
City of Newport News EOC - Emergency Operations Center, City, Risk	1.2	Direction and Control	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	1.2	Direction and Control	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	1.2	Direction and Control	M
Corporate Emergency Response Center (CERC)	1.2	Direction and Control	M
Grafton Middle School – Evacuation Assembly Center	1.2	Direction and Control	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
James City County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
New Kent County EOC – Emergency Operations Center, County, Support	1.2	Direction and Control	M
Smithfield Middle School – Evacuation Assembly Center	1.2	Direction and Control	M

Surry County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	1.2	Direction and Control	M
York County EOC - Emergency Operations Center, County, Risk	1.2	Direction and Control	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	1.3	Protective Action Recommendations	M
Corporate Emergency Response Center (CERC)	1.3	Protective Action Recommendations	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	1.3	Protective Action Recommendations	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	1.4	Protective Action Decisions for the Plume Phase	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	1.4	Protective Action Decisions for the Plume Phase	M
City of Newport News EOC - Emergency Operations Center, City, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
Clara Byrd Baker Elementary School – School	1.5	Protective Action Decision Implementation for the Plume Phase	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	1.5	Protective Action Decision Implementation for the Plume Phase	M
Denbigh High School – School	1.5	Protective Action Decision Implementation for the Plume Phase	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
James City County EOC - Emergency Operations Center, County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
L.P. Jackson Middle School – School	1.5	Protective Action Decision Implementation for the Plume Phase	M
Queens Lake Middle School	1.5	Protective Action Decision Implementation for the Plume Phase	M
Surry County EOC - Emergency Operations Center, County, 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
City of Newport News Transportation Dependent - City, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
City of Williamsburg Transportation Dependent - City, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
Isle of Wight County Transportation Dependent - County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
James City County Transportation Dependent - County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M

Surry County Transportation Dependent - County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
York County Transportation Dependent - County, Risk	1.5	Protective Action Decision Implementation for the Plume Phase	M
Objective 2: Exposure Control			
Corporate Emergency Response Center (CERC) – VDH/VDEM	2.1	Emergency Worker Exposure Control Decision-Making Process	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	2.1	Emergency Worker Exposure Control Decision-Making Process	M
City of Newport News EOC - Emergency Operations Center, City, Risk	2.2	Emergency Worker Exposure Control Management	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	2.2	Emergency Worker Exposure Control Management	M
Grafton Middle School – Evacuation Assembly Center	2.2	Emergency Worker Exposure Control Management	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	M
Isle of Wight County EMS – Emergency Medical Services, County, Risk	2.2	Emergency Worker Exposure Control Management	M
James City County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	M
Smithfield Middle School – Evacuation Assembly Center	2.2	Emergency Worker Exposure Control Management	M
Riverside Regional Hospital – Medical Services	2.2	Emergency Worker Exposure Control management	M
State Field Monitoring Team 1 – Field Monitoring, State	2.2	Emergency Worker Exposure Control Management	M
State Field Monitoring Team 2 – Field Monitoring, State	2.2	Emergency Worker Exposure Control Management	M
Surry County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	M
Virginia Commonwealth University (VCU) Hospital – Medical Services	2.2	Emergency Worker Exposure Control Management	M
York County EOC - Emergency Operations Center, County, Risk	2.2	Emergency Worker Exposure Control Management	M
York County EMS – Emergency Medical Services, County, Risk	2.2	Emergency Worker Exposure Control Management	M
City of Newport News Traffic & Access Control Points - City, Risk	2.2	Emergency Worker Exposure Control Management	M
City of Newport News Transportation Dependent - City, Risk	2.2	Emergency Worker Exposure Control Management	M
City of Williamsburg Traffic & Access Control Points - City, Risk	2.2	Emergency Worker Exposure Control Management	M
City of Williamsburg Transportation Dependent - City, Risk	2.2	Emergency Worker Exposure Control Management	M
Isle of Wight County Traffic & Access Control Points – County, Risk	2.2	Emergency Worker Exposure Control Management	M
Isle of Wight County Transportation Dependent - County, Risk	2.2	Emergency Worker Exposure Control Management	M

James City County Traffic & Access Control Points – County, Risk	2.2	Emergency Worker Exposure Control Management	M
James City County Transportation Dependent - County, Risk	2.2	Emergency Worker Exposure Control Management	M
Surry County Traffic & Access Control Points – County Risk, Risk	2.2	Emergency Worker Exposure Control Management	M
Surry County Transportation Dependent - County, Risk	2.2	Emergency Worker Exposure Control Management	M
York County Traffic & Access Control Points – County Risk, Risk	2.2	Emergency Worker Exposure Control Management	M
York County Transportation Dependent - County, Risk	2.2	Emergency Worker Exposure Control Management	M
Objective 3: Alert and Notification			
City of Newport News EOC - Emergency Operations Center, City, Risk	3.1	Communications	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	3.1	Communications	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	3.1	Communications	M
Corporate Emergency Response Center (CERC) – VDH/VDEM	3.1	Communications	M
Grafton Middle School – Evacuation Assembly Center	3.1	Communications	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
James City County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
New Kent County EOC – Emergency Operations Center, County, Support	3.1	Communications	M
Smithfield Middle School – Evacuation Assembly Center	3.1	Communications	M
State Field Monitoring Team 1 – Field Monitoring, State	3.1	Communications	M
State Field Monitoring Team 2 – Field Monitoring, State	3.1	Communications	M
Surry County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	3.1	Communications	M
Virginia Joint Information Center (JIC) – Joint Information Center, State	3.1	Communications	M
York County EOC - Emergency Operations Center, County, Risk	3.1	Communications	M
City of Newport News Traffic & Access Control Points - City, Risk	3.1	Communications	M
City of Newport News Transportation Dependent - City, Risk	3.1	Communications	M
City of Williamsburg Traffic & Access Control Points - City, Risk	3.1	Communications	M

City of Williamsburg Transportation Dependent - City, Risk	3.1	Communications	M
Isle of Wight County Traffic & Access Control Points – County Risk, Risk	3.1	Communications	M
Isle of Wight County Transportation Dependent - County, Risk	3.1	Communications	M
James City County Traffic & Access Control Points – County Risk, Risk	3.1	Communications	M
James City County Transportation Dependent - County, Risk	3.1	Communications	M
Surry County Traffic & Access Control Points – County Risk, Risk	3.1	Communications	M
Surry County Transportation Dependent - County, Risk	3.1	Communications	M
York County Traffic & Access Control Points – County Risk, Risk	3.1	Communications	M
York County Transportation Dependent - County, Risk	3.1	Communications	M
City of Newport News EOC - Emergency Operations Center, City, Risk	3.2	Alert and Notification to the Public	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	3.2	Alert and Notification to the Public	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	3.2	Alert and Notification to the Public	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	3.2	Alert and Notification to the Public	M
James City County EOC - Emergency Operations Center, County, Risk	3.2	Alert and Notification to the Public	M
Surry County EOC - Emergency Operations Center, County, Risk	3.2	Alert and Notification to the Public	M
York County EOC - Emergency Operations Center, County, Risk	3.2	Alert and Notification to the Public	M
City of Newport News EOC - Emergency Operations Center, City, Risk	3.3	Emergency Information and Instructions for the Public and News Media	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	3.3	Emergency Information and Instructions for the Public and News Media	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	3.3	Emergency Information and Instructions for the Public and News Media	M
James City County EOC - Emergency Operations Center, County, Risk	3.3	Emergency Information and Instructions for the Public and News Media	M
New Kent County EOC – Emergency Operations Center, County, Support	3.3	Emergency Information and Instructions for the Public and News Media	M
Surry County EOC - Emergency Operations Center, County, Risk	3.3	Emergency Information and Instructions for the Public and News Media	M
Virginia Joint Information Center (JIC) – Joint Information Center, State	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

Objective 4: Detect, Measure, Sample, Analyze, and Assess			
Corporate Emergency Response Center (CERC)	4.1	Field Monitoring Teams Management	M
State Field Monitoring Team 1 – Field Monitoring, State	4.2	Plume Phase Measurements and Sampling	M
State Field Monitoring Team 2 – Field Monitoring, State	4.2	Plume Phase Measurements and Sampling	M
Corporate Emergency Response Center (CERC)	4.5	Plume Phase Analysis and Dose Assessment	M
Virginia Accident Assessment Center (VDH/ORH) – Accident Assessment Center, State	4.5	Plume Phase Analysis and Dose Assessment	M
Objective 5: Operate			
Grafton Middle School – Evacuation Assembly Center	5.1	Monitoring, Decontamination, Sheltering, and Registration of Evacuees	M
Smithfield Middle School – Evacuation Assembly Center	5.1	Monitoring, Decontamination, Sheltering, and Registration of Evacuees	M
Grafton Middle School – Evacuation Assembly Center	5.2	Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles	M
Smithfield Middle School – Evacuation Assembly Center	5.2	Monitoring and Decontamination of Emergency Workers, Equipment, and Vehicles	M
Isle of Wight County EMS – Emergency Medical Services, County, Risk	5.3	Transportation and Treatment of Contaminated, Injured Individuals	M
Riverside Regional Hospital – Medical Services	5.3	Transportation and Treatment of Contaminated, Injured Individuals	M
Virginia Commonwealth University (VCU) Hospital – Medical Services	5.3	Transportation and Treatment of Contaminated, Injured Individuals	M
York County EMS – Emergency Medical Services, County, Risk	5.3	Transportation and Treatment of Contaminated, Injured Individuals	M
City of Newport News EOC - Emergency Operations Center, City, Risk	5.4	Traffic and Access Control	M
City of Williamsburg EOC - Emergency Operations Center, City, Risk	5.4	Traffic and Access Control	M
Commonwealth of Virginia EOC - Emergency Operations Center, State	5.4	Traffic and Access Control	M
Isle of Wight County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M
James City County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M
New Kent County EOC – Emergency Operations Center, County, Support	5.4	Traffic and Access Control	M
Surry County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M
York County EOC - Emergency Operations Center, County, Risk	5.4	Traffic and Access Control	M
City of Newport News Traffic & Access Control Points - City, Risk	5.4	Traffic and Access Control	M

City of Williamsburg Traffic & Access Control Points - City, Risk	5.4	Traffic and Access Control	M
Isle of Wight County Traffic & Access Control Points – County Risk, Risk	5.4	Traffic and Access Control	M
James City County Traffic & Access Control Points – County Risk, Risk	5.4	Traffic and Access Control	M
Surry County Traffic & Access Control Points – County Risk, Risk	5.4	Traffic and Access Control	M
York County Traffic & Access Control Points – County Risk, Risk	5.4	Traffic and Access Control	M

3.3. Capability Target Evaluation Summaries

3.3.1 State Jurisdictions

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

3.3.1.1 Commonwealth of Virginia

3.3.1.1.1 Commonwealth of Virginia Emergency Operations Center (EOC)

- a. Met: 1.1, 1.2, 1.3, 1.4, 1.5, 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 Virginia Joint Information Center (JIC)

- a. Met: 1.1, 3.1, 3.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: ONE

ISSUE NO: 41-22-3.3-L2-01 CAPABILITY TARGET: Alert and Notification of the Public.

CONDITION:

1. The Virginia Department of Emergency Management (VDEM) Director of Communications and Chief Agency Spokesperson did not consider dissemination of press releases for the following actions, in accordance with procedures:
 - Closure of Lake Anna (Department of Wildlife Resources [DWR]/Department of Conservation and Recreation [DCR]) – NAPS Only
 - Flight restrictions (Federal Aviation Administration [FAA]/Virginia

- Department of Aviation [DOAV])
 - Rail service termination (AMTRAK, CSX, Norfolk Southern)
 - State parks closure news release(s) as needed (Department of Wildlife Resources [DWR]/Department of Conservation and Recreation [DCR]).
2. During the media briefing, scheduled at 1335, the VDEM Chief Agency Spokesperson did not speak to traffic impediments on evacuation routes, did not coordinate with local governments in the preparation and dissemination of news releases, and provided inaccurate information regarding pets at Evacuation Assembly Centers (EACs).

POSSIBLE CAUSE: Procedures for dissemination of press releases were not adhered to. Relevant information was either not conveyed or inaccurate during the media briefing.

REFERENCE: NUREG-0654/FEMA-REP-1, Rev. 2: (A.4, C.2.a, G.1, J.11, J.11a, J.11.b, J.11.c, J.11.d, J.11.e, J.11.g, J.13, J.13.f and O.1), Commonwealth of Virginia Radiological Emergency Response Plan, Appendix 9, External Affairs and Public Information, Section III, A and B, IV. B2, B4a-g, B6, B9.

EFFECT: The public would not receive timely and accurate information causing confusion and roadway congestion, further delaying the evacuation process.

CORRECTIVE ACTION: VDEM implemented the following recommendations to address the condition:

- Adequate direction and control was exerted over the public information function.
 - A public information staff member was designated to oversee the receipt and coordination of local news releases received at VDEM to ensure message is timely and accurate.
 - A procedure was created for the coordination effort between the counties and the State to address messaging coordination with locals.
 - A procedure was created to coordinate local traffic impediment re-routes with the VDEM public information for dissemination to the media and public.
- f. Prior Issues – Unresolved: NONE

3.3.1.1.3 Virginia Department of Health/Office of Radiological Health (VDH/ORH)

- 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 Virginia State Field Monitoring Team 1

- a. Met: 1.1, 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

3.3.1.1.5 Virginia State Field Monitoring Team 2

- a. Met: 1.1, 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 Corporate Emergency Response Center (VDEM & VDH/ORH)

- a. Met: 1.1, 1.2, 1.3, 2.1, 3.1, 4.1, 4.5
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: TWO

Issue NO: 62-23-4.5-P-008

CONDITION: The Virginia Department of Health (VDH) Accident Assessor in the Corporate Emergency Response Center (CERC) used incorrect inputs into RASCAL, resulting in erroneous dose projections. Additionally, the RASCAL dose projection results were not within the required factor of 10 of utility MIDAS dose projection results. The dose projections were forwarded to the Virginia Emergency Operations Center (VEOC) for review before providing to decision-makers. The dose projections were reviewed in the VEOC by the Radiological Operations Officer (ROO); however, according to the Office of Radiological Health (ORH) plans, the VDH Exposure Control Officer (ECO), is qualified to be tasked with backup dose projections, but was not provided the dose projections to review or reconstruct until after Protective Action Decisions (PADs) had been made. As such, the erroneous dose projections were used in making PADs for the public.

POSSIBLE CAUSE: The Accident Assessor utilized a RASCAL user guide that was not part of an approved procedure. The guide did not fully nor clearly delineate selection of a release pathway and used examples of ground releases only. As such, the Accident Assessor used a plume height of 32.8 feet instead of the correct plume height of 350 feet. Additionally, the RASCAL release duration and dose projection times were not consistent with the MIDAS inputs. The ECO was not utilized to review dose projection inputs prior to ESF 8 Lead making recommendations. Per interview with VDH staff, two experienced accident assessors had recently left the agency, and the Accident Assessor in the CERC had received just in time RASCAL training prior to the exercise. The ECO was available remotely but was not utilized to reconstruct or review the dose projections in question.

REFERENCE:

1. NUREG-0654/FEMA-REP-1, Rev 2, planning standard I.8.

2. Commonwealth of Virginia, Department of Health, Office of Radiological Health, Radiological Emergency Response Plan and Emergency Plan Implementing Procedures, Appendix 17.2, Revision 11, July 2023.
3. VDH/ORH Radiological Emergency Response Plan, Appendix 17.2 and 17.4

EFFECT: In this scenario, the net effect of the dose projection errors likely would not have changed the PADs to evacuate 5 miles 360o and downwind 5 – 10 miles; however, under other circumstances, similar dose projection errors could result in PADs that did not effectively protect the public.

RECOMMENDATION:

- The VDH needs to update procedures to include validated and approved RASCAL guidance.
- Provide additional training for Accident Assessors, including RASCAL and the Radiological Accident Assessment Course (RAAC).
- Ensure the ECO is utilized for detailed review of dose projection inputs and to validate dose projections prior to submittal to decision-makers for making PADs for the public.
- Ensure adequate numbers of Accident Assessors and ECOs are trained to provide sufficient depth for 24-hour shift cover.

Issue NO: 62-23-2.1-P-009

CONDITION: Evaluation Criterion K.2.b requires that plans/procedures reference or include the process for authorizing and documenting emergency workers volunteering to receive doses more than the specified dose limits described in the plans/procedures, including providing a description of the full reporting and decision chain process (i.e., from the emergency worker requesting and obtaining authorization to communicating back to the emergency worker with the final decision). Plans/procedures must also include the briefing and documentation processes for communicating radiation and health risks involved for exceeding dose limits, including providing the source of information used to brief volunteers. The Commonwealth of Virginia Radiological Emergency Response Plan, Hazard Specific Annex #1, dated July 2023, Revision 1.6, Tab A to Appendix 7, specifically states that there are certain activities where doses above five (5) Rem cannot be avoided and that in such situations, incident commanders and other responders need to understand the risk posed by such exposures to make informed decisions. It also states that for all exposures, emergency workers must be fully informed of the risks of exposure they may experience, including numerical estimates of the risk of delayed health effects, and must be trained, to the extent feasible, on actions to be taken. Then each emergency worker should make an informed decision as to how much radiation risk they are willing to accept to complete a particular mission. It also states that a Decision Dose can be used by the incident commander as a tool to address the need to, and the consequences of, exposing emergency workers to higher doses to accomplish Mission Critical actions. Despite the Commonwealth procedures/plans discussing this issue it does not describe the process, documentation, or authorization requirements, to obtain doses more than the Environmental Protection Agency Protective Action Guidelines.

POSSIBLE CAUSE: Although the Commonwealth of Virginia initially uses a default exposure control ratio Total Effective Dose Equivalent (TEDE) to Deep Dose Equivalent (DDE) of two (2) during a radiological incident, and does periodically request that the licensee provide a current exposure control ratio based on the current plant conditions, the plans/procedures fail to acknowledge, that without a change in the ratio, a process needs to be developed to extend emergency worker exposures, if necessary, for critical/lifesaving missions.

REFERENCE:

1. NUREG-0654/FEMA-REP-1, Rev. 2 (K.2.b, and O.1).
2. FEMA Radiological Emergency Preparedness (REP) Program Manual, December 2019 (Capability Target 2.1, 2.2).
3. EPA-400-R-92-001, Environmental Protection Agency, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (and revisions).
4. Commonwealth of Virginia Radiological Emergency Response Plan Hazard Specific Annex #1, July 2023 Revision 1.6 (Appendix 7).

EFFECT: The ability to quickly process and approve emergency worker dose more than the Commonwealth of Virginia emergency worker administrative limits and/or the Environmental Protection Agency Protective Action Guidelines could become critical in a commercial Nuclear Power Plant radiological incident. Without a clear approval process, necessary forms, or documentation to ensure emergency workers are fully aware of the risks involved, quick response to protecting critical infrastructure necessary for public welfare, lifesaving, or protection of large populations could be hindered/hampered or prevented.

RECOMMENDATION:

1. Determine the process required for dose extensions, outside of the exposure control ratio process, and beyond the Commonwealth of Virginia emergency worker administrative limits and/or the Environmental Protection Agency Protective Action Guidelines, for emergency workers.
2. Determine who the approval authority is by name/title, to grant extension approvals beyond the Commonwealth of Virginia emergency worker administrative limits and/or the Environmental Protection Agency Protective Action Guidelines.
3. Determine the documentation requirements for dose extension approvals beyond the Commonwealth of Virginia emergency worker administrative limits and/or the Environmental Protection Agency Protective Action Guidelines.
4. Determine the requirements to ensure emergency workers are aware of radiological risks, prior to accepting critical mission dose extensions.
5. Revise the Commonwealth of Virginia Radiological Emergency Response Plan Hazard Specific Annex #1, to include a process to exceed administrative dose guidelines.
6. Revise the Commonwealth of Virginia Office of Radiological Health Radiological Emergency Response Plan Emergency Plan Implementing Procedures Appendix 17.13 Forms, to include a form to document dose extension approvals and proof of knowledge and/or briefing of risks.

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

3.3.2 Risk Jurisdictions

In summary, the status of DHS/FEMA capability targets for the risk jurisdictions are as follows:

3.3.2.1 City of Newport News

3.3.2.1.1 City of Newport News 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

3.3.2.1.2 City of Newport News TCP/ACP

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

3.3.2.1.3 City of Newport News Transportation Dependent

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

3.3.2.1.4 Denbigh 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

3.3.2.2 City of Williamsburg

3.3.2.2.1 City of Williamsburg 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

3.3.2.2.2 City of Williamsburg TCP/ACP

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

3.3.2.2.3 City of Williamsburg Transportation Dependent

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

3.3.2.2.4 Williamsburg – James City County Public Schools

- 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

3.3.2.3 Isle of Wight County

3.3.2.3.1 Isle of Wight 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

3.3.2.3.2 Isle of Wight County TCP/ACP

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

3.3.2.3.3 Isle of Wight County Transportation Dependent

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

3.3.2.3.4 Smithfield Middle School Evacuation Assembly Center

- a. Met: 1.2, 2.2, 3.1, 5.1, 5.2
 - b. Level 1 Findings: NONE
 - c. Level 2 Findings: FOUR
- ISSUE NO:** 62-23-1.2-L2-002

CONDITION:

1. The EAC Supervisor failed to demonstrate the capability to provide adequate direction and control of response efforts commensurate with the responsibilities of leadership.
2. The EAC Supervisor did not provide frequent briefings to keep staff informed and situationally aware during the demonstration.
3. The EAC Supervisor did not communicate / coordinate response activities with the Isle of Wight County Emergency Operations Center.

POSSIBLE CAUSE:

1. The EAC Supervisor was not adequately trained on the responsibilities of the position and did not reference position procedures during the demonstration.
2. The EAC Supervisor briefed the staff only upon receiving exercise injects, and the briefings only included the information listed in the injects.

REFERENCE:

1. 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);
2. Isle of Wight County Radiological Emergency Response Plan, August 2021 Appendix 8 Evacuation Assembly Center (EAC) Operation Procedure

EFFECT: The conditions contributed to the lack of communication, coordination, and general situational awareness among the multiple functional areas of the center, which would have caused a significant delay in Isle of Wight County's ability to process evacuees.

CORRECTIVE ACTION: At the conclusion of the initial EAC evaluation, the evaluation team and the controllers discussed the conditions, and it was agreed that an on-the-spot redemonstration would be required to address the conditions. Play was reinitiated and direction and control was then redemonstrated successfully by the EAC Supervisor.

ISSUE NO: 62-23-5.2-L2-004

CONDITION:

1. The Portsmouth Fire Department emergency worker conducting monitoring and decontamination for contaminated emergency workers did not properly execute use of the Ludlum Model 2240-1 Survey Meter monitoring procedures. The probe was not held 1 to 2 inches from the individual, scanning was not conducted slowly, and there was no monitoring conducted of the thyroid gland for potential internal contamination.
2. The emergency worker tool drop area that was set up in accordance with plans and procedures was not utilized or staffed when emergency workers arrived at the EAC to receive monitoring and decontamination.

POSSIBLE CAUSE: Portsmouth Fire Department did not receive adequate training on monitoring individuals using the Ludlum Survey Meter and a lack of direction may have contributed to the tool drop area not being staffed.

REFERENCE:

1. NUREG-0654/FEMA-REP-1, Rev. 2 (K.4 and O.1)
2. Isle of Wight County Radiological Emergency Response Plan, August 2021 Appendix 8 Evacuation Assembly Center (EAC) Operation Procedure

EFFECT: The lack of proper monitoring of emergency workers could lead to not detecting contamination (both internal and external). Emergency workers would not be able to drop off their equipment (survey meters, radios, batons, etc.) for monitoring and decontamination prior to returning to the field for additional duties.

CORRECTIVE ACTION: The demonstration was paused and just in time training was provided to the emergency worker surveying the contaminated emergency worker. Monitoring, decontamination of emergency workers to include the tool drop was redemonstrated during the exercise redemonstration.

ISSUE NO: 62-23-3.1-L2-005

CONDITION:

1. Upon arrival at the EAC, the EAC Supervisor failed to establish communications with the Isle of Wight County Emergency Operations Center (EOC) as prescribed in Step 3 of the “EAC Supervisor” procedure found in Appendix 8 of the Isle of Wight County Radiological Emergency Response Plan (dated 8/21).
2. Initially, EAC staff were neither issued nor able to demonstrate use of a primary communications system and at least one additional communications system in accordance with the Extent of Play Agreement.

POSSIBLE CAUSE:

1. The EAC Supervisor and staff did not reference their procedures during the demonstration.
2. Participants were not trained or briefed on demonstration requirements listed in the Extent of Play Agreement.

REFERENCE:

1. 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)
2. Isle of Wight County Radiological Emergency Response Plan, August 2021 Appendix 8 Evacuation Assembly Center (EAC) Operation Procedure

EFFECT: The absence of established, redundant, and continuously available communications links (both internally amongst the EAC staff as well as externally between the EAC and EOC) could have resulted in delays in message traffic, disruptions to emergency operations/processing of evacuees, and a general lack of situational awareness.

CORRECTIVE ACTION:

1. At the conclusion of the initial EAC evaluation, the evaluation team and the controllers discussed the conditions, and it was agreed that an on-the-spot redemonstration would be required to address each condition. Play was reinitiated and the use of communications (radios) was redemonstrated successfully by the EAC Supervisor and staff.
2. During future demonstrations, ensure that players are briefed on and familiar with requirements listed in the Extent of Play Agreement.

ISSUE NO: 62-23-5.1-L2-007

CONDITION: Staff at the Isle of Wight County Evacuee Monitoring and Decontamination Station at Smithfield Middle School failed to survey for radiological contamination when processing an evacuee vehicle. During the demonstration the staff did not survey the air filter and wheel wells of the evacuee's vehicle per plans and procedures. The team also had the evacuee exit the vehicle and perform a survey of them next to the vehicle which is not part of their plans and procedure.

POSSIBLE CAUSE: Although previously trained and briefed on how to successfully conduct vehicle survey activities, staff did not reference their procedures which identified the areas that are to be surveyed (wheel wells, tires, grill, and air filter) and that did not require evacuees to exit their vehicles for personnel monitoring.

REFERENCE:

1. NUREG 0654/FEMA REP 1, Rev. 2 (J.11.d, J.13, K.4, and O.1
2. Isle of Wight County Radiological Emergency Response Plan, Appendix 8, Evacuation Assembly Center Operating Procedure, Date August 2021

EFFECT: Vehicles could be sent into the clean parking area but contain contamination on them that could later be spread beyond the evacuation assembly center to the public. The staff by conducting a full body survey of the driver at the vehicle monitoring station would increase the time it would take to process vehicle entering the Evacuation Assembly Center and delaying others entry into the center.

CORRECTIVE ACTION: A redemonstration was conducted after staff were provided corrective training for the vehicle monitoring. During the redemonstration the vehicle survey team did successfully conduct a survey of the vehicle in accordance with their plans and procedures.

- d. Plan Issues: TWO

ISSUE NO: 62-23-2.2-P-003

CONDITION: The Isle of Wight County, Evacuation Assembly Center (EAC) located at the Smithfield Middle School lacked a procedure for the proper donning and doffing of PPE.

POSSIBLE CAUSE: The Isle of Wight County Radiological Emergency Response Plan Appendix 8, EAC Operation Procedures 8 /21 currently lacks procedures and a step-by-step guide on how to properly don and doff personal protective

equipment (PPE) and participants were not recently trained on proper donning and doffing techniques, so the skill has diminished overtime.

REFERENCE:

1. NUREG 0654/FEMA REP 1, Rev. 2 M.1. b
2. Isle of Wight County Radiological Emergency Response Plan, August 2021 Appendix 8 Evacuation Assembly Center (EAC) Operation Procedure
3. Isle of Wight County Radiological Emergency Response Plan Appendix 6, Radiological Officer Procedure

EFFECT: The absence of standardized procedures for donning and doffing of PPE could lead to emergency workers inadvertently exposing themselves to contamination.

RECOMMENDATION: Develop step by step donning and doffing procedures to be included in the Isle of Wight County Radiological Emergency Response Plan. Provide training session to ensure that all emergency workers are familiar with the established donning and doffing procedures.

ISSUE NO: 62-23-5.1-P-006

CONDITION: The current plan for personnel monitoring at the Isle of Wight County Evacuee Monitoring and Decontamination Station at Smithfield Middle School has the incorrect procedure for the model of portal monitor that was referenced in their plan. The current plan also does not have a clear procedure for how staff would process an evacuee that is identified as contaminated in the portal monitor to a secondary personnel monitoring and decontamination station.

POSSIBLE CAUSE: An oversight by planners during the plan update may have contributed to the lack of clear procedures for staff to direct contaminated evacuees to a secondary screening station and the omission of the proper portal monitor operating instructions.

REFERENCE:

1. NUREG 0654/FEMA REP 1, Rev. 2 (J.11.d, J.13, K.4, and O.1
2. Isle of Wight County Radiological Emergency Response Plan, Appendix 8, Evacuation Assembly Center Operating Procedure, Date August 2021

EFFECT: The setup and operation of the portal monitor could be delayed and contaminated evacuees may not be properly decontaminated possibly leading to spread of contamination throughout the facility.

RECOMMENDATION: The Isle of Wight County Evacuation Assembly Center (EAC) plan should be revised to reflect the correct use and steps for process an evacuee with the TPM 903B that is being used at the EAC. The update should also include how to process an evacuee who may be identified as contaminated after walking through the portal monitor, a procedure on how to properly conduct a secondary screen of a potentially contaminated evacuee, and the correct forms used when processing the evacuee for potential contamination.

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

3.3.2.3.5 Virginia Commonwealth University Hospital

- a. Met: 2.2, 5.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: ONE
ISSUE NO: 62-23-5.3-L2-001

CONDITION: Staff at the Virginia Commonwealth University Hospital failed to exercise care to control the spread of radiological contamination when processing a patient in the hospital radiation emergency area. During the decontamination process, the decontamination team did not use proper cross-contamination prevention techniques, did not maintain records regarding survey and decontamination, and did not collect or analyze samples, including swabs and skin wipes.

POSSIBLE CAUSE: The attending physician was simultaneously serving as the radiation safety officer and surveyed and decontaminated the patient. The nurse and medic were standing behind the physician and did not participate unless asked by the physician. The attending physician took the survey meter from the decontamination radiological monitor and surveyed the patient.

REFERENCE:

1. 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)
2. Virginia Commonwealth University Hospital Radiation Emergency Plan, January 2023

EFFECT: Contaminated runoff from the evacuee's wound created a cross contamination concern that could spread to the evacuee's leg. Patient care could potentially be jeopardized by not conducting sample analysis and/or not maintain accurate records of radiological exposure.

CORRECTIVE ACTION: A pause to drill play and discussion with the controller and Virginia Commonwealth University Hospital leadership resulted in a redemonstration opportunity. Dominion Energy provided corrective training for the hospital staff and successfully redemonstrated decontamination and contamination control procedures once drill play resumed.

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

3.3.2.3.6 Isle of Wight Emergency Medical Services

- a. Met: 2.2, 5.3

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

3.3.2.4 James City County

3.3.2.4.1 James City 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: ONE

ISSUE FOR CRITERION: 5.b.1 - OROs provide accurate subsequent emergency information and instructions to the public and the news media in a timely manner.

CONDITION: The Public Information Officer (PIO) failed to follow their plan and issue a special needs news release notifying James City County residents of the telephone number to call for special evacuation assistance.

POSSIBLE CAUSE: The PIO failed to follow their plan and check list under the Alert status.

REFERENCE:

- 1. NUREG-0654/FEMA-REP-1, E.5, 7; G.3.a, G.4.a, c
- 2. James City County Radiological Plan – Public Information Officer Procedure

EFFECT: Although information on where to get assistance was provided through the EAS broadcast, residents of James City County that may require special assistance with evacuation could have been delayed.

RECOMMENDATION: Ensure that the PIO team and leadership in the James City Emergency Operation Center (EOC) follow procedures on issuing media releases and confirm that messages are thoroughly reviewed and approved prior to release to the public.

CORRECTIVE ACTION: James City County successfully resolved the Level 2 finding from the 2021 Surry Exercise.

- f. Prior Issues – Unresolved: NONE

3.3.2.4.2 James City County TCP/ACP

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

3.3.2.4.3 James City County Transportation Dependent

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

3.3.2.4.4 Clara Byrd Baker 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

3.3.2.5 Surry County

3.3.2.5.1 Surry 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

3.3.2.5.2 Surry County TCP/ACP

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

3.3.2.5.3 Surry County Transportation Dependent

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

3.3.2.5.4 L.P. Jackson 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

3.3.2.6 York County

3.3.2.6.1 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

3.3.2.6.2 York County TCP/ACP

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

3.3.2.6.3 York County Transportation Dependent

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

3.3.2.6.4 Queens Lake 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

3.3.2.6.5 Grafton Middle / High School Evacuation Assembly Center

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

3.3.2.6.6 Riverside Regional Hospital

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

3.3.2.6.7 York County Fire Life and Safety Emergency Medical Services

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

3.3.3 Support Jurisdictions

In summary, the status of DHS/FEMA capability targets for the support jurisdictions are as follows:

3.3.3.1 New Kent County

3.3.3.1.1 New Kent County Emergency Operations Center

- a. Met: 1.1, 1.2, 3.1, 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

Section 4: Demonstrated Strengths

4.1. State Jurisdiction

4.1.1 Commonwealth of Virginia Emergency Operations Center

The Situation Awareness Unit (SAU) demonstrated a thorough knowledge of the Dominion Electronic Emergency Notification System (DEEMS) procedures. The SAU received a DEENS message for an Alert ECL from Surry Power Station (SPS). The SAU noticed the DEENS message stated “Message Type” update, but the Emergency Action Level (EAL) had changed to FA1.1, which is an Alert EAL. This DEENS message being just an “Update DEENS” did not include a technical support document, which is normally sent with a change in ECL. The SAU contacted the SPS exercise number asking for clarification on the DEENS message sent. A subsequent correct DEENS message was sent as a “Classification DEENS” and included the required technical support document.

Section 5: Conclusion

The Commonwealth of Virginia and risk jurisdictions demonstrated knowledge of their Radiological Emergency Response Plans (RERP) and procedures were adequately implemented during the Surry Power Station Plume Exercise evaluated on July 18, 2023, and the Out-of-Sequence demonstrations conducted June 21-22, 2023.

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 and 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.

FEMA evaluators assessed 78 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

The evaluation of this exercise determined that there were no Level 1 Findings, five Level 2 Findings, and four Plan Issues. The five Level 2 Findings were resolved following remedial demonstrations and are now closed. A Level 2 finding assessed to the VDEM JIC during the 2022 North Anna Power Station Exercise and a separate Level 2 finding assessed to the James City County Emergency Operations Center during the 2021 Surry Power Station Exercise were successfully resolved and are now closed.

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

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

Appendix A: Exercise Timelines

SURRY POWER STATION EXERCISE TIMELINE JULY 18, 2023								
Emergency Classification Level or Event	Time Utility Declared	(Time that notification was received at the listed location)						
		VDEM EOC	Accident Assessment Center	PIO / Virtual JIC	CERC	Field Monitoring Team 1	Field Monitoring Team 2	James City County
Unusual Event	0814	0822	0822	0822	0837	N/A	N/A	0824
Alert	0846	0858	0858	0858	0916	N/A	N/A	0900
Site Area Emergency	1016	1022	1022	1022	1030	N/A	N/A	1023
General Emergency	1136	1143	1143	1143	1157	N/A	N/A	1143
Start of Simulated Radiation Release	0846	0858	0858	0858	0920	N/A	N/A	0900
Termination of Simulated Radiation Release	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0827	0827	0846	0928	N/A	N/A	0903
Governor's Declaration of State of Emergency		0941	0941	0941	0941	N/A	N/A	0950
Exercise Terminated		1457	1457	1457	1434	N/A	N/A	1417
Precautionary Actions: Describe								
Shelter Livestock & Poultry / Stored Feed & Water, 0-10 miles		0952	0952	0952	N/A	N/A	N/A	1000
VDOT terminate operations at Jamestown-Scotland Ferry		1055	1055	1055	N/A	N/A	N/A	1130
USCG Safety Zone on James River & FAA TFR in vicinity of		1148	1148	1148	N/A	N/A	N/A	N/A
Termination of Amtrak, CSX & Norfolk Southern Rail Service in affected area		1157	1157	1157	1213	N/A	N/A	N/A
Early dismissal of schools in the EPZ		N/A	N/A	N/A	N/A	N/A	N/A	0911
First Alert & Notification Sequence		1220	1220	1220	N/A	N/A	N/A	1220
EAS/WEA		1220	1220	1220	N/A	N/A	N/A	1220
Second Precautionary / Protective Actions Describe: •Evacuate PAZs 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18B, 22A, 22B •General Public and PDAFN ingest KI		1217	1217	1217	1217	N/A	N/A	1217
2nd Alert & Notification Sequence		N/A	N/A	N/A	N/A	N/A	N/A	N/A
EAS Message Broadcast		N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Decision - Emergency Workers		1152	1152	1152	1204	1208	1208	1152
KI Decision - General Public		1213	1213	1213	1242	N/A	N/A	1152
KI Decision - Persons with Disabilities or Access Functional Needs		1213	1213	1213	N/A	N/A	N/A	1152

SURRY POWER STATION EXERCISE TIMELINE JULY 18, 2023							
Emergency Classification Level or Event	Time Utility Declared	<i>(Time that notification was received at the listed location)</i>					
		York County	Surry County	City of Newport News	City of Williamsburg	Isle of Wight County	New Kent County
Unusual Event	0814	0822	0822	0822	0822	0822	0822
Alert	0846	0859	0858	0900	0858	0859	0903
Site Area Emergency	1016	1022	1022	1022	1025	1022	1027
General Emergency	1136	1143	1143	1143	1143	1144	1143
Start of Simulated Radiation Release	0846	0919	0858	0900	0901	0859	0851
Termination of Simulated Radiation Release	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0845	0846	0901	0815	0907	0930
Governor's Declaration of State of Emergency		0943	0943	1006	1004	1008	0943
Exercise Terminated		1350	1416	1417	1418	1322	1425
Precautionary Actions: Describe							
Shelter Livestock & Poultry / Stored Feed & Water, 0-10 miles		N/A	0925	1057	1030	0925	N/A
VDOT terminate operations at Jamestown-Scotland Ferry		N/A	1108	N/A	1057	N/A	N/A
USCG Safety Zone on James River & FAA TFR in vicinity of		N/A	N/A	N/A	1200	N/A	N/A
Termination of Amtrak, CSX & Norfolk Southern Rail Service in affected area		1155	N/A	N/A	1201	1217	1217
Early dismissal of schools in the EPZ		0945	0910	0901	0911	N/A	N/A
First Alert & Notification Sequence		1220	1220	1220	1220	1220	1220
EAS/WEA		1220	1220	1220	1220	1220	1220
Second Precautionary / Protective Actions Describe:		1217	1217	1217	1217	1217	1217
•Evacuate PAZs 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18B, 22A, 22B							
2nd Alert & Notification Sequence		N/A	N/A	N/A	N/A	N/A	N/A
EAS Message Broadcast		N/A	N/A	1220	N/A	N/A	N/A
KI Decision - Emergency Workers		1217	1200	1220	1201	1217	1217
KI Decision - General Public		1217	1200	1220	1201	1217	1217
KI Decision - Persons with Disabilities or Access Functional Needs		1217	N/A	1220	N/A	1217	1217

Appendix B: Exercise Evaluators and Team Leaders

The following is the list of Evaluators and Team Leaders for the Surry Power Station Radiological Emergency Preparedness Plume Pathway Exercise evaluated on July 18, 2023, and Out-of-Sequence Exercise on June 21-22, 2023. The following constitutes the managing staff for the Exercise Evaluation:

- Thomas Scardino, DHS/FEMA, Regional Assistance Committee (RAC) Chair
- Daniel Rose, DHS/FEMA, Team Leader
- Zachary Corle, DHS/FEMA, Site Specialist

Location/Venue	Evaluator	Agency
Smithfield Middle School EAC	Daniel Rose	FEMA R3
Smithfield Middle School EAC	Taylor Griffiths	FEMA R3
Smithfield Middle School EAC	Lee Torres	FEMA R3
Smithfield Middle School EAC	Zachary Corle	FEMA R3
Virginia Commonwealth University (VCU) Hospital	Alexander Hazard	FEMA R3
Isle of Wight County EMS	Joseph Suders	FEMA R3
Grafton Middle/High School EAC	Thomas Scardino	FEMA R3
Grafton Middle/High School EAC	Zachary Corle	FEMA R3
Grafton Middle/High School EAC	Taylor Griffiths	FEMA R3
Grafton Middle/High School EAC	Lee Torres	FEMA R3
Riverside Regional Hospital	Joseph Suders	FEMA R3
York County EMS	Alexander Hazard	FEMA R3
Commonwealth of Virginia Emergency Operations Center	Daniel Rose	FEMA R3
Commonwealth of Virginia Emergency Operations Center	Todd Gemske	FEMA R7
Commonwealth of Virginia Emergency Operations Center	Taylor Griffiths	FEMA R3
Virginia Joint Information Center	Matthew Welshans	FEMA HQ
Virginia Accident Assessment Center VDH/ORH	Janise Stolarova	FEMA HQ
Virginia Accident Assessment Center VDH /ORH	Brad McRee	Cadmus
State Field Monitoring Team 1	Jeffrey Clark	FEMA R7
State Field Monitoring Team 2	Michael DeBonis	FEMA R2
Corporate Emergency Response Center (CERC)	MaryNette Herndon	Cadmus
Corporate Emergency Response Center (CERC)	Kevin Robinson	FEMA R2
City of Newport News Emergency Operations Center	Lee Torres	FEMA R3

Location/Venue	Evaluator	Agency
City of Newport News Emergency Operations Center	Deb Blount	Cadmus
City of Newport News Emergency Operations Center	Terry Blackmon	Cadmus
City of Newport News Staging Area	James Greer	Cadmus
Denbigh High School	James Fumbanks	FEMA HQ
City of Williamsburg Emergency Operations Center	Barbara Thomas	FEMA R1
City of Williamsburg Emergency Operations Center	William Webb	Cadmus
City of Williamsburg Emergency Operations Center	Paul Nied	Cadmus
City of Williamsburg Staging Area	Thomas Reynolds	Cadmus
City of Williamsburg – James City County Public Schools	Alonzo McSwain	FEMA HQ
Isle of Wight County Emergency Operations Center	Brian Hasemann	FEMA R2
Isle of Wight County Emergency Operations Center	Roy Smith	Cadmus
Isle of Wight County Emergency Operations Center	Larry Broockerd	FEMA HQ
Isle of Wight County Staging Area	Stephen Watts	Cadmus
Isle of Wight County Staging Area	Peter Connell	FEMA R3
James City County Emergency Operations Center	Alexander Hazard	FEMA R3
James City County Emergency Operations Center	Cheryl Weaver	Cadmus
James City County Emergency Operations Center	Michael Burriss	Cadmus
James City County Staging Area	Lynn Steffensen	Cadmus
Clara Byrd Baker Elementary	Robert Zucker	FEMA R3
Surry County Emergency Operations Center	Taneeka Hollins	FEMA R1
Surry County Emergency Operations Center	Gregory Voss	FEMA R7
Surry County Emergency Operations Center	Andrew Chancellor	FEMA R7
Surry County Staging Area	Meg Swearingen	Cadmus
L.P. Jackson Middle School	George LaBonte	FEMA R3
York County Emergency Operations Center	Christopher Nemcheck	FEMA R3
York County Emergency Operations Center	Herb Massie	Cadmus

Location/Venue	Evaluator	Agency
York County Emergency Operations Center	Jon Christiansen	Cadmus
York County Staging Area	Carol Shepard	Cadmus
Queens Lake Middle School	Christopher Nemcheck	FEMA R3
New Kent County Emergency Operations Center	Tina Thomas	FEMA R3

Appendix C: Extent-of-Play Agreement

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

The Exercise Plan was created as an overall tool for facilitation and implementation of the Surry Power Station Plume Exercise and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology.

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:

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

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

State Negotiated Extent of Play:

- Demonstrate the capability to receive and verify notification of an emergency from the licensee. Contact, alert, and mobilization of key emergency personnel. (VEOC will perform notification/activation of the key state agencies deemed necessary, but not physically represented in the EOC during the exercise.)
- Personnel will be pre-positioned. This pre-positioning will be for all locations, to include EOC, field locations and any out-of-sequence demonstrations.
- EOC Twenty-four (24) Hour Staffing will be demonstrated by roster.
- Mobilization notification systems will be described to the FEMA evaluator. Equipment used to mobilized staff will be shown and operation process described

Risk Jurisdictions Negotiated Extent of Play:

- Demonstrate the capability to receive and verify notification of an emergency from the licensee. Contact, alert, and mobilize key emergency personnel in a timely manner.
- Demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations.

<ul style="list-style-type: none"> • Demonstrate the capability to receive and verify notification of an emergency from the licensee. Contact, alert, and mobilize key emergency personnel in a timely manner. • Demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. • Personnel will be pre-positioned. This pre-positioning will be for all locations, to include EOC, field locations and any out-of-sequence demonstrations. • EOC Twenty-four (24) Hour Staffing will be demonstrated by roster. • Mobilization notification systems will be described to the FEMA evaluator. Equipment used to mobilized staff will be shown and operation process described
<p>Support Jurisdictions Negotiated Extent of Play:</p> <ul style="list-style-type: none"> • Demonstrate the capability to receive and verify notification of an emergency from the licensee. Contact, alert, and mobilize key emergency personnel in a timely manner. • Personnel will be pre-positioned. This pre-positioning will be for all locations, to include EOC, field locations and any out-of-sequence demonstrations. • EOC Twenty-four (24) Hour Staffing will be demonstrated by roster. • Mobilization notification systems will be described to the FEMA evaluator. Equipment used to mobilized staff will be shown and operation process described
<p>Outstanding Issues:</p> <p>N/A</p>

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:

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

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

Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> City of Williamsburg will be operating out of a temporary EOC due to construction of new facility.
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

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

Post Plume

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

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> If the scenario does not involve a release, this can be demonstrated by interview.
Risk Jurisdictions Negotiated Extent of Play:
N/A
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:

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

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> • Decisions held within the authority of the Governor, to include declaration of a state of emergency, orders to evacuate, and/or shelter any portion of the affected population, will be demonstrated by the VDEM State Coordinator or his/her representative in the Virginia EOC. These decisions will be coordinated with risk jurisdictions. 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. VDH decision makers will demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement sheltering and/or evacuation.
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> • If the scenario does not involve a release this can be demonstrated through interview. • James City County, York, Newport News and Surry County School Principal (or designee) interviews will be conducted at the EOC in a separate room. • Isle of Wight County and Surry County do not have any schools within the EPZ. At the EOC the school district representative will explain the process for children that live

- If the scenario does not involve a release this can be demonstrated through interview.
- James City County, York, Newport News and Surry County School Principal (or designee) interviews will be conducted at the EOC in a separate room.
- Isle of Wight County and Surry County do not have any schools within the EPZ. At the EOC the school district representative will explain the process for children that live in the EPZ but attend schools outside of the EPZ and provide the evaluator a list of students as appropriate.

Support Jurisdictions Negotiated Extent of Play:

N/A

Outstanding Issues:

41-22-1.4-P-01: The Virginia State Emergency Operations Center process for protective action decisions during the accident scenario led to a period of about 60 minutes from the start of the major radiological release to the issuance of the Emergency Alert System message for evacuation of the affected areas. Considerable time was taken to select the protective action zones to match the downwind keyhole protective action recommendation from the North Anna Power Station.

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:

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

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

- Evacuation routes for the general public will be identified.
- If the scenario does not involve a release this can be demonstrated through interview.
- One transportation provider will be contacted; all other calls will be simulated.
- All simulated contacts will be logged.
- For the purpose of the exercise schools are in session.
- Transportation of school children, if necessary, will be simulated.
- Interviews with school officials will occur in sequence which will include a district and school representative for those jurisdictions. This interview will include discussion on the notification and reunification process.
- The district superintendent or designee for Williamsburg/James City County Schools will be located at the City of Williamsburg EOC and a risk school principal or designee will be located at James City County EOC.
- Transportation dependent routes will be demonstrated through interviews.
- The list identifying AFN populations will be available to evaluators but may not leave the EOC. Due to the nature of protected personal information the list will be a scrubbed list.
- Communications will be verified by the bus driver via interview.
- James City County and Williamsburg share a school district, there will be one transportation director or designee and one bus driver for both risk jurisdictions evaluated at James City County. The evaluator may ask questions concerning either jurisdiction plans for the movement of school children and transportation dependent individuals.
- Isle of Wight County and Surry County do not have any schools within the EPZ. At the EOC the school district representative will explain the process for children that live in the EPZ but attend schools outside of the EPZ and provide the evaluator a list of students as appropriate. The principal (or designee) of L.P. Jackson Middle School will be playing in the Surry County EOC.

Support Jurisdictions Negotiated Extent of Play:

- Discuss with evaluator (s) the process to implement school closure notifications to prepare for EAC operations per their plans and procedures.

Outstanding Issues:

N/A

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:

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

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

State Negotiated Extent of Play:
N/A
Risk Jurisdictions Negotiated Extent of Play:
N/A
Support Jurisdictions Negotiated Extent of Play:
N/A
Outstanding Issues:
N/A

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:

- Communicate and implement protective actions for agribusinesses, such as dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points.
- Formulate protective action information (e.g., brochures, email, text message, etc.) for the general public and food producers and processors.

- Control, restrict, or prevent distribution of contaminated food by commercial sectors, ensuring communication and coordination with agencies responsible for enforcing food controls.
- Communicate instructions to the public regarding relocation decisions and intermediate-term housing for relocated persons.
- Coordinate and implement decisions concerning relocation, including short- and/or long-term relocation of evacuees.
- Control reentry and exit of individuals who are authorized by the ORO to temporarily reenter the restricted area.
- Implement policies concerning return of members of the public to areas that were evacuated during the plume phase.

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

State Negotiated Extent of Play:	
N/A	
Risk Jurisdictions Negotiated Extent of Play:	
N/A	
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:

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

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

State Negotiated Extent of Play:
N/A
Risk Jurisdictions Negotiated Extent of Play:
N/A
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:

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

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> • This objective will be demonstrated in-sequence on July 18 at Surry/VDOT Staging area located on Route 10. The VDH/ORH staging area personnel will demonstrate the capability to manage dose and exposure and equip emergency workers with appropriate dosimetry and radioprotective drugs, as per procedures.
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> • Emergency Workers who are assigned dosimetry will demonstrate the procedures to monitor and record dosimetry readings. The workers will be interviewed by the evaluator to determine their knowledge of radiological exposure control, radiation exposure limits, turnback values and whom to contact in the event authorization is needed to exceed their limits.

- Emergency Workers who are assigned dosimetry will demonstrate the procedures to monitor and record dosimetry readings. The workers will be interviewed by the evaluator to determine their knowledge of radiological exposure control, radiation exposure limits, turnback values and whom to contact in the event authorization is needed to exceed their limits.
- James City County Staging area activities will occur in a designated area not co-located with the EOC located at 3127 Forge Road Toano, Virginia 23168, instead of at Warhill High School.
- If scenario events do not require emergency workers to seek authorization for additional exposure, evaluators will interview one emergency worker to determine their knowledge of whom to contact in the event authorization is needed.
- Emergency workers may use any available resources.
- Demonstrate with the radiological officer and/or respective ESF KI distribution to emergency workers.
- Simulated KI will be used. Actual KI will be shown to the evaluator.

Support Jurisdictions Negotiated Extent of Play:

- Emergency Workers who are assigned dosimetry will demonstrate the procedures to monitor and record dosimetry readings. The workers will be interviewed by the evaluator to determine their knowledge of radiological exposure control, radiation exposure limits, turnback values and whom to contact in the event authorization is needed to exceed their limits.
- If scenario events do not require emergency workers to seek authorization for additional exposure, evaluators will interview one emergency worker to determine their knowledge of whom to contact in the event authorization is needed.
- Emergency workers may use any available resources.
- Demonstrate through interview with the radiological officer and/or respective ESF how KI would be distributed to the EPZ Emergency Worker.
- Simulated KI will be used. Actual KI will be shown to the evaluator.

Outstanding Issues:

None

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”).

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 Negotiated Extent of Play:
<ul style="list-style-type: none"> • The primary communication method and at least one additional communications system will be available for demonstration. • Demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations.
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> • The primary communication method and at least one additional communications system will be available for demonstration. • Communications associated with medical support facilities will be demonstrated during the Out-of-sequence events on June 21, 2023, and June 22, 2023.
Support Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> • The primary communication method and at least one additional communications system will be available for demonstration.
Outstanding Issues:

None

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

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

EAS

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

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 Negotiated Extent of Play:

- Procedures to broadcast message should be fully demonstrated as they would in an actual emergency up to the point of transmission.
- The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with the SAU appropriate players.
- The VDEM SAU will produce a WEA/EAS non-public exercise message with IPAWS lab. A copy of the non-public exercise message will be printed for the evaluator.
- Any delays due to the coordination with IPAWS Lab review will be taken into consideration in regards to timing of notification to the public.

<ul style="list-style-type: none"> Procedures to broadcast message should be fully demonstrated as they would in an actual emergency up to the point of transmission. The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with the SAU appropriate players. The VDEM SAU will produce a WEA/EAS non-public exercise message with IPAWS lab. A copy of the non-public exercise message will be printed for the evaluator. Any delays due to the coordination with IPAWS Lab review will be taken into consideration in regards to timing of notification to the public. The VDEM SAU will produce a non-public exercise message through Resident Connect to a group of preidentified exercise evaluators and controllers. The FEMA IPAWS TSSC will provide a staff member to the VDEM SAU to serve as an observer. The FEMA IPAWS TSSC is not an exercise participant and will not interfere with exercise play.
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> Risk jurisdictions should be able to explain process to validate success of alert signal and instructional message. Any special alerting areas that require supplemental alerting will be described to the evaluator. Demonstrate the capability to alert and notify AFN populations will occur. (This will be simulated).
Support Jurisdictions Negotiated Extent of Play:
N/A
Outstanding Issues:
None

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.

- Provide information to the public that addresses temporary reentry to a restricted area, permanent relocation from areas not evacuated, and return to formerly restricted areas will be communicated.

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

State Negotiated Extent of Play:

- News releases will be shared with local jurisdictions.
- Dissemination of news releases may be accomplished by the use of e-mail or other means.
- JIC staff will demonstrate to evaluators the procedures for identification of trends in rumors, misleading information, logging calls, and the process for referring callers to appropriate agencies for emergency information.
- 2-1-1 will be activated and staffed to receive public inquiry calls.
- Some calls will be designed as to allow public inquiry staff to demonstrate the capability to identify trends and rumors.
- Public information staff will discuss the process for monitoring media with the evaluator to determine whether false or misleading information is being disseminated to the public.
- All emergency information and instruction will be provided to the public and the media in a timely manner and will be consistent with protective action decisions made by appropriate officials.
- The Commonwealth of Virginia will demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media.
- One simulated media briefing will occur at the Virginia EOC.
- Should a protective action or press release be required by a non-playing entity the JIC will discuss with the evaluator how JIC staff would contact the specific entity to ensure a press release would be drafted and published.

Risk Jurisdictions Negotiated Extent of Play:

- Each jurisdiction will establish a public inquiry phone line and will respond to calls.
- Trends and rumors will be identified, if applicable and sent to the JIC for situational awareness.
- One simulated media briefing will occur at the risk jurisdiction EOC if identified to occur in their respective jurisdiction(s) plans and procedures.
- FEMA evaluators may ask questions specific to the scenario and relevant to the media briefing comments.

Support Jurisdictions Negotiated Extent of Play:

- Each jurisdiction will establish a public inquiry phone line and will respond to calls.

- Each jurisdiction will establish a public inquiry phone line and will respond to calls.
- Trends and rumors will be identified, if applicable and sent to the JIC for situational awareness.
- If scenario play drives appropriate protective action implementation, which would affect the host jurisdiction, then simulated press releases will occur per their plans and procedures.

Outstanding Issues:

41-22-3.3-L2-01: The VDEM Chief Agency Spokesperson did not consider dissemination of press releases for the following actions, in accordance with procedures. During the media briefing the VDEM Chief Agency Spokesperson did not speak to traffic impediments on evacuation routes, did not coordinate with local governments in the preparation and dissemination of news releases, and provided inaccurate information regarding pets at EACs.

62-21-5b1-L2-01: The Public Information Officer (PIO) failed to follow their plan and issue a special needs news release notifying James City County residents of the telephone number to call for special evacuation assistance.

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:

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

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

State Negotiated Extent of Play:

- This objective will be demonstrated in-sequence on July 18 and out-of-sequence on June 22, as follows:
- The VDH/ORH Radiation Safety Officer will provide a briefing, per procedure, to field team members in-sequence on July 18 at Surry-VDOT Staging area located on Route 10.
- The VDH/ORH staging area personnel will conduct the instrumentation and supplies checklist and equipment operational checks out-of-sequence at the York County EAC exercise on June 22, 2023, at the Grafton School Complex. The Mobile Incident Command Laboratory (MICL) and two field monitoring team vehicles will be available for the demonstration.

- This objective will be demonstrated in-sequence on July 18 and out-of-sequence on June 22, as follows:
- The VDH/ORH Radiation Safety Officer will provide a briefing, per procedure, to field team members in-sequence on July 18 at Surry-VDOT Staging area located on Route 10.
- The VDH/ORH staging area personnel will conduct the instrumentation and supplies checklist and equipment operational checks out-of-sequence at the York County EAC exercise on June 22, 2023, at the Grafton School Complex. The Mobile Incident Command Laboratory (MICL) and two field monitoring team vehicles will be available for the demonstration.
- The VDH/ORH field team coordinator will direct the field monitoring teams to monitoring locations on July 18 at the CERC. The VDH/ORH field team coordinator will operate from the CERC in Glen Allen, VA.
- The FTC will pick monitoring points from the Corporate Emergency Response Center. Field Teams will not deploy to these monitoring points. Once acknowledging receipt of their assignment, the field teams will receive an inject message with directions to deploy to a monitoring point more appropriate for the exercise evaluation.
- At this monitoring point field teams will demonstrate monitoring and sampling procedures as directed by the FTC. Controllers will provide radiological data as indicated in the exercise scenario.
- Once field teams have completed their demonstrations the FTC will direct them to a background location. Controllers will provide an inject at this point to have the field teams return to the staging area.

Risk Jurisdictions 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:

- Maintain emergency equipment including calibration and operational checks according to manufacturer's specifications or per national standards.
- Maintain inventory for emergency kits.

- Collect representative air samples in the active plume on particulate media (e.g., glass or paper filter) and iodine selective media (e.g., silver zeolite cartridge).
- Handle sample media and equipment to avoid sample cross-contamination, contamination of equipment and personnel contamination.
- Determine an appropriate low background location to count sample media.
- Count iodine and particulate media using appropriate and effective instrumentation and counting geometries or have samples analyzed by a supporting laboratory within four hours.
- Report to field monitoring team manager all survey and counting results in format and units suitable for use by the organization's dose assessor.
- Procedures, qualified collection and counting efficiencies, and calculations are capable of detecting airborne radioactive iodine concentrations as low as 10^{-7} $\mu\text{Ci/cc}$.

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

State Negotiated Extent of Play:

- This objective will be demonstrated in-sequence on July 18 at Surry-VDOT Staging area located on Route 10. The VDH/ORH staging area personnel will demonstrate the ability to maintain emergency equipment including calibration records and field monitoring team kits. The two state field monitoring teams will demonstrate the ability to operate radiation survey instruments and use appropriate contamination control procedures. The state field teams will demonstrate the ability to relay readings to the state field team coordinator and will return to the staging area when directed to a low background area following the air sample collection. The state field team demonstration will end following the return of the sample to the sample receipt officer. Sample receipt and chain-of-custody will be demonstrated. A controller will accompany each team and provide the necessary radiological data.
- Should inclement weather exist, field team demonstrations will occur at the Surry County EOC.
- Field Teams will not complete their equipment/supplies checklist and equipment operational checks as these were demonstrated in June. Controllers will provide an inject that availability of all required equipment has been confirmed and that all equipment checks have been completed.
- Once briefed and provided with the inject message field teams will finalize pre-deployment procedures and at Site Area Emergency classification they will notify the ORH Field Team Coordinator (FTC) they are ready for deployment.
- Controllers will then delay the departure of the field teams with an inject message involving vehicle malfunctions. Teams will notify the FTC. While waiting for the simulated vehicle issues to be resolved the field teams will demonstrate donning and doffing of PPE. One member per team will demo.

- This objective will be demonstrated in-sequence on July 18 at Surry-VDOT Staging area located on Route 10. The VDH/ORH staging area personnel will demonstrate the ability to maintain emergency equipment including calibration records and field monitoring team kits. The two state field monitoring teams will demonstrate the ability to operate radiation survey instruments and use appropriate contamination control procedures. The state field teams will demonstrate the ability to relay readings to the state field team coordinator and will return to the staging area when directed to a low background area following the air sample collection. The state field team demonstration will end following the return of the sample to the sample receipt officer. Sample receipt and chain-of-custody will be demonstrated. A controller will accompany each team and provide the necessary radiological data.
- Should inclement weather exist, field team demonstrations will occur at the Surry County EOC.
- Field Teams will not complete their equipment/supplies checklist and equipment operational checks as these were demonstrated in June. Controllers will provide an inject that availability of all required equipment has been confirmed and that all equipment checks have been completed.
- Once briefed and provided with the inject message field teams will finalize pre-deployment procedures and at Site Area Emergency classification they will notify the ORH Field Team Coordinator (FTC) they are ready for deployment.
- Controllers will then delay the departure of the field teams with an inject message involving vehicle malfunctions. Teams will notify the FTC. While waiting for the simulated vehicle issues to be resolved the field teams will demonstrate donning and doffing of PPE. One member per team will demo.
- FTC will direct teams to return to the staging area to turn in their samples. At the staging area field teams will complete all remaining steps of the air sampling procedure.
- Demonstration will end once the field teams notify the FTC that they have packaged and identified their air sample and chain of custody exchange is demonstrated.

Risk Jurisdictions Negotiated Extent of Play:

N/A

Support Jurisdictions Negotiated Extent of Play:

N/A

Outstanding Issues:

None

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)

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

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:

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

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> • Laboratory operations will not be demonstrated.
Risk Jurisdictions Negotiated Extent of Play:
N/A
Support Jurisdictions Negotiated Extent of Play:
N/A

Outstanding Issues:
None

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:

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

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> • This objective will be demonstrated in-sequence on July 18. VDH/ORH staff at the CERC will obtain adequate data to make dose projections in accordance with procedures and relay information to decision-makers located in ESF8.
Risk Jurisdictions Negotiated Extent of Play:
N/A
Support Jurisdictions Negotiated Extent of Play:
N/A
Outstanding Issues:
None

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:

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

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

State Negotiated Extent of Play:
N/A
Risk Jurisdictions Negotiated Extent of Play:
N/A
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:

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

Monitoring

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

Decontamination

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

Vehicles

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

Sheltering and Congregate Care

- Coordinate for incoming evacuees who have been monitored and, if necessary, decontaminated.
- Establish shelter operations.

- Congregate care centers and operations in host/support jurisdictions are sufficient to support the expected number of evacuees.

Registration

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

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

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

State Negotiated Extent of Play:	
N/A	
Risk Jurisdictions Negotiated Extent of Play:	
<ul style="list-style-type: none"> • Evacuation Assembly Centers <ul style="list-style-type: none"> ▪ Smithfield Middle School will be demonstrated June 21, 2023, from 0800 – 1200 approximately. ▪ Grafton Middle/High School will be demonstrated June 22, 2023, from 0900 – 1200 approximately. • Setup of facilities may be done prior to the out-of-sequence evaluations and all personnel will be pre-staged for the EAC Demonstration. • Decontamination of evacuees, personnel will be explained at all locations. Actual decontamination will be simulated. • The availability of provisions for separately showering will be demonstrated or explained. • The sequence for monitoring/decontamination efforts and the decision to refer individuals who cannot be decontaminated to medical facilities will be demonstrated via inquiries. • One monitoring station will be established. • A total of six (6) people will be monitored at the EAC. At least one (1) will be contaminated via controller inject. • Provisions and arrangements for the radiological monitoring of service animals and pets will be demonstrated through interview. • The capability to register six (6) individuals will be demonstrated. • One vehicle and one individual decontamination area will be established. • One contaminated and one non-contaminated evacuee and emergency worker vehicle will be processed, and decontamination will occur in accordance with plans and procedures, radiation levels will be presented via controller inject. • Should outside weather conditions exist that create a potential health hazard, PPE usage will be verbalized. • An approx. three-to-four-foot piece of paper will be laid on the floor while the rest will be available for evaluator visual confirmation of availability. 	
Support Jurisdictions Negotiated Extent of Play:	

- Discuss with the evaluator through interview the activation of staff to support the EAC, if the scenario drives this action.

Outstanding Issues:

None

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:

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

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

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

State Negotiated Extent of Play:

N/A

Risk Jurisdictions Negotiated Extent of Play:

- The Emergency Worker Decontamination will take place during the EAC out-of-sequence evaluations:
- Evacuation Assembly Centers
 - Smithfield Middle School will be demonstrated June 21, 2023, from 0800 – 1200 approximately.
 - Grafton Middle/High School will be demonstrated June 22, 2023, from 0900 – 1200 approximately.
- Two Emergency Workers will be monitored for contamination. Discussions on the need for decontamination will be made based on controller injected radiation levels. One will be contaminated.

<ul style="list-style-type: none"> • The Emergency Worker Decontamination will take place during the EAC out-of-sequence evaluations: • Evacuation Assembly Centers <ul style="list-style-type: none"> - Smithfield Middle School will be demonstrated June 21, 2023, from 0800 – 1200 approximately. - Grafton Middle/High School will be demonstrated June 22, 2023, from 0900 – 1200 approximately. • Two Emergency Workers will be monitored for contamination. Discussions on the need for decontamination will be made based on controller injected radiation levels. One will be contaminated. • Contamination control and record-keeping procedures will be demonstrated. • Decontamination of emergency workers will be demonstrated through interview. • One contaminated and one non-contaminated emergency worker vehicle will be processed, and decontamination will occur. • The sequence for monitoring/decontamination efforts and the decision to refer individuals who cannot be decontaminated to medical faculties will be demonstrated via inquiries. • One emergency worker vehicle will be monitored and decisions regarding the need for decontamination will be made as radiation levels are presented via controller injects. • Decontamination of personnel/equipment will be explained at all locations. Actual decontamination will be simulated. • Should outside weather conditions exist that create a potential health hazard, PPE usage will be verbalized.
Support Jurisdictions Negotiated Extent of Play:
N/A
Outstanding Issues:
None

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

- Operationally check instruments and equipment.
- Set-up, activate, and operate an REA.

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 Negotiated Extent of Play:
N/A
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> June 21st, 2023: Isle of Wight Fire/EMS will demonstrate the ability to respond to a simulated injured/contaminated individual requiring transport to Virginia Commonwealth University Medical College of Virginia (VCU MCV). Contamination levels will be provided to EMS personnel by controller inject. EMS personnel will demonstrate appropriate contamination control measures before and during transport of the victim. Decontamination of the victim will be deferred to the medical facility due to injuries taking precedence over contamination. Communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information. June 22nd, 2023: York County Fire/EMS will demonstrate the ability to respond to a simulated injured/contaminated individual requiring transport to Riverside Regional Medical Center. Contamination levels will be provided to EMS personnel by controller inject. EMS personnel will demonstrate appropriate contamination control measures before and during transport of the victim. Decontamination of the victim will be deferred to the medical facility due to injuries taking precedence over contamination. Communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information. Communications with VCU MCV will be simulated, communication with Riverside Hospital will occur.
Support Jurisdictions Negotiated Extent of Play:
N/A
Outstanding Issues:
None

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:

- Select, establish, and staff appropriate TCP/ACPs, consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation), in a timely manner.
- Provide instructions to TAC staff on actions to take, including when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.
- Contact the state or Federal agencies that have the authority for the different transportation modes (e.g., rail, water, and air traffic).
- Identify and take appropriate actions concerning impediments that affect the evacuation and evacuation routes.
- Make the decision to re-route traffic and coordinate with key decision-makers and the JIC to ensure the alternate route information is appropriately communicated to evacuees.
- Establish procedures to control access to and monitor people and vehicles from the evacuated and restricted areas.
- Authorize reentry of individuals into the restricted areas.
- Establish exit procedures.

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

State Negotiated Extent of Play:
<ul style="list-style-type: none"> • JIC staff will discuss with the evaluator how 5-1-1 is utilized to broadcast real-time road status information to evacuees. • ESF-1 representative will describe via interview to the evaluator the process for response to traffic impediments on state highway evacuation routes.
Risk Jurisdictions Negotiated Extent of Play:
<ul style="list-style-type: none"> • Risk jurisdictions, driven by Protective Action Decisions (PADs) to activate traffic/access control points will activate one traffic control point (TCP) and one access control point (ACP) simulated at the staging area. • Both the TCP/ACP will be evaluated via interview conducted with one unit (officer). • Risk jurisdictions will demonstrate the capability to provide instructions to TCP/ACP staff on actions to take when modifications to protective action strategies necessitate change in evacuation patterns or in the area(s) where access is controlled. This will be demonstrated in sequence. • One impediment inject will be provided to the local EOC for rerouting of evacuation routes. The traffic diversion will be communicated to the public/evacuees through the Joint Information System. If the scenario does not lead to an evacuation, the process will be explained to the evaluator. • TCP/ACP supplies will not physically be set up but will be available for evaluator review during the interview process. This can also be demonstrated via providing the evaluator an inventory list of TCP/ACP equipment.

Support Jurisdictions Negotiated Extent of Play:

- Support Jurisdictions, driven by Protective Action Decisions (PADs) to activate traffic/access control points will activate one traffic control point (TCP) as designated in their plans/procedures.
- The TCP will be evaluated via interview conducted with one unit (officer).

Outstanding Issues:

None